

**THE INFLUENCE OF COMMUNITY PARTICIPATION ON SUSTAINABILITY OF
COMMUNITY WATER PROJECTS: THE CASE OF PCEA WATER PROJECT IN
KITENGELA DIVISION KAJIADO COUNTY**

BY

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SCHOOL OF PLANNING AND ARCHITECTURE

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DECLARATION

This Research Project is my original work and has not been submitted for the award of any degree in any other University.

Signed

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The project has been submitted for examination with my approval as University supervisor

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I want to convey my sincere gratitude to all my respondents for taking time out of their busy schedules to provide me all the information that helped me in my research.

Above all, I thank God who gave me strength and good health throughout the entire period.

DEDICATION

I dedicate this research project to my family members; my husband George Matwere, my son Irvin Matwere and my daughter Nyla Nyakona for their incomprehensible support, patience, encouragement. They gave me the will and determination to complete my masters.

ABSTRACT

The Government of Kenya and non-governmental organizations have promoted interventions or projects aimed at improving water situations in the Arid and Semi-Arid Lands though with some low level of sustainability. Initiating projects to ease accessibility to water in Arid and Semi-Arid Lands is a good cause; however, without proper planning and integrated approach that ensures sustainability of water sources and its accessibility, such projects will not have lasting impact. This project studied the influence of community participation in improving the sustainability of the water projects in the target area. There is need to understand why there are numerous water projects being implemented in Kitengela yet water shortages persist. The objectives were set as: to establish the capacity of water management committees, to assess the level of community participation and to examine the factors hindering community participation in community water projects in Kitengela Division. Descriptive survey design and observation methodology was used to collect research data. The target population was 12,000 households with a sample size of 396. The project management to participate in the study was selected through simple random sampling while the Non-Governmental Organizations/Community Based Organizations staff and government officers were purposively selected. Descriptive statistics was used and the data collected edited, coded and analyzed using SPSS. The study showed that the capacity building focused on the water management committees does not fully include the ordinary community member in order to operate and maintain the water systems on their own. The study also found out that the community was only involved partially, the community was involved at identification stage but in subsequent stages, consultations were minimal. Equally, most community members said that they had experienced various challenges during participation in project activities and that influenced sustainability of projects. In investigating capacity building for the water management committees to ensure sustainability, the study established that, the policy used should be adapted to suit the needs of the people and to include monitoring and evaluation. Sustainability was inadequately addressed during the initial stages of project identification. For a water project to be sustainable, sense of ownership must be instilled, participation must be promoted and even sharing costs must be addressed. The study also revealed that lack of information, lack of capable local organization/leadership and lack of resources are some of the challenges facing community participation. It is therefore recommended that proper training and technical support at all levels and for all groups engaged in water project implementation and management should be given priority, at the same time the community should be involved or mobilized so as to build interest in sustaining the initiated water projects.

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ABBREVIATIONS/ACRONYMS

ALRMP II	Arid Lands Resource Management Project II
ASALs	Arid and Semi-Arid Lands
ADB	Asian Development Bank
CAPs	Community Action Plans
CBD	Community Based Development
CBO	Community Based Organization
FBO	Faith Based Organization
IFAD	International Fund for Agricultural Development
KNBS	Kenya National Bureau of Statistics
KPRS	Kenya Poverty Reduction Strategy
KRDS	Kenya Rural Development Strategy
NGO	Non-governmental Organization
SPSS	Statistical Package for Social Sciences
WUA	Water Users Association

OPERATIONAL DEFINITION OF TERMS

Sustainability of projects: entails ensuring that the institutions supported through projects and the benefits realized are maintained and continue after the end of the donor project. These institutions continue to play their intended roles and benefits realized maintained and even expanded/diversified.

Community participation is defined as community involvement. For the purpose of this study community participation means genuine involvement and participation of the beneficiaries/local community in all phases of the funded projects life cycles from the project identification to implementation and post implementation stage.

Fund is money set aside for a certain purpose.

Project implementation is the phase in the project lifecycle where the planned, designed, appraised and selected project is launched and executed in order to achieve the intended goal.

Donor exit strategy: An exit strategy for a programme/project is a specific plan describing how the programme will withdraw from a region or population while ensuring that the achievement of development goals is not jeopardized. It is explicitly linked to sustainability in that it also considers means of ensuring further progress towards these goals after the end of an agency's technical and financial support.

Established community Committees (CDCs): These are community based project management committees established to implement projects on behalf of the larger community group. The CDCs are charged with day to day management of the projects and act as an umbrella community structure that coordinates development assistance at the community level.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Water resources are increasingly scarce because of over-exploitation, wastage and pollution, while population growth, socio-economic development and industrialization are pushing up water demands (Hartvelt, 1995). The concept of successful project sustainability has been at the center of various authors review. Community-based and driven development projects have become an important form of development assistance. The success and the sustainability of these projects depend on empowering participants to take on greater roles, responsibility and control. Project sustainability is a qualitative process that cannot be measured using only quantifiable indicators. While quantification in relation to project outputs may be sufficient, the qualitative dimensions of participation should also be evaluated. The participants should express why they refrain or participate in projects (Sonomi, 2010).

Capacity building is an essential component to the sustainability of water projects. (Wertz 2011:21-22), defines capacity building as “a coordinated process of deliberate interventions to upgrade skills, improve procedures and strengthen organizations”. Water supply systems inevitably need maintenance and repair. Since the main objective is community ownership and operation, the members of the community need to be trained on how to keep the water systems running smoothly.

A standard practice in Kajiado County of community involvement is through the operation of water management committees (WMC). This involves five to seven members who are elected in

the community, the criteria used is basic education, residence, gender, age and willingness to volunteer. However the capacity building is emphasized vertically and fails to reinforce horizontal linkages among the community members.

One of the major aims of community development is to encourage participation of the community as a whole. Indeed, community development has been defined as a social process resulting from citizen participation (UN, 1963; Vaughan, 1972; Darby and Morris, 1975; Christenson and Robinson, 1980; Rahman, 1990 in Smith, 1998). Through citizen participation, a broad cross-section of the community is encouraged to identify and articulate their own goals, design their own methods of change, and pool their resources in the problem solving process (Harrison, 1995). This in effect enhances community steered sustainability of the development works, as the community raises a sense of inclusion and ownership towards the respective projects at hand. Carter and Howsam 1999 observed that in many Africa countries, the failure of water projects is 30%-60% because of the approach of building water facilities while forgetting the importance of involving communities in all aspects of water service delivery and use of appropriate technologies.

A commonly observed fact is that many water projects in Kitengela have not continued to work over time, they have not been sustainable. Initiating projects to ease accessibility to water in Kajiado is a good cause, however without proper planning and an integrated approach that ensures sustainability of water sources and its accessibility, such projects may not have lasting impacts (Marcel Rutten 2005). Sustainability of water projects is threatened by numerous attitudinal, institutional and economic factors. Sometimes, lack of transparency and

accountability among community leaders, strict and non-flexible donor agencies policies especially on budgeting and funding procedure and high levels of poverty for most community members may hinder participation. (Chartered Institution of Water and Environmental Management Volume 13, 1999).

The objectives of this study emanate from the challenges of establishing sustainable water projects in Kitengela. The first objective is to establish the capacity of the water management committees. This would allow the researcher to determine the extent of the operations of the water management committees. There is a sustainability problem in water projects in Kitengela. The assessment of the level of community participation in the water projects in Kitengela would assist to increase sustainability since the people will be part of the development. The final objective is to examine the factors hindering community participation in community water projects because, it is apparent that community participation would boost the sustainability of the projects.

It is therefore important that a deeper understanding of the dynamics of access to water and management of water projects in Kitengela are explored with the view to ensure sustainability. To achieve this, the study attempted to establish the capacity of water management committees in Kitengela. Additionally, this study intended to assess the level of community participation and the influence it had on sustainability of community managed water projects within the Division. This study further looked at the challenges to participation in the community managed water projects.

1.2 Statement of the Problem

Kenya is a water scarce country and the problem is more severe in the ASALs where Kajiado County is situated. According to the Republic of Kenya National Policy on Disaster Management (2004), almost 70% of Kenya's land mass is affected by drought. This covers most parts of Rift Valley, North Eastern and Coast region. Kajiado is one of the areas which fall within the Rift Valley region that faces perennial drought and limited water resources. The Government and Non-Governmental Organizations have developed interventions to support communities in these areas to establish water projects. Despite the numerous water projects being implemented, water shortages are still persisting.

Community participation helps to break down the cycle of dependence which characterizes much top-down development work. The Government of Kenya has made great efforts to recognize the role of community based organizations in water resources management. Various international treaties and conventions have been adopted and incorporated into our national laws and policies with the intention of enhancing community participation on sustainability of community water projects.

Apart from that, there are water management committees that spearhead the projects. These committees have been instrumental in the setting up of water projects in Kitengela. The main problem has been the projects are implemented but the water shortage problem persists. The various objectives helped to identify reasons why the water projects are not sustainable and suggestions given on how to integrate community participation so as to achieve sustainability of water projects in Kitengela. A study of the level of participation and the capacity of water

management committees would assist by identification of factors that hinder sustainability in the water projects in Kitengela.

However, on determinants of community ownership of water projects in Kenya, specifically central Division of Isiolo County revealed that community involvement, type of technology, distance and training influences the level of community ownership of water projects, Jatani B (2012). Equally on factors influencing sustainability of community water projects in Keekonyokie central location, Kajiado County and found that most water projects did not function to full capacity, Ng'etich R (2009). The above studies conducted focused on community ownership of water projects, technological and financial sustainability, however this study focused on the community participation perspective of sustainability of water projects in Kitengela Division, Kajiado therefore, this study intends to fill the knowledge gap on the influence of community participation on sustainability of community managed water projects in Kitengela Division, Kajiado County.

1.3 Purpose of the Study

The study intends to establish the influence of community participation on the sustainability of community water projects in Kitengela Division of Kajiado County.

The specific objectives are to

1. To establish the capacity of water management committees in Kitengela Division, Kajiado County.
2. To assess the level of influence of community participation on sustainability of community managed water projects in Kitengela Division, Kajiado County.

3. Examine the factors hindering community participation in community water projects from Kitengela Division, Kajiado County.

1.4 Research Questions

1. How does the capacity of WMC affect the sustainability of community water projects in Kajiado?
2. How does community participation influence on sustainability of community managed projects in Kitengela division, Kajiado County?
3. What are the factors hindering community members from community participation on sustainability of community projects in Kajiado County?

1.6 Significance of the Study

This study seeks to identify the fact that through participation, local people identify their needs as well as the relevant goals of a program. By participating in decision making and implementation activities, local people help project officials identify (1) needs, (2) strategies to meet those needs, and (3) the necessary resources required to implement the various strategies (Yadama, 1995).

On information dissemination this study will seek to point out that this is a one-way flow of information from the proponent of the development project to the public and that the proponent should provide sufficient relevant information about the project such as the benefits of the project to the beneficiaries, the costs of implementation, the potential for financing and implementation, and possible risk factors.

The constitution of Kenya 2010 allocates over 15% of the Kenyan budget to County governments to facilitate development and service delivery to the citizenry. Kajiado County

Government expenditure estimates for fiscal year 2013/2014 allocated 46 percent (Kshs. 1.456 Billion) to development projects. The study findings will be vital to new devolved government units in ensuring sustainability of expected huge community project investments. In addition, the findings of this study will aid many other development agencies both governmental and non-governmental to enhance sustainability of their project interventions.

1.7 Scope and Limitations of the Study

This study was limited to component of funded projects in Kitengela division of Kajiado County, Kenya. Dilapidated roads and poor telecommunications infrastructure were the constraints to this study. Uncooperative local leaders were also a big challenge because they were suspicious on the motives of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the relevant literature on influence of community participation on sustainability of community managed water projects. It also discusses the literature on the theory of participatory development and empowerment and an elaborate illustration of a conceptual framework upon which the study will be based.

2.2 Sustainability of Water Projects

Community projects sustainability has been overly assessed in many studies and the results seem to come to congruence that community participation and set up of the participant community or both integrated have a compounding effect on the sustainability of community projects. Participation depends on people's legitimate interests in the project or development activities. Therefore, participation needs to be considered as an active process, meaning that the person or group in question takes initiatives and asserts an independent role. (Cheick 2006)

On the public involvement in decision making the project should encourage a maximum number of people in the participation of development projects. Such involvement should give the participants full inclusion in designing, organizing, and implementing activities and workshops in order to create consensus, ownership, and action in support of environmental change in specific areas. It should include people and groups rather than exclude any individuals. Public

involvement is a process for involving the public in the decision making of an organization (Becker, 1997). Participation actually brings the public into the decision- making process.

White (1989) stressed community involvement in management of marine protected areas. According to the author, public involvement can take place at several stages in the establishment and management of marine protected areas. These stages are: (1) the recognition of a need; (2) discussions with interested parties and integration with the community; (3) baseline studies and monitoring; (4) education; (5) core group building and formalization of reserves; and (6) enforcement.

This historical review literature reflects the various ways in which sustainability can be viewed. There is however several factors which affect sustainability of water projects not only in Kitegela Kajiado county, but also in many other regions as pinpointed in this review literature including: financial, institutional, technical and social/environmental aspects (Panthie and Bhattarie, 2006).

2.3 Capacity of Water Management Committees

Community capacity building is about supporting people in communities to develop the skills and knowledge that they need to enable them to work together to bring about the positive change they want to see within their own communities (Department of Agriculture and Rural development, NI2014). Community capacity building therefore is a program or project which provides people with the skills, knowledge and experience needed to help them contribute to their changing community. Community empowerment refers to the process of enabling communities to increase control over their lives. Communities are groups of people that may or may not be spatially connected, but who share common interests, concerns or identities. These

communities could be local, national or international, with specific or broad interests, (Carter, 2007).

Enabling implies that people cannot be empowered by others; they can only empower themselves by acquiring more of power's different forms. Process by which they increase their assets and attributes and build capacities to gain access, partners, networks and/or a voice, in order to gain control. It assumes that people are their own assets, and the role of the external agent is to catalyze, facilitate or accompany the community in acquiring power, (Laverack, 2008).

Mengesha *et al* (2003) in their study on sustainability of drinking water supply projects in Rural of North Gondar, Ethiopia recommend that building capacity and adequate skills to maintain water sources is an essential factor to sustain the water system. Competency is required in four domains; community organizing, problem solving, priority setting and project evaluation (Zakus and Lysack 1998). Also water management committees are important in enabling a detailed monitoring and finding solutions to various problems confronting the proper functioning of the installed water infrastructures. In the context of Kitengela, the committees are elected to manage the projects on behalf of the whole community.

Community empowerment, therefore as within Kitengela Kajiado, is more than the involvement, participation or engagement of communities. It implies community ownership and action that explicitly aims at social and political change. Capacity building involves; developing skills, knowledge and confidence through learning and training opportunities, networking and

participation in different support forums, best practices visits and exchanges, developing organizational structures, systems and mechanisms for managing projects of which such involvement and mechanisms are lacking within the community of Kitengela Kajiado which affects the community's participation (Baum, 2008).

2.4 Community Participation

Community participation is a process which communities are empowered to make their own decisions. Engaging community in its own development ensures that proposed development will better target the peoples' needs, incorporate local knowledge, create grass root capacity to undertake other projects and maintain facilities, distribute benefits equitably, and help lower costs.

To achieve effective outcomes through participation, considerable investments in time and resources by parties facilitating and engaging in the process are required. Often, pressure for delivery of outputs (in reduced costs and time), may compromise the process (community participation). Unfortunately development progress is measured, not only by developers, but by public opinion formers, by the speed in which tangible results are produced (Botes and Rensburg, 2000). Cleaver (2009) also examines water projects in Sub Saharan Africa and finds that even if communities are initially successful in creating the project, they may lack the material resources and the connections to sustain their efforts. Mosse (2011) comes to similar conclusions in an in-depth examination of tank management in South India. He finds that maintenance of community infrastructure is often crucially dependent upon external agents. Thus the need for a well-functioning state apparatus does not seem to disappear with active community involvement.

Rono and Aboud (2003) in a study of the Nandi community participation in projects recommends that policy makers, development planners and implementers should ensure that people in the community are made aware that their level of work ethic, involvement and participation is responsible for the poor performance of their community development projects.

Few studies have examined the relationship between Community Based Development/ projects and collective action capacity in KitengelaKajiado. Finsterbusch and Van Wincklin (1989) in their review of USAID projects claim, without ambiguity, that projects with participatory elements increased the overall effectiveness of projects – particularly in building the capacity for collective action.

2.5 Factors Hindering Community Participation on Sustainability

Despite the widespread recognition of the important role of community participation on sustainability of community projects, from various pronouncements, principles and declarations, efforts to enhance community participation have faced several challenges. As a result, these undertakings by governments have not translated into reality especially in the developing countries. According to the UNDP (2006), in sub-Saharan Africa, access to safe drinking water is far from being realized. This continues to exert heavy burden on communities who have to spend many hours searching for water. Further, lack of water has contributed to high food insecurity and high levels of poverty. The problem has affected their health, children's nutrition and health, education and by extension created inequality among community participants. It is

therefore, important to address the special needs of community participants because lack of water affects them differently.

In most societies, Kitengela inclusive, some communities are assumed to represent a marginalized group and they experience gross inequalities of formal power and authority in the public sphere. As such, they are denied equal access to and control of resources. In the water sector, for instance, the inequalities are perceived in terms of access to water resources and benefits from water development projects as well as exercise of decision making powers with respect to the management of these resources (Gender and Water Alliance, 2003).

When we observe with keenness a study by Khatun and Ahmad (2004) in Bangladesh in relation to our study area, Kitegela Kajiado revealed that water projects are designed with the main objective of easing the burden of those who have to collect water from unsafe and far-away sources and to uplift the livelihood patterns of the affected people.

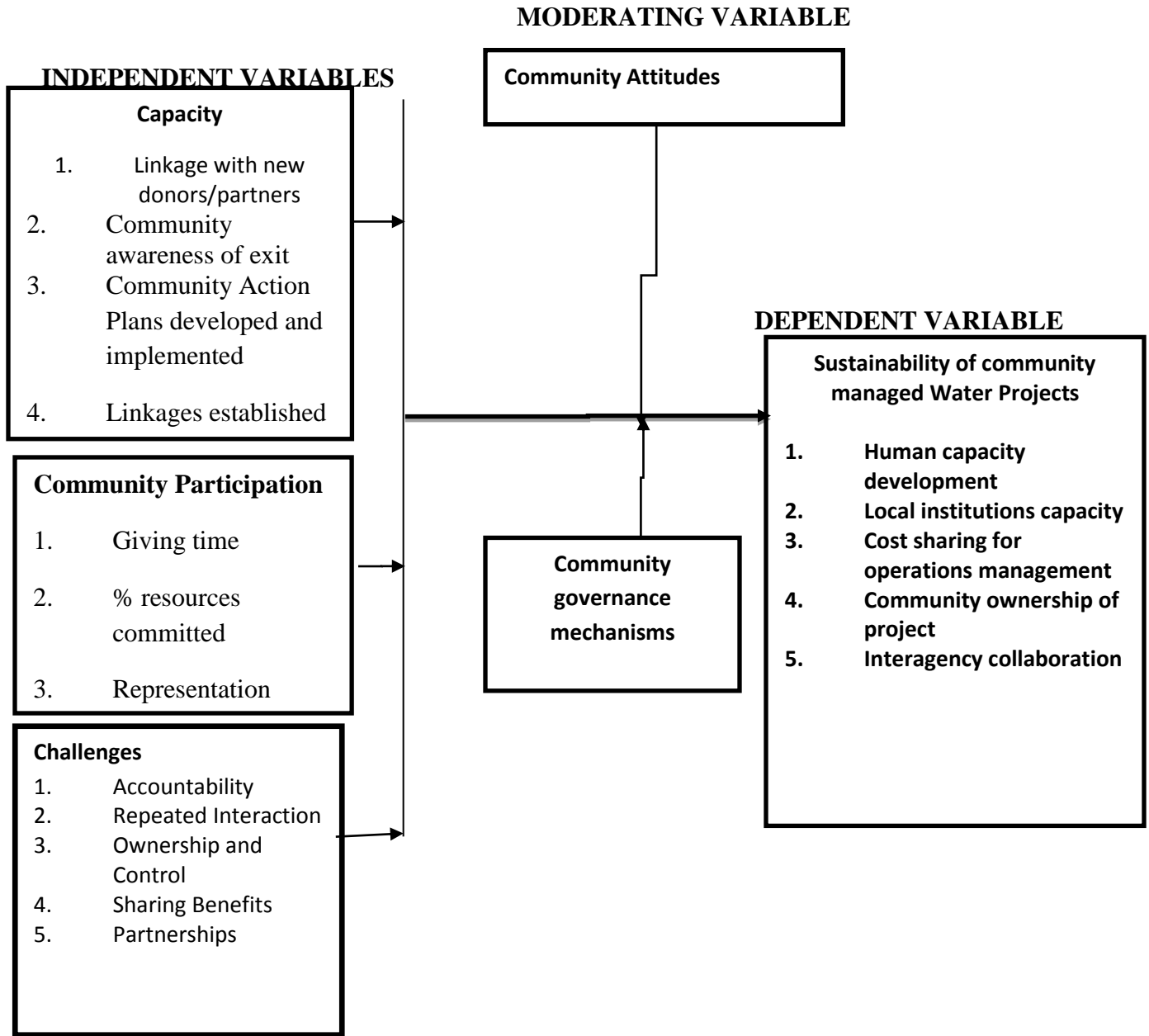
Although literature has focused more on community participation as a major social group and their relationship with the environment, it is noted that they are not a single homogenous group and that it is important to address the actual material relationships of different groups of women with nature and the environment (Agarwal, 1988 and Braidotti, 1994). Determining factors include class, caste, ethnicity, kinship, country and social-cultural affiliation. Even within one village community members of different age, classes and castes may have very different positions and roles (Davidson, 1998).

The same applies to communities living in rural and urban areas. IFAD (2006) in a study done in Ghana found that although policymakers had undertaken efforts to encourage community participation on sustainability of community projects, members seldom joined WUAs due to lack of confidence in speaking up for their rights, illiteracy, and social norms which prevent them from taking up any public role. It was further observed that whereas WUAs are required by law to establish a minimum quota of community participation, the membership is given to local elite community members who are often influential farmers and are unfamiliar with the problems faced by the poor community members (Wahaj, 2007). This situation has a significant effect on their participation on sustainability of community projects.

Introduction of boreholes in Kitengela has been initiated top-down. The local community has hardly been involved in the choice regarding a specific location, the installation, repairs and maintenance; this makes the community to feel that the water projects belong to the donors and not the users. (Marcel. M. Rutten 2005)

2.6 Conceptual Framework

The figure bellow provides a structural narrative description of the relationship between the variables forming the concept of the study on sustainability. The framework below shows the possible factors that influence sustainability of community managed water projects. The interplay of factors such as the capacity of CDC members, the levels of participation by community members and even the barriers of community participation should be considered in the sustainability of water project within the communities.



Source: Author, 2014

Figure 2.2: Conceptual Framework

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology as the mode of achieving the purpose of the study. It specifically highlights the research methods to be used in carrying out the study in an attempt to answer the research questions. In addition, various methodological issues discussed include population, sampling technique(s), sampling frame, sampling size, data collection and analysis of the methods adopted in conducting the study. It also gives the data validity and reliability statement.

3.2 Study Area

Kitengela is one of the main towns in Kajiado County of Kenya and its located 30km from Nairobi city with a human population of around 58,167 by the year 2009. The geographical coordinates of Kitengela are 1° 31' 00 South and 36° 51' 00 East. As shown on the map below

Historically the town begun as the Kitengela group ranch made up of 18292 hectares and 214 members, after subdivision of the group ranch land fragmentation and sales have continued. This has made the population to rise sharply over the last few years transforming the area into an important social and economic hub. As shown below on the aerial photograph of the Kitengela town.

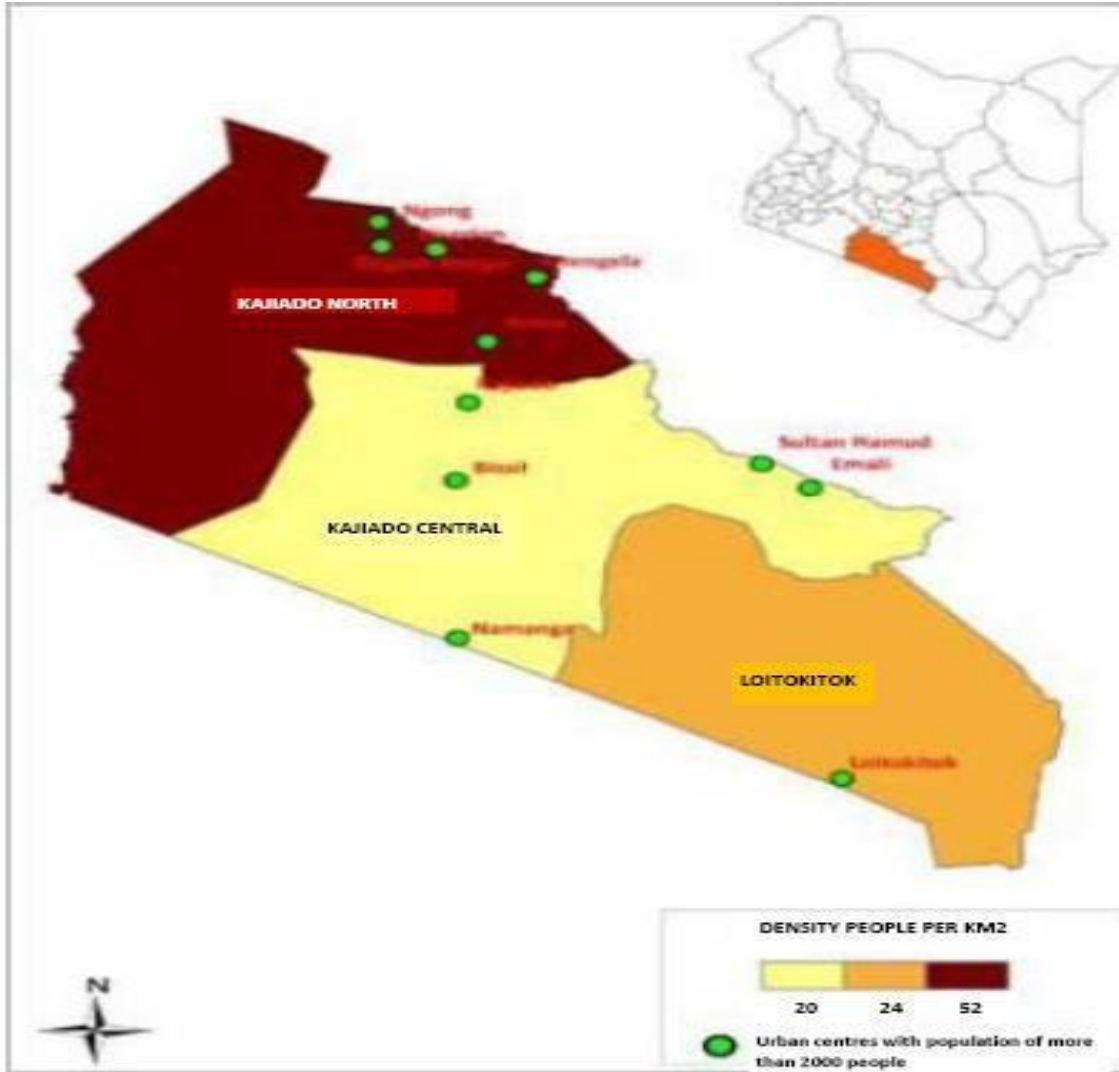


Fig. 3.1 Map of Kajiado County.

3.2.1 Demographic Profile

Kitengela is experiencing a rapid population growth due to an increased migration into the area. According to 1999 population census the town had a population of 17,347 but by 2009 census the population was at 58,167. Kitengela area has 30,088 male and 28,079 female as per 2009 National census. The town hold 23% of the total population of Kajiado County. (KNBS) 2013.

3.2.2 Socio-Economic Characteristics

The town has over time turned to a commercial, industrial and social hub of Kajiado County. It is considered as the twin “cement city” sister to Athi river town, it hosts five cement factories and steel manufacturing industries. An estimated 20,000 people from the town work in the EPZ factories. In the area, there is Kitengela Game Conservation Area that has buffalo, masai giraffe, black rhino, olive baboon, monkeys, lions, spotted hyena and gazelles. Near the town is also Maasai Ostrich farm that is a popular tourist destination. The other economic activities in the area are: flower farming, sand harvesting, quarrying, and trading in open- air markets and shops and livestock keeping.

3.3 Geology

Most of the Kitengela is a basement complex, formed in the pre Cambrian era. The gneisses, schists, quartzites, and limestones have been weathered for more than seventy million years and in some places the underlying rock formation is exposed. The area flanked by Magadi, Kajiado, and Ngong townships consists of tertiary formation. Quarternary volcanics are found in the western side of the district, the south-eastern side-.the district, and the area of the "Chyulu Hills.

Quaternary alluvial deposits occur in the southwest and in the areas around Magadi and Namanga. The soils of the alluvial deposits are rich and in general the volcanic soils have better nutrient associations and physical properties than those of the basement complex

3.4 Research Design

This study adopted a descriptive survey design. A descriptive survey design would be best for this study as it describes characteristics associated with the subject population, and in particular factors that make them behave the way they do. According to Cooper and Schindler (2007), descriptive design discovers and measures the cause and effect of relationships between variables. Mugenda and Mugenda (2007) state that a descriptive research determines and reports the way things are and attempt to describe possible behavior, attitude, values and characteristics of such things. The study used a descriptive design because it enabled the researcher to collect a large quantity of in-depth information about the population being studied. A survey design was appropriate as the data required for analysis needed to be collected from a large population.

Schindler and Cooper (2007) observe that descriptive studies are structured with clearly stated questions to be investigated. The descriptive design was selected in this study because it would allow the researcher to gather numerical and descriptive data to assess the relationship between the variables. This would make it possible for the researcher to produce statistical information on establishing the factors influencing sustainability of community managed water projects in Kitengela division of Kajiado County.

3.4.1 Target Population

Mugenda and Mugenda (1999) says that population is the entire group a researcher is interested in or the group about which the researcher wishes to draw conclusions. The target was 12000 households from Kitengela Division. Water committee members, government officials and staff of NGOs operating within the division were the key informants. The focus of the study was on establishing the influence of community participation on sustainability of community managed water projects in Kitengela division of Kajiado County. Cooper and Schindler (2007) define a population element as the subject on which the measurement is being taken and is the unit of study.

3.4.2 Sampling Size and Procedures

Sampling is a means of selecting a part of a group from a population to represent the characteristics of the entire group or the population of interest. An advantage of sampling is that it reduces the length of time needed to complete the study and cuts costs. The use of samples enabled a higher overall accuracy than a census. In addition, collecting data from fewer cases means that one can collect more detailed information (Saunders, Lewis and Thornhill, 2000).

The following formula was used to determine the sample size:

$$nf = \frac{n}{1 + \frac{n}{N}}$$

Where nf = desired sample size when the population is less than 10,000

n = the desired sample size when the population is more than 10,000

N = the estimate of the population size.

$$nf = \frac{384}{1 + \frac{384}{12,000}} = 396$$

According to Cooper and Schindler (Cooper, 2007), a sampling frame is a list of elements from which the sample is actually drawn and is closely related to the population. By adopting this approach, the researcher ensures that the sampling frame is current, complete and relevant for the attainment of the study objectives.

Table 3.1 Sampling frame

SUB-LOCATION	HOUSEHOLDS	SAMPLE SIZE	PERCENTAGE
KITENGELA	7300	241	61
NOONKOPIR	4700	155	39
TOTAL	12000	396	100

The study adopted both probability and non-probability sampling techniques. Stratified random sampling increases a sample's statistical efficiency and provides adequate data for analyzing the various sub-populations. This method provides a more representative sample than strictly random sampling does. The study therefore adopted stratified sampling whereby I partitioned the population into non-overlapping groups, called strata and I selected a sample by some design within each stratum. I also employed a probability sampling technique where by the samples I gathered in a process that gives all the individuals in the population equal chances of being selected, to ensure that different and diverse types of entities were included in the survey.

3.4.3 Data collection methods

The information presented in the study was obtained through primary data and secondary data collection methods

(i) Physical Observation

Observation was an important tool in discovering complex interactions in natural social settings. Observation eliminates bias while information obtained relates to what is currently happening and it is independent of respondents' willingness to respond (Kothari, 2004). Direct observation was used to acquire information on location of water project and the day to day operations of the project. Photographs were taken to provide record of the observed phenomena.

(ii) Questionnaires

The questionnaire adopted structured open ended as well as closed questions. The responses in the questionnaires helped in gaining an in-depth understanding of the influence of community participation on sustainability of community water projects in Kitengela division of Kajiado County. The questionnaire was structured based on the research questions. The questionnaire was divided into two parts. The first part was on personal information and the second part was on issues relating to the study.

The type of the questions that were asked were both closed and open ended. The advantage of this type of questions is the simplicity in giving answers.

(iii) Key Informant Interviews

Key Informant Interviews (KIIs) were used to collect data from the key informants. This included, the County Water Officer based in Kajiado town, the sub-county water officer in

charge of Isinya Township and Kitengela town, water management committee officials and a Project Officer of an NGO (MajiMilele) operating within the area. The researcher had predetermined questions grouped together to address particular objectives of the study. Majority of the questions are unstructured, so as to enable the researcher gather as much information as possible in regards to the influence of community participation on sustainability of community water projects in Kitengela division of Kajiado County. Using interview method of data collection is to ensure that the questions are understood and thus minimize the risk of collecting incomplete and wrong information as it is with questionnaires particularly when people are unable to understand the questions properly.

3.4.4 Secondary Data

The secondary data was derived from various books and journal publications to establish what other scholars have done on the same.

3.4.5 Validity of Research Instrument

According to Kothari (Kothari, 2010), validity is the degree to which an instrument measures what it is supposed to measure. Therefore, the term refers to the extent to which an instrument asks the right questions in terms of accuracy. The content validity of the research instrument for this study was determined through piloting, where the responses of the subjects were checked against the research objectives. For a research instrument to be considered valid, the content selected and included in the questionnaire must be relevant to the variable being investigated. The researcher performed the pilot test with a randomly selected sample of ten beneficiaries who were not included in the final study. Content validity of the instrument was also tested using the

researcher's expert opinion, who is the research supervisor. The research expert independently judged the validity of the items in the questionnaire in relation to research objectives.

3.4.6 Reliability of Research Instrument

Reliability of an instrument is the measure of the degree to which a research instrument yields consistent results or data after repeated trials. To test the reliability of the questionnaire as a research instrument, the test-retest technique was used. This established the extent to which the questionnaire elicits the same responses every time it is administered.

3.4.7 Data Collection Procedure

Data collection procedures began upon the approval of the proposal after its defense. An introduction letter was issued to the sampled entities for consent to collect data from the respondents. The researcher then issued the questionnaires scripts with interview questions to the respondents at a time that was convenient to the respondents. The questionnaires were administered to the respondents directly by the researcher because most households in the study area are in close proximity to each other. The interviews were conducted by the researcher at a time and place convenient to the respondents to provide an environment in which the respondents felt free to participate. The Key informants of the interview were government water officers in the area, water management committee officials and a Maji Milele (NGO) representative.

3.5 Data Analysis

The data was analyzed according to variables and objectives of the study. Moreover, quantitative data was analyzed through the use of descriptive statistics whereby measures of central tendency for example mean, mode, median and measures of normal distribution of the

responses was established and the results then presented in form of tables and charts. The output of the analysis was presented. The Statistical Package for Social Sciences (SPSS) was used to aid in the statistical analysis of the data.

Quantitative and qualitative approach was used in data analysis. Quantitative approach was used to analyze the structured questions. The questionnaires were checked for consistency, cleaned, and the useful ones coded and analyzed using the Statistical Packages for Social Scientists (SPSS) computer software as a tool. Qualitative approach was used to the unstructured questions then summarized to capture common themes.

The results were presented in terms of tables, graph and charts for easier understanding and interpretation. Descriptive statistics which was used include frequencies, measures of central tendencies and dispersion to summarize the data. Inferential statistics allows one to draw conclusion about the unknown parameter of population based on statistics which describes a sample from target population. Measurement for each variable was done by having a simple regression for each variable. This indicates the variance shared by the independent variable and the dependent variable.

3.6 Ethical Issues

Before the actual study, permission was sought from the relevant authority that is the local administration and the officials of the water project. Objectives of the research was explained and made known to the respondents so as to solicit their informed consent. High level of confidentiality on the information provided by respondents through interview or questionnaires was maintained.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter contains the data analysis, presentation and its interpretation on the influence of community participation on sustainability of water projects within the locality of Kitengela Division of Kajiado County. The study was guided by the three objectives which are; the capacity of water management committees in Kitengela Division, Kajiado County, and the level of community participation on sustainability of community managed water projects in Kitengela division, Kajiado County and lastly factors hindering community participation in community managed water projects in Kitengela division, Kajiado County. The results that were produced using the quantitative and qualitative research methods are presented for analysis and interpretation. The data was collected from sampled from the public of Kitengela Division, Kajiado County. In total the target was 396 but the study managed 350 respondents. The data from the field after collection, was coded and analyzed using the SPSS data software.

The study covered the study area of Kitengela Division, Kajiado County in the months of April, May and June. The response rate from the respondents was encouraging and those who needed help to answer the questions were assisted.

4.2 Response Rate

The study targeted a sample size of 396 households in Kitengela division from which 350 filled in the questionnaires making a response rate of 88.38%. This response rate was satisfactory to make conclusions for the study. Weisberg *et al* (1996) recommended a response rate of 70%. According to Mugenda and Mugenda (2003), a response rate of 50 percent is adequate for

analysis and reporting; a rate of 60 percent is good and a response rate of 70 percent and over is excellent. Based on the assertion, the response rate was considered to be excellent. In Noonkopir, the number of respondents who participated in the study were 123 out of the total of 155. This represented 79.3% of the respondents in the area. In Kitengela subdivision, a total of 241 participants were asked to take part in the study and 227 of them were active. This was 94.1% of the respondents in the area. In total, 350 out of 396 respondents took part actively in the study. This represented 88.3% of the total respondents. The table 4.1 below shows a summary of the respondents and the percentages for the two subdivisions.

Table 4.1 The Response Rate

KITENGELA DIVISION	TARGET RESPONDENTS	ACTUAL RESPONDENTS	PERCENTAGE
Noonkopir	155	123	79.3%
Kitengela	241	227	94.1%
Total	396	350	88.3%

4.3 Demographic Information

4.3.1 Respondents Gender

The study found it paramount to determine the respondents' gender in order to ascertain whether there was gender parity in the positions indicated by the respondents. The findings of the study are as shown in figure 4.3.

It was evident that majority of the respondents were female which represented 52.86% of the households while 47.14% were male. .It can therefore be deduced that females were the most dominant gender from the response of the respondents.

Table 4.2: Gender of the respondents

	Percentage
Male	47.14%
Female	52.86%
Total	100.00%

Source: Author, (2015)

The disparity in the gender of the respondents 5.72% was negligible and could not create any gender bias in the study. The women from the population in the area are more involved than men. It is important to understand the gender percentages because the community participation involves the entire community. Mbugua *et al*, (1993) affirms that under normal circumstances women are the main stakeholders in water projects and are victimized whenever water shortages occurs in their areas of residence. The table in conclusion shows women are the most knowledgeable group concerning water use and sources.

4.3.2 Age bracket of the respondents

The study sought to establish the age of the respondents. The findings from the analysis of the questionnaires are represented in the table 4.3 as shown.

Table 4.3 Age brackets of the respondents

	Percentage
Below 20 years of age	2.29
21-35 years	48.00
36-50 years	38.86
51-70 years	9.71
Over 70 years	1.14

The respondents were required to indicate their age where the study findings indicated that majority (48.00%) indicated that their age bracket was between 21-35 years while 38.86% of the respondents were aged between 36 to 50 years. Analysis of findings also indicated that 9.71% of the respondents were between 51 and 70 years of age. The findings further showed that 9.71% were aged between 51 and 70 years old. 2.29% of the respondents indicated that they were aged below 20 years of age while the least frequency was of respondents who indicated that they were aged over 70 years of age. From these findings therefore it can be inferred that the respondents were old enough to provide valuable information pertaining to the influence of community participation on sustainability of community water projects.

4.3.3: Level of Education

The study also sought to determine the level of education of the respondents. The findings from the analysis of the questionnaires are represented in the figure 4.4 as shown.

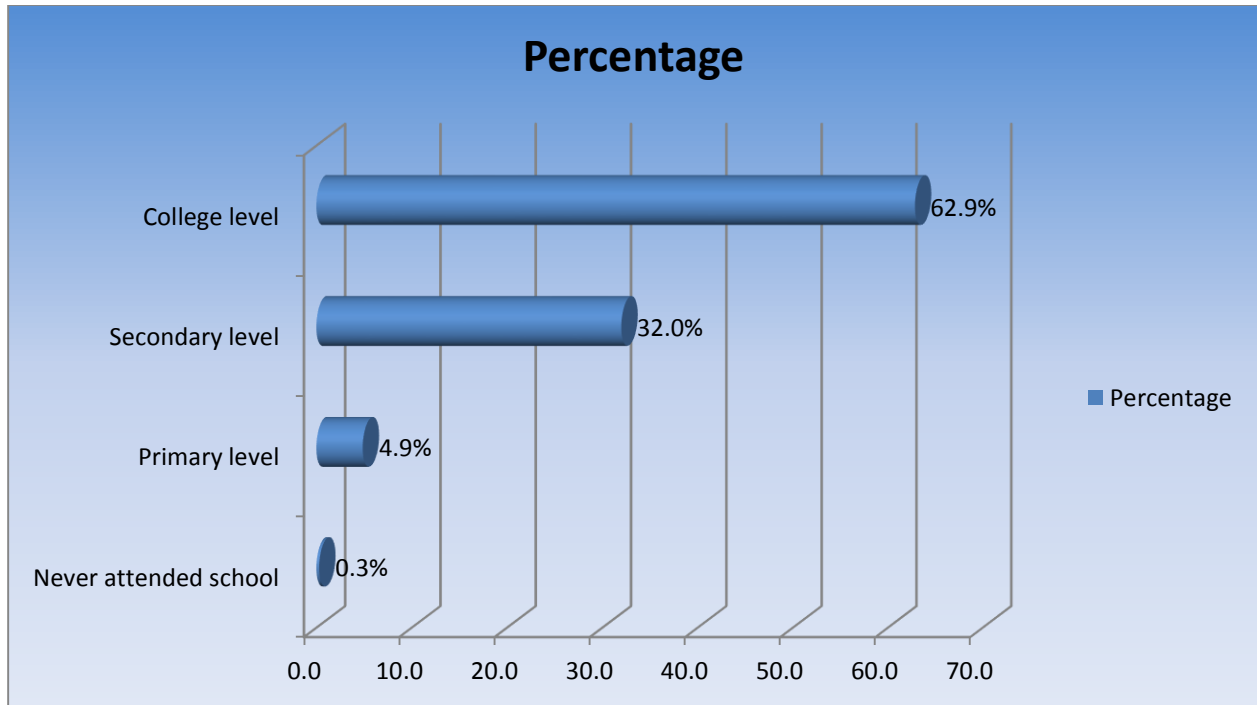


Figure 4.1: Respondent level of education

The study requested the respondent to indicate their highest level of education. From the findings it was established that 62.9% of the respondent indicated their highest level of education as the college level, 32.0% of the respondent indicated their highest level as the secondary level, 4.9% of the respondents indicated their highest level of education as primary level, while only 0.3% of the respondents stated that they had never attended school at all. This is an indication that most of the respondents focused in this study had college level education as their highest level of education and therefore had the knowledge to fully evaluate the influence of community participation on sustainability of community water projects in a case study of PCEA water project in Kitengela division of Kajiado division of Kajiado County. In addition, it may also be significant in determining how the water management committees may use the skills of some community members to encourage sustainability in the projects.

4.4 Capacity of Water Management Committee

The water committees are important in strengthening and sustaining established water structures and service, it is therefore a representative body of the community regarding development projects.

The water management committee was composed of CDC officials, CDC sub-committee officials and CDC members. From the study, the capacity of the water management committee was measured in terms of linkage with new donors/partners, Community awareness of exit, Community Action Plans (CAPs) developed and implemented, linkages established after donor exits project. The tables below show the responses on the capacity of water management committee's ability to call for meetings.

Table 4.4 CDC organize community meetings

	Percent
Yes	72
No	28
Total	100.0

From table 4.4.1 above 28% of the CDC members said they have not been calling for meetings while 72% said they have been calling for meetings. The results on whether CDC was able to develop CAPs after project exit was recorded in table 4.4.2 below for interpretation purposes.

Table 4.5 Develop CAPs after donor exit

	Percent
Yes	85
No	15
Total	100.0

The study above indicates that 85% of the respondents agreed while 15% disagreed that CDC able to develop CAPs after project exit. Responses on whether CAPs were developed and implemented were recorded in table 4.43 below for interpretation purposes.

Table 4.6 CAPs developed and implemented.

	Percent
None	31
Less than 5	27
5- 10	22
10 and above	19
Total	100

The study above shows that 31% said none of CAPs so far developed was the CDC able to successfully implement, on the other hand, 27% were for Less than 5, 22% were for 5- 10 while 19% were 10 and above.

4.4.1 Linkage with new donors/partners

In order to address the first objective, the study investigated the ability of water committee to get new donor or partners such as NGO's working in the area. Respondents were to rate their linkage with new donors using: poor, fair, good and excellent. The results were as shown in the table 4.4.4 below

Table 4.7 Linkage with new donors/partners

	Percent
Poor	26
Fair	45
Good	18
Excellent	11
Total	100.0

The results shows that 26% of the respondents agreed that the CDC was able to link with new donors, 45% were for the idea that it was fair while 18% said it was good and 11% said it was excellent.

The water management committee did not take sufficient initiative to make contact with new and potential donors after the exit of the previous ones. Hadimoeljono (2006) notes that the committees are coordination bodies those are in charge of planning, implementation, sourcing for funds, controlling and supervising projects. The water management committees failed in the sourcing of funding, planning and controlling of the projects.

Water management committees are responsible in the formation and implementation of Community Action Plans (CAPs) in liaison with community members. The tables above show that the performance of the water management committees in forming CAPs was fair. Table 4.15 above indicates that 85% of the respondents agreed that the CAPs were formulated. However, the implementation of the CAPs was extremely dismal. From table 4.4.3, approximately 31% of the respondents said that there was no implementation of the CAPs developed by the CDC. Another 27% noted that the implementation of the CAPs was rated less than five out of a maximum score of ten.

The data in table 4.14 shows that the water management committees arranged meetings on a monthly, quarterly, semi-annually and yearly basis. 20% of the respondents indicated that meetings with the community were held monthly and a further 30% indicated that the meetings were held quarterly. However one beneficiary was quoted complaining that, “Meetings are rarely held because the water management committee does not want to be questioned; they keep on postponing the meetings.”

This shows that the water management committees were making little efforts to involve the community of Kitengela. Hadimoeljono (2006) notes that for water management committees and related bodies to be effective, they have to exchange information, share experiences, build capacity and share knowledge with the community. The capacity of the water management committees improves through training and workshops.

Plate 4.1 Community training for a WMC project in Kitengela



Source: Author.

The figure above shows members of a water management committee at seminar training in Kitengela.

4.5 Level of community participation

Involving the community in different phases of the project is widely accepted by different stakeholders including NGO'S and Governments. The study sought to find out the level of community participation in terms of involvement of the community (at conception and design levels, implementation, monitoring and evaluation), the amount of time the community members devote to project activities and the resources (labor, cash or kind) that they commit to the project.

4.5.1 Conception and design of the project

The researcher asked whether the community members participate in the conception and design of water projects by either indicating 'yes' or 'no'. One of the most crucial principles in sustainability of water projects is that the local community must be involved in conception and design of the project. The respondents revealed that people participate through meetings which are organized by the water committee or village elders, the results are indicated in the table 4.5.1

Table 4.8 Conception and design of the project

	Percent
Yes	25
No	75
Total	100.0

The study above shows that 25% of the respondents said that they take part in conception and design while 75% said that they do not participate in the conception and design of the project.

This finding indicates that the community has very little involvement in the conception and design of the project, hence the reason why most projects become nonfunctional within a short time. The projects are mainly designed and conceptualized with minimal participation making the community unconcerned about the success of the projects. The community may feel the projects are just imposed on them without checking on the current needs of the community.

In studies carried out by Habtamu(2012) in Amhara region of Ethiopia in, it was found out that in the non-functional water supply systems, government had a big role in selecting the site of the project while the functional water systems , the government had smaller role.



Source; Authour

Plate 4.2 Water pump in Kitengela



Source: Author

Plate 4.3 Private water project commonly referred to as ‘Kwa Bishop’ in Kitengela



Source: Author Plate 4.4 PCEA water project in Kitengela

A study by Boakye and Akpor (2012) on community participation in water resources management in South Africa has shown that communities are a critical component in the success of water projects. There are many challenges in reaching meaningful levels of community participation in water management projects. In comparison with the data, the study by Boakye and Akpor (2012) communities did not find their participation meaningful because their expectations were not met in the projects. Boakye and Akpor (2012) also noted that over reliance on community organizations kept out the population from participation since there was minimal interaction between the two. Similarly in Kitengela, the donors and sponsors did not interact with the community and this locked them out of the project monitoring and management. Jansky *et al*, (2005) noted that understanding of the community and their needs would greatly improve community participation for water projects around the world.

4.5. Implementation of the Project

Table 4.9 Implementation of the Project

	Percent
Yes	47
No	53
Total	100.0

The study in table 4.9 above indicates that 47% of the community members take part when projects are implemented while 53% disagreed that members of the community participate in the implementation of the Project. From the study above it shows that members of the community were not participating fully in the implementation of the Project as supported by 53% of the respondents.

The International Journal Of Current Research and Academic Review 2013;1(2) revealed that implementation stage is where majority of community members participate. It is done through provision of unskilled labor, contribution of cash to pay workers and participation various training programmes. In some cases, this form of participation has exhibited some traits of ‘coercion’ because community leaders impose some sanctions and penalties to community members who do not contribute voluntarily.

4.5.3 Participate in monitoring and evaluation of the project

Table 4.9.1 Participate in monitoring and evaluation of the project

	Percent
Yes	71
No	29
Total	100.0

The study shows that 71% agreed while 29% disagreed that community members participate in monitoring and evaluation of the project. The researcher further sought to establish the level community participation in monitoring and evaluation of projects as supported in table 4.10 below for interpretation purposes.

Table 4.9.2 Level of community participation in monitoring and evaluation

	Percent
Yes	32
No	68
Total	100.0

The study above shows that only 32% of the community members take part in monitoring and evaluation while 68% do not. These figures show that the community is not sufficiently involved in monitoring and evaluation of the water projects. Most of the participants noted that the level of community participation was poor. This showed that there is a need to take measures to improve on the level of community participation in the water projects.

From the deduction above that the Level of community participation in monitoring and evaluation was poor and does not give enough space for local community to play an active role as supported by 34% of the respondents. These findings were in line with (King and Stevahn, 2013) who posits that despite all the benefits of joint assessment and joint monitoring and evaluation on community projects, they are politically and logistically complex. At the heart of the problem are the isolated silos of decision making among local communities, district educational facility planning, and the planning work of other agencies such as cities, counties, and redevelopment agencies. It is extremely rare for a locality to have an institutional framework and a system of policies and procedures in place that allows these multiple entities to work together in the ways necessary to realize effective joint use.

4.5.6 Contributions in kind or cash for implementation of projects

Developing a sustainable water project requires adequate financial resources. Although the Government and other donors can provide support when possible, the communities are encouraged to demonstrate efforts in sustaining their water schemes (URT) 2002. In the context of Kitengela, the community was required to contribute an amount of three hundred and fifty shillings to the water project; this line of contribution was to be done in cash. The respondents were to ask to simply say ‘yes’ or ‘no’. The outcome is shown in the table below;

Table 4.9.3 Contributions in cash for implementation of projects

	Percent
Yes	35
No	65
Total	100.0

The study indicates that 35% contributed while 65% did not contribute the cash for implementation of projects. The reasons why some community members did not contribute as one member said, “Fetching water is free because it is a gift from the Government or Non-Governmental organization.”

This shows that some community members lack awareness in terms of sustaining water projects.

4.5.5 Time devoted to project activities per week

The study sought to know how much of the community member’s time was actually spent on sanitation activities per week in the water project. The results are shown in the table below.

Table 4.9.4 Time devoted to project activities per week

	Percent
15 and above hours	7
10-14 hours	8
5-9 hours	16
Less than 5 hours	51
None	18
Total	100.0

The study above shows that 7% devoted 15 and above hours for the project per week, 8% devoted 10-14 hours, 16% devoted 5-9 hours, 51% devoted less than 5 hours while 18% devoted none.

It is therefore clear from the study that majority of the respondents devoted less than 5 hours as supported by 51% of the respondent.

4.6 Factors Hindering Community Participation on Sustainability

Donor funded water projects in Kitengela Division, Kajiado County Government recognize the important role communities can play in sustainability of the projects development and efforts are being made to allow them to become more involved in the policy-making process. However, despite these efforts, there are still many barriers and challenges that can stand in the way of community involvement. Understanding and anticipating these barriers and challenges is

important when a community is getting organized for or involved in water service development. This study outlines some of the more common challenges as perceived by community members.

Most participants interviewed in the research area (89%) said that they had experienced challenges during their participation in the projects activities and these influenced the sustainability of the projects.

Table 4.9.5 Factors Hindering Community Participation On Sustainability

Challenge	percentage
Lack of accountability and transparency among leaders especially on funds contributed towards development projects	81
Sharing benefits: poor community leadership where there is no feedback to community members	71
Partnerships: strict and non-flexible donor agencies policies especially on funding procedures	53
Ownership and control: lack of information and ignorance	56
Frequent and prolonged droughts in the area causing household food insecurity	62

4.6.1 Lack of accountability and transparency

The study established that the water project faces the challenge of accountability and transparency in their management. Community participation is increasingly recognized as an essential component of good governance practice. Accountability is a fundamental value in water

management. The study shows that lack of accountability and transparency on funds contributed towards development projects among leaders is at 81%.

Lack of accountability and transparency affects the community contribution towards the development of the water. Sahu, (2010) observes that lack of accountability and transparency results in poor service delivery and inequitable distribution.

4.6.2 Poor Community Leadership

During the sharing of benefits 71% of the community claim that they do not get any feedback regarding profits and general community development. Mimrose *et al* (2011) agrees that the water schemes with the lowest sustainability score has weak CBO where office bearers have neglected their responsibilities. In such cases the community generally does not meet to discuss the problems of the water scheme.

4.6.3 Drought

The study revealed that 83% of the participants reported that the encroaching of dryness of the area is also a challenge which makes them spend most of their time searching for food security thus have little time to participate in development projects due to their low income. Prolonged dryness leads to acute water shortages in the area.



Source: Authour

Figure 4.5: Dried water pan in Kitengela

4.6.4 Levels of poverty

The study revealed that 62% of the community members felt that poverty prevents them from participating in water project. This is because they fear that involvement in the water project will demand contribution either in cash or other resources.

4.6.5 Strict and non-flexible donor agencies

From the study, 71% said that the donor agencies use different approaches when involving the community. Most of the respondents felt that the procedures used in funding were strict and failed to accommodate their needs in terms of proposals. Ephrahim (2013) in his study comes up with a similar finding where community members explained that the financial and budgeting procedures used by donor agencies were not flexible.

4.6.6 Inadequate community Participation

For Kitengela community, the involvement in the project was minimal and this led to abandonment of the water project. In another research by Kariuki and Mbwisa (2014) indicated that information about the water projects in some parts of Kenya are crippled by lack of information by the community. In addition, the high poverty level makes it difficult for the communities to participate in funding the projects that makes it difficult for the community to engage in the entire project cycle.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is a synthesis of the entire study, and contains summary of research findings, exposition of the findings, commensurate with the objectives, conclusions and recommendations based thereon.

The purpose of this study was to assess the influence of community participation on sustainability of community water projects: A case study of PCEA water project in Kitengela Division of Kajiado County. The objectives of the study included: To establish the capacity of water management committees in Kitengela Division, Kajiado County, to assess the level of community participation on sustainability of community managed water projects in Kitengela Division, Kajiado County, and to examine the factors hindering community participation in community water projects in Kitengela Division, Kajiado County.

Accordingly, research questions were formulated in line with the research objectives, which the researcher set out to look for answers. With a sample size of 350 respondents, selected using stratified sampling technique, the researcher used questionnaires to gather information related to the study. The study findings were analyzed, presented and interpreted. This chapter therefore presents discussions of the study findings, conclusion and recommendations on important issues that arose from the study and finally recommends areas for further research work.

5.2: Summary of Findings

The study targeted a sample size of 396 households in Kitengela Division from which 350 filled in the questionnaires making a response rate of 88.38%. This response rate was satisfactory to make conclusions for the study. According to the analysis it was evident that majority of the respondents were female which represented 52.86% of the households while 47.14% were male.

From the findings majority of the respondents were aged between 21 to 50 years which inferred that the respondents were old enough to provide valuable information pertaining to the influence of community participation on sustainability of community water projects. It was established also that most of the respondents (53.7%) indicated that they were married. The study noted that most of the respondents focused in the study had college level education as their highest level of education and therefore had the knowledge to fully evaluate the influence of community participation on sustainability of community water projects in a case study of PCEA water project in Kitengela Division of Kajiado County.

The capacity of water management committees was measured by the level of expertise the committees offered to the community water projects. That is, capacity of established water management committees contributed on average 54.50% of sustainable community water projects. On average community participation contributed to 66.24% of sustainable community water projects. The findings on the capacity of the water management committees showed that there was a need for more action to improve the current situation. The data in chapter four indicated that committees failed to take sufficient efforts to link to new donors and partners in

the construction of new projects and maintenance of the existing projects. This linking was one of the major causes for the failure of the water projects.

Furthermore, the community was not aware of the exit of donors after the construction of the projects. The people had minimal involvement in the projects and after the donors exited, it was difficult for the water management committees to maintain the projects without community support. The water management committees and the CDC are fair in preparation of CAPs. Nevertheless, the implementation of the CAPs is extremely ineffective and some plans are not implemented at all. The challenges of implementation can be attributed to the low capacity of the water management committee members. One way to improve the capacity of the committee members is through training and seminars. Meeting between the water management committees and the community are fairly distributed from monthly meetings to annual meetings.

The level of participation of the community members is greatly affected by low financial contributions towards the project, minimal involvement in the monitoring and evaluation and little part in the decision-making process. The main challenges hindering community participation in Kitengela are lack of accountability and transparency, poor community leadership and strict and inflexible donor policies. Besides, ownership and control issues due to ignorance and prolonged drought have adversely affected the participation of the community in the projects.

5.3: Conclusion

In investigating capacity building for the water management committees to ensure sustainability, the study established that, the policy used should be adapted to suit the needs of the people and to include monitoring and evaluation. The community should be empowered with technical, financial and managerial skills to enable them to own and manage their water project.

The study indicates partial involvement of the community. It is involved in the initial stages but in subsequent ones they were not consulted resulting into finished projects which were not accessible to them. For example the decision on the site of the project is made by the local leaders without consulting the targeted beneficiaries especially women, from findings that the community was not mobilized enough.

Sustainability was inadequately addressed during the initial stages of project identification. For a water project to be sustainable, sense of ownership must be instilled, participation must be promoted and even sharing costs must be addressed. Also the community participation in public meetings, contribution in form of labor, cash or in kind was ineffective.

The study also revealed that lack of information, lack of capable local organization/leadership and lack of resources are some of the challenges facing community participation. Also the issue of donor agencies being strict and non-flexible to accommodate community proposals is leading to low participation in the community. The residents feel there is lack of access to information about government and NGO's programs and services.

5.4: Recommendations

For the capacity of water management committees, proper training and technical support at all levels and for all groups engaged in water project implementation and management should be given priority. Even the water attendants should be given basic technical training to help in minor repairs in case of breakdowns. Exposure visits can also give the committees an opportunity to visit other community that has similar challenges and gives an insight of how this community solves their problems. The main objective is to exchange experiences on management issues and to get new ideas. Similarly, there should be networking activities such as attending meetings from other CBO's and NGO's. Committees should also strive to link with other external stakeholders.

The community should be involved or mobilized so as to build interest in sustaining the initiated water projects. This should be done at the initial stages and they should always be briefed about cost sharing in water projects to avoid the community treating the water project as belonging to the government. The low-to-average project sustainability in Kitengela is due to poor community involvement and participation in project conception, implementation and operation. Frequent monitoring and support from relevant institutions like NGO's is important and highly recommended so as to guarantee project sustainability.

Officials at all levels must be accountable and communicate to the community members on what is happening by guiding them towards full participation in projects meant for their welfare. The local government and other development agencies should provide the local communities with a voice and a means to hear the concerns of the community.

Lack of accountability and transparency in water committees, government agencies lead to lack of trust by community members but the willingness to share costs increases when communities have control over how funds are spent. Water projects will remain more sustainable when the beneficiaries are involved right from the beginning. When the people are actively involved in projects, they see it as their property and as such guard it jealously. Communities should be involved right from the onset in water and other projects meant to solve the problems of the communities. Based on the findings, it is recommended that: The level of participation of community members in project should be increased so as to attain high level of sustainability of such projects. The communities should continue with their methods of organization, but should put more emphasis on regular conference and institution of sanction/reward to encourage citizens to participate in development projects. The citizens of the community should be involved in projects, whether water or not as this will enhance their perception on such projects positively.

5.5 Suggestions for further studies

This study focused on the influence of community participation on sustainability of community water projects in a case study of PCEA water projects in Kitengela Division of Kajiado County.

Further studies should be made on the effects of community participation in sustainability of community water projects in other parts of the ASAL areas.

Studies should also be carried out to establish the influence of community participation on sustainability of donor-funded urban water projects.

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Appendix I : Questionnaire for members of the various Community groups.

Introductory Remarks

The findings and recommendations of the study will contribute to the knowledge base in the community development projects in the light of devolved governance and resources in Kenya. Therefore, I would like to collect data that will assist in accomplishing the objectives of this study. Kindly answer the questions by ticking and/or explaining. Your contribution will be highly appreciated and the information provided will be treated with utmost confidentiality. Kindly answer the questions in this questionnaire.

A. Demographic Characteristics

1. Please indicate your gender M [] F []

2. Please indicate your age group

Below 20 years []

21-35 years []

36-50 years []

51-70 year []

Over 71 years []

3. What is your marital status?

Married []

Single []

Divorced []

Others (specify).....

4. Please indicate the highest level of education attained?

Never attended school []

Primary level []

Secondary level []

College level []

B. Community Participation

5. Indicate your position in the community?

- i) CDC official []
- ii) CDC sub-committee official []
- iii) CDC member []
- iv) Community Member []

6. Please indicate investments/ projects funded by in your community?

- i) Restocking []
- ii) Farming []
- iii) Income Generating Activity (IGA) []
- iv) Water project []
- v) Education project []
- vi) Any other (specify).....

7. Did the members of the community participate in the conception and design of the project(s)?

- i) Yes []
- ii) No []

8. If yes, what is your assessment of the level of their participation in the conception and design of the projects?

- i) Poor []
- ii) Fair []
- iii) Good []
- iv) Excellent []

9. Did the members of the community participate in the implementation of the Project?

i) Yes []

ii) No []

10. If yes, what is your assessment of the level of their participation in the implementation of the project?

i) Poor []

ii)Fair []

iii) Good []

iv) Excellent []

11. In your opinion, do you feel that your contributions influenced decisions made during conception, design and implementation of project(s)?

i)Yes []

ii) No []

12. Did community members participate in monitoring and evaluation of the project?

i) Yes []

ii) No []

13. In your opinion, what was the level community participation in monitoring and evaluation of projects?

i) Poor []

ii) Fair []

iii) Good []

iv) Excellent []

14. Did community members make contributions in kind or cash for implementation of projects?

i) Yes []

ii) No []

15. If yes, what percentage of the project?

i) Below 10% []

- ii) 10% []
- iii) 20-30% []
- iv) Above 30% []

15. What is your assessment of representation of disadvantaged groups (Women, youth, people with disability) in the membership of CDCs?

- i) Unsatisfactory []
- ii) Satisfactory []
- iii) Very satisfactory []

16. How much time do you devote to project activities per week?

- i) 15 and above hours []
- ii) 10-14 hours []
- iii) 5-9 hours []
- iv) Less than 5 hours []
- v) None []

C. Capacity of water management committees ?

17. Is your CDC still functional after exit?

- i) Yes []
- ii) No []

18. How regular does the committee organize community meetings?

- i) Every month []
- ii) Quarterly []
- iii) Semi-annually []
- iv) Annually []

v) Never []

18. Was the Committee able to develop CAPs after project exit?

i) Yes []

ii) No []

19. If Yes, how many?

i) Less than 5 []

ii) 5-10 []

iii) 10 and above []

20. How many of the CAPs so far developed was the Committee able to successfully implement?

i) None []

ii) Less than 5 []

iii) 5- 10 []

iv) 10 and above []

21. In your own assessment, how do you rate the CDC development and implementation of CAPs?

i) Poor []

ii) Fair []

iii) Good []

iv) Excellent []

22. Was the CDC able to mobilize resources after phase out?

i) Yes []

ii) No []

23. What percentage of the resources obtained was external?

- i) Less than 30%
- ii) 50% and below
- iii) 50-100 %

24. After exit was the CDC able to connect to other partners/ donors?

- i) Yes
- ii) No

25. If yes, how many can you recall?

- i) 1-5
- ii) 5-10
- iii) 10 and above

D. Project design

26. During exit, were you as a community linked to other local partners or donors?

- i) Yes
- ii) No

27. If yes, which among the following?

- i) CBO
- ii) FBO
- iii) Local authority agency
- iv) Local NGO
- v) Government ministry

28. Is the CDC registered with the government?

- i) Yes
- ii) No

29. Please indicate the registration status?

i) Self-help group []

ii) CBO []

iii) NGO []

30. Before exit, at what stage was this community?

i) Focal []

ii) Basic []

iii) Extended []

31. Were you aware that support will end at a point in time?

i) Yes []

ii) No []

28. If yes, at what stage of the project?

i) During community entry []

ii) Mid way []

iii) Towards exit []

32. Did contribution reduce as it approached exit?

i) Yes []

ii) No []

33. If you can recall, how much was the initial and final contributions received by this community?

i) Initial Contribution (Kshs.)-[]

ii) Final Contribution (Kshs.)-[]

34. Were the community projects subjected to an evaluation exercise after exit?

i) Yes []

ii) No

35. In your own opinion how do you rate community capacity built ?

i) Below average

ii) Average

iii) Above average

iv) Excellent

36. If you can recall, who was handed over community investments before it exited?

i) CDC

ii) Community group

iii) Government ministry

iv) CBO

v) NGO

THANK YOU

Appendix II: Key Informant Interview guide
Introductory Remarks

The findings and recommendations of the study will contribute to the knowledge base in management of Community development projects in the light of the current devolved system of governance and resources in Kenya. Therefore, I would like to collect data that will assist in accomplishing the objectives of this study. Kindly answer the questions by ticking and/or explaining. Your contribution will be highly appreciated and the information provided will be treated with utmost confidentiality. Kindly answer the questions in this questionnaire.

A. Respondent’s details

1. Position of respondent _____

B. Community participation

1. Indicate the approach employed by in design and implementation of projects?

Top-down approach []

Bottom up approach []

Mixed mode approach []

2. If you can recall, to what extent did community members participate in the conception, design and implementation of projects?

Fully []

Partially []

Passively []

Not at all []

3. Comment how contributions of community members influence decisions making during conception, design and implementation of projects?

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

4. Please indicate if there was a community feedback framework for projects?

Yes []

No []

5. In your own opinion, what is the level of representation (women/youth/ people with disability) in the membership of community structures for management of projects?

Poor []

Fair []

Good []

Excellent []

C. capacity of established community committees (CDCs)

6. Indicate the span of time your organization has worked with communities in Kitengela division?

Over 10 years []

5-10 years []

Below five years []

7. Were you able to interact with any communities?

Yes []

No []

8. If yes, please comment on the nature of community in relation to articulation of their development agenda,

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

9. Were there functional community committees at your time of entry?

Yes []

No []

10. If yes, were you able to embrace and work with them?

Yes []

No []

11. Please rate their performance so far?

Excellent []

Very Good []

Good []

Satisfactory []

Poor []

12. From your own assessment, how do you rate viability of community managed projects two years after exit?

Poor []

Fair []

Good []

Excellent []

D. Donor exit strategy

13. Were you working with a partner agency?

Yes []

No []

14. If yes, were you handed over any community group(s)?

Yes []

No []

15. Comment on the performance of the community group(s) so far:

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

.....
.....
16. Were communities able to establish new linkage and networks with other donors?

Yes []

No []

17. if yes, please elaborate slightly

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

17. Recommendations

What are your recommendations for enhancing sustainability of community managed projects?

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

THANK YOU FOR YOUR TIME

Appendix III: Letter of Transmittal of Data Collection Instruments

To whom it may concern,

Dear Sir/Madam,

RE: A study on influence of community participation on sustainability of community managed water projects in Kitengela division, Kajiado County.

I am a postgraduate student at the Maseno University pursuing a Master of Arts degree in Project Planning and Management. I am currently undertaking a research project on influence of community participation on community water projects.

I am pleased to inform you that you have been selected to participate in the study. I therefore request you to provide data through the questionnaire that will be administered to you. Your identity will be treated with utmost confidentiality and the data provided will be used for academic purposes only.

Yours faithfully,

Rachael Nyatichi