INFLUENCE OF COMMUNITY PARTICIPATION STAGES ON SUSTAINABILITY OF COMMUNITY BASED WATER PROJECTS IN KENYA: THE CASE OF KIABAIBATE IN MERU COUNTY

BY

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DECLARATION

This Research Project is my original work and has not been presented for degree in any other University

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DEDICATION

This work is dedicated to; my family, most especially my Dad Jesse K. Lithara and Mom Alice Kirianki for their immeasurable trust, encouragement and confidence, that I will finish this course. More so, I appreciate my Sisters Irene and Cute, for the inspiration and encouragement for me to not give up and trust in myself. Thank you for all the understanding, support, care and love. To my best friend Eric Limiri for keeping me on course so as to adhere to the timeframe of completing the paper in the minimal time possible. Last, but the most important of all, to our great and almighty God, for His guidance and abundant blessings. Thank you for allowing your child to finish the work successfully.

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ABBREVIATIONS AND ACRONYMS

CBO	Community Based Organization
CBWP	Community Based Water Project
CDF	Constituency Development Fund
CP	Community Participation
JMP	Joint Monitoring Programme for Water Supply
MDGs	Millennium Development Goals
NWP	Netherlands Water Partnerships
SPSS	Statistical Package for Social Sciences
UNESCO	United Nations International Children's Emergency Fund
UNICEF	United Nations Educational, Scientific, and Cultural Organization
USAID	United States Agency for International Development
WASH	Water Sanitation and Hygiene
WHO	World Health Organization
WSPs	Water Service Providers

ABSTRACT

The difficulty of water accessibility is particularly acute in rural areas and small communities, where water collection may require hours of physical effort, water sources may be contaminated, or must be purchased at rates too expensive to allow for proper health and hygiene. It has been observed that the rural areas perform consistently worse than urban areas inaccessibility of clean water. In rural areas, where 78% of the national population lives, only 38% to 52% have easy access to safe water; in urban areas 59% to 83% have easy access to safe water. Tigania west Sub-County which is the scope of this study is part of the rural Kenya and therefore is faced by the problem of insufficient access of safe water to a majority of the population.

The study was concerned in establishing the influence of community participation on the sustainability of Community Based Water Projects in Kenya with specific reference to Kiabaibate Water Project in Meru County. The main objective was to dig into the characteristics of the membership and the management approaches and techniques with a view to seeing how best they contribute to the sustainability of the project.

The main concern here was to ascertain whether community participation contributes to the sustainability of Community Based water projects. In trying to unravel this issue the researcher intended to use descriptive survey design and sampled respondents from both the members of the water project and the management team. The sampling method was random sampling method of 30% members and project committee of Kiabaibate water Project.

The instrument of data collection is the questionnaire that was administered directly by the researcher as guided. Data was analyzed using descriptive statistics and inferential statistics: Frequency distributions and measures of central tendencies, and the results of the survey presented using tables.

The information gathered will enable communities understand the nature of CBWPs and further support Management committees, Government and donors in adding value to the way in which they engage with the CBWPs. The research equally puts in a voice to many other academic opinions that makes project execution a learning process.

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

According to the latest estimates of the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP), released in early 2013, 36 per cent of the world's population – 2.5 billion people – lack improved sanitation facilities, and 768 million people still use unsafe drinking water sources. Inadequate access to safe water and sanitation services, coupled with poor hygiene practices, kills and sickens thousands of children every day, and leads to impoverishment and diminished opportunities for thousands more. Poor sanitation, water and hygiene have many other serious repercussions. Children – and particularly girls – are denied their right to education because their schools lack private and decent sanitation facilities. Women are forced to spend large parts of their day fetching water. Poor farmers and wage earners are less productive due to illness, health systems are overwhelmed and national economies suffer. Without water, sanitation and hygiene, sustainable development is impossible (WHO, 2013).

UNICEF Kenya statistics (2008) reveals that 41% of 39.8 million Kenyans do not have access to clean water. This implies that Millions of Kenyans are currently underserved and too many citizens continue to drink unsafe water, or are forced to use minimal quantities of water as distance, waiting times, and cost make water inaccessible. This situation has made the United Nations (2008) to term Kenya as a chronically water-scarce country, and currently ranks 21st for the worst levels of access to potable water in the world.

The problem of water accessibility is particularly acute in rural areas and small communities, where water collection may require hours of physical effort, water sources may be contaminated, or must be purchased at rates too expensive to allow for proper health and hygiene. It has been observed that the rural areas perform consistently worse than urban areas inaccessibility of clean water. In rural areas, where 78% of the national population lives, only 38% to 52% have easy access to safe water; in urban areas 59% to 83% have easy access to safe water (World Bank 2009). Meru County which is the scope of this study is part of the rural Kenya and therefore is faced by the problem of insufficient access of safe water to a majority of the population.

According to an end term review report for safe water provision and sustainable water management options in arid & semi-arid land project, Tigania West Sub-County, where Kiabaibate CBWP is situated, falls within the rain shadow of Mt. Kenya and has unreliable and low rainfall and is poorly endowed with permanent surface water resources. Most parts of this Sub-County have low lying ground water resources that require drilling and mechanized means to lift the water for at least 150M to the ground surface. At times this water is saline and even though wind pumps have been tried they have not proven to be successful due to the depths. However large catchment seasonal water courses carry huge water volumes during the wet seasons that go to waste into the Indian Ocean (Njurai,2010).

Despite statements and policies promising quality service from water service institutions, the level of service to citizens is still wanting. Many households, both poor and non-poor, experience water scarcity even when they are within areas that are well covered through mains connections and water kiosks (World Bank 2010). The present study therefore attempts to find out from the community water project members if their participation in the water projects lead to sustainability of the water projects.

A documentary review on the project that is on focus indicates that Kiabaibate water project was started in the year 1975 as a self help project by the local community to provide piped water for the domestic, livestock and small scale farming targeting a population of 1000 households in the Nkomo location which is part of Uringu division, Tigania West Sub-County. To date the project has been able to put up the intake, laid the mainline and connected about 250 households.

1.2 Statement of the Problem

Although the CDF Act (2003) and water Act (2002) seems to institutionalize community based approaches, and more importantly in the water sector, this is basically a new paradigm in Kenyan development perspectives considering that since independence communities have not been encouraged to do much in terms of their development; they have been made to wait for the government to do things for them. As a result, there isn't much study to illustrate the effects of participation to community development (Mansuri and Rao, 2004). This is because, before this institutional recognition, most community based activities revolved around welfare and basic

saving schemes like merry go round and self help approaches without focus to serious major projects (Lewa and Mittullah, 2001)

The overall research problem addressed in this study is that despite the large number of Community based water projects performing ineffectively in Tigania West Sub-County, little has been done to assess the influence of community participation on the sustainability of community based projects (Njurai, 2010). According to a Sub-County Brief from the Ministry of Water, there are 39 Community Based water projects in Tigania West Sub-County out of which only 16 projects are performing to their full capacity. Challenges leading to the stall of the CBWPs cited in the brief include: Vandalism of equipments, mismanagement of the project equipment and lack of funds to sustain the project.

This study therefore was aiming at investigating the influence of community participation on the Sustainability of community based water projects in Kenya with specific reference to Kiabaibate water project in Meru County.

1.3Purpose of the Study

The purpose of this study was to investigate into the influence of community participation on the Sustainability of community based water projects in Kenya with specific reference to Kiabaibate water project of Meru County. The concept of community participation is understood as the involvement of the people in a community in development projects. It implies action by the people to solve their own problems; it can be understood in terms of activities performed by the communities in development projects. In particular the research will focus on how the water projects are conceptualized, identified, designed, implemented as well as evaluated.

1.4 Objectives of the Study

This study was guided by the following objectives;

i. To establish the influence of community participation in planning stage on Sustainability of Community based water projects
ii. To examine the influence of community participation in implementation stage on Sustainability of Community based water projects

iii. To assess the influence of community participation in maintenance stage on Sustainability of Community based water projects

iv. To determine the influence of community participation in evaluation stage on Sustainability of Community based water projects

1.5 Research Questions

i. How does community participation in planning stage influence the Sustainability of Community based water projects?

ii. How does community participation during implementation stage, influence the Sustainability of Community based water projects?

iii. How does community participation in maintenance stage, influence the Sustainability of Community based water projects?

iv. How does Community participation in evaluation stage influence the Sustainability of Community based water projects?

1.6 Significance of the Study

The research is intended to benefit; individual members and management of CBWPs; the donors and Governments in policy making. The research was meant to unearth some of the practices to enable communities learn from the influence of community participation on sustainability of community water projects so as to perfect the practice. Involving communities in the planning, implementation, maintenance and evaluation of projects implies that a new closer relationship will have to be established between the government /donors and the people benefitting from the projects. It is important to note that CBOs, and not of exception CBWP, are gradually forming an important part of development paradigm in Kenya.

1.7 Delimitation of the Study

The study was focusing on examining the various Community Participation practices employed by Community Based Water Projects in Meru County and their effects on overall performance. Tigania West Sub-County, where Kiabaibate CBWPs is located, falls within the rain shadow of Mt. Kenya and has unreliable and low rainfall and is poorly endowed with permanent surface water resources. Most parts of this Sub County have low lying ground water resources that require drilling and mechanized means to lift the water for at least 150M to the ground surface.

1.8 Limitations of the Study

It was anticipated that project management committee members would shy off from giving information for fear that research is going to evaluate their leadership, hence can fail to open up debate on their leadership among the project members. This could be overcome by making clear intention of the research to them ahead of data collection. Time was also likely to pose a challenge to the study. This challenge would be addressed by use of a research assistant, e-mail and phone for interviews because a questionnaire is the tool of research.

1.9 Assumptions of the Study

This study took the following assumptions; that the experiences of community participation of the sampled community water project are representative of other community based water projects in Kenya; that the sampled population will represent the general population of membership of the community water projects; that the chosen respondents will be truthful to themselves and give correct information; that the respondents will be willing to give the required information freely and that the methods of data collection used shall be accurate and valid to enhance acquisition of the required data.

1.10 Definitions of Significant Terms Used in the Study

Community Based Water Projects-A water project made up of community membership, whether registered with relevant government authorities or not. Where members have control over key decisions in the implementation and capital investments.

Community Participation-In this research Community Participation is a process by which individuals, families or communities assume responsibility for local problems and develop a capacity to contribute to their own community development.

Community participation in evaluation -Evaluation is a process that involves systematic collection, analysis and interpretation of project related data that can be used to understand how the project is functioning in relation to project objectives. Community participation in evaluation refers to a process of collaborative problem-solving through the generation and use of knowledge. It is a process that leads to corrective action by involving all stakeholders in shared decision making.

Community participation in implementation of projects-Implementation is the carrying out and execution of a plan so as to meet set objectives. This study will consider any contribution by

community members such as cash, labour, ideas contribution in meetings, planning, materials support and many other forms of community involvement also amounts to Community Participation in implementation.

Community participation in maintenance of projects -Maintenance is the act of keeping a project in good condition so as to continue meeting its objectives. As a project nears completion, community participation varies greatly depending upon the project and locality. In a successful community-based facility, the bulk of the work starts at this stage as the community will carry out the day-to-day management duties and all the necessary maintenance requirements.

Community participation in planning-Planning is a scheme, program, or method worked out beforehand for the accomplishment of an objective. Community participation entails consultation with the community before the water projects are implemented and also concern participation by the community in decision making in terms of designing the project, location of water standpoints and so on.

Sustainability of CBWPs-Sustainability in this study refers to the ability of project beneficiaries to maintain and sustain project activities, services and any measure initiated by a project so as to last long after the expiring of the funding period. It also entails operation and maintenance issues.

1.11 Organization of the Study

This study is organized into five chapters which capture various components of the research. Chapter one captures the spirit of the research in the introduction; it also attempts to respond to the questions as to why the research is necessary and what it aims at achieving. It also explores into the expected challenges and opportunities for good research results as well as defining key concepts in the research. Chapter two forms the Literature review of the study and equally focus on what other scholars have observed in as far as issues and variables in this research are concerned. It also comes up with the conceptual framework, which forms the spine of the research.

Chapter three deals with the specific methodology of research as well the procedure in data analysis. It includes the research design, target population, sampling procedure, data collection methods, methods of data analysis, the validity and reliability, operational definition of variables and ethical issues.

Chapter four has provided provide an analysis and interpretations of the data from the field. Finally chapter five presents the summary of the findings from chapter four and also gives conclusions and recommendations of the study based on the objectives of the study.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter will give an overview of literature and models that are related to the research problem. It will introduce the concepts of Community Participation and CP critical success factors established by different authors. The chapter also includes interpretations of critical success factors; moreover, some criticisms of Community Participation will be presented.

2.2 The concept of Community Participation in CBWPs

UNDP defines a community as a group of people living in a geographical defined area, or a group that interacts because of common social, economic, or political interests. Midgley,1986), shares a similar view as he defines a community in terms of geographic locality, of shared interests and needs, or in terms of deprivation and disadvantage. "If sliced finely with analytical razor, a community may look like the sum of individuals who make it up, yet to suggest that `community` does not exist is completely counter –intuitive to anyone who has experienced a rural community. Community does contain interest groups and they are made up of individuals, but they are more than interest groups and are more than the sum up of the individuals who make them up. The individual men, women and children, some rich, some poor, do not just co- exist in a shared space. They interact in many different ways, some visible, some invisible. The existence of community is not something that can be demonstrated, it is a philosophical point of departure that is shared, albeit implicitly, by most of the key players'' (Schouten and Moriarty, 2003).

Participation to development have been proliferating in third world countries since 1980`s, and they are now accepted components of projects design among mainstream donor agencies. The advocates and practitioners of the concept proclaim that people's empowerment, local knowledge and community ownership are indispensable ingredients of project success and sustainability. Under label such as `people's participation`, public involvement `, community participation`, social mobilization`, self help development`, and `grassroots development`, projects have been initiated on smallholder crop and livestock development, irrigation and water supply alike (Bastian and Bastian, 1996).

In assessing participation, it is argued that the adoption of participatory orientation in contemporary mainstream development is a somewhat peculiar turn of events. Demand for participation has their origin in radical politics. The democratization in development has been a long standing objective of radicals in both the developed and the developing world. The aim of this is to prevent adverse impact of normal development on disempowered actors and to generate receptiveness to the interests of the people. In the third world countries there is widespread resistance to development projects that serve the interests of national elites and donor nations or foreign policy. This has precipitated grassroots movements demanding participation in project planning and decision making (Bastian and Bastian, 1996).

Kasiaka, (2004) asserts that, "Participation is an approach through which beneficiaries and other stakeholders are able to influence project planning, decision-making, implementation and monitoring phases. On the other hand, participation is considered to be a prerequisite for project ownership, successful implementation and sustainability of the projects in question. Participation does not mean acceptance of all ideas from diverse groups. In participation, there is a need to combine indigenous and intellectual knowledge. However, care must be taken so that intellectual knowledge does not influence that of the indigenous''

"If we accept that communities exist, then it becomes meaningful to talk of them owning and sharing things and then to speak of the equity with which these are owned or shared. Equity includes both a sense of equality and a sense of being entitled to a share in ownership. Equity is crucial to community management. It implies that, although communities are diverse, everyone in the community should profit in the same manner from a water supply system. It accepts that communities must mean more than rich getting together to buy themselves an expensive water supply system. To deal with this view of community means to acknowledge diversity'' (Schouten and Moriarty, 2003).

Figuere, (2003) argues that those projects which involve the widest possible participation of people whose needs are addressed are mostly likely to be effective. CP is taken to mean that community plays an active role in its own affairs by sharing and exercising political and economic power. The term community participation is sometimes used interchangeably with

community management to refer to community involvement in development projects (McCommon, 1990)

The objectives of CP in the context of Community water project and for the purpose of this study includes; sharing project cost, increasing projects efficiency, increasing project effectiveness, and ensuring sustainability of the project.

2.2.1 Preconditions for Community Participation

Despite the rather complex nature of community participation in the management of water resources, it is possible to identify the preconditions that create the enabling environment in which community management can occur. WASH identified the important preconditions for CP which is likely to include: demand for improved system, the information required to make informed decisions must be available to the community; Technologies and levels of service must commensurate with the community's needs and capacity to finance, manage, and maintain them; The community must understand its options and be willing to take responsibility for the system; The community must be willing to invest in capital and recurrent costs; The community must be empowered to make decisions to control the system; Effective external support must be available from governments, donors, and the private sector (training, technical advice, credit, construction, contractors etc) (McCommon, 1990).

2.2.2 Indicators of Community Participation

Many organizations have specific processes and standards for requesting and evaluating a project. There will often be norms for assessing the financial benefits, like payback period, internal rate of return, discounted cash flow etc. There may also be standard procedures for presenting a business case and obtaining approval for the capital investment. A project is considered success if its implementation facilitates community empowerment which can be assessed on factors such: Whether communities are participating in decision making, Whether accountability has been enhanced, Whether organizational capacity has been enhanced at the community level, Whether operation and maintenance arrangements are in place, Whether communities are accessing information to make informed decisions. (Mwakila, 2008)

"Water supply facilities provided without the active participation of the beneficiaries in planning and management are often not properly operated and maintained and hence are unsustainable" (NWP, 2002). Ownership of the facilities including water wells is neither perceived to be, nor legally vested in user communities. These factors lead to a lack of commitment to maintenance of the facilities by the users. Communities should be empowered to initiate, own and manage their water schemes including water wells. In order to ensure that communities become legal owners of water supply schemes the following should be undertaken: Legal registration of water user entities should be instituted to ensure that communities are the legal owners of their water supply schemes including water wells, Roles, responsibilities, rights and limits of authority of water user entities should be clearly defined, Communities should be facilitated in acquiring technical and management skills (NWP, 2002, Kasiaka, 2004).

2.3 Understanding the nature of Community Based Water Projects (CBWPs)

According to Mulwa (2008) Community Based Organizations (CBOs) are voluntary associations where people organize together in order to mobilize the potential of their collective power. Ideally, they are initiated, managed and owned by the members themselves where the process formation should be voluntary and genuine, borne out of self determination by members to work together (Ibid, 2008). It is a product of rural peoples' realization that they cannot expect to build a better life through assistance from the central authorities and planning agencies and a local coping strategy which involve ecological, economic, social and political responses (Ibid, 1992)

Community Based projects are a product of the movement towards self reliance that started in the 1980s. According to Mbilinyi and Gooneratne(1992), self reliance has been advanced as a viable alternative strategy to development and has been seen as an example of community based and participatory approaches which have evolved from basic decision making concerning allocation of resources remaining in the hands of government and or donors, while local people participate in providing labour, money, land, water, tools and other local resources in the projects or programmes they have not initiated and over which they have no control.

In Kenya, self help groups were mainly active in 1980s in activities relating to soil and water conversation, construction of schools, dispensaries, shops and stores and small scale livestock

development where the main fundraising approach was Harambee and merry go-round (Ibid, 1992)

K-Rep defines a community based water project to mean a water service provider legally registered under the societies Act, the companies act or the trustees(perpetual succession) Act that has been granted service provision agreement from the water service board responsible for the area where it is situated, (K-Rep, Maji ni Maisha)

2.3.1 The Influence of Community Participation on the Sustainability of Community Based Water Projects

Richard (1999) defined sustainability as a continued delivery of a particular service. Richard emphasized on the need to involve all stakeholders in consumption and cost recovery strategies to ensure delivery of high quality services and sustainable development projects. Abraham (1998) on the other hand, views sustainability of water projects as a continued flow of water at the same rate and quality, as when the supply system was designed. To him if water flows, then all elements of sustainability would be in place.

"Sustainability in this study refers to the ability of project beneficiaries to maintain and sustain project activities, services and any measure initiated by a project so as to last long after the expiring of the funding period. In water projects, we cannot talk of sustainability without mentioning operation and maintenance issues" (Kasiaka, 2004). Safe and clean drinking water supply is sustainable only if, the water consumed is not overexploited but naturally replenished, facilities maintained in a condition that ensures reliable and adequate portable water supply. The benefits for the water supply should continue to be realized over a prolonged period of time (David and Brikke, 1995).

(Kimberly 1998) maintains that sustainability in water projects means, ensuring water supply services and interventions continue to operate satisfactorily and they generate benefits over time as expected. He further pointed out that, sustainability is all about ability to operate and maintain initial project service standards. However, to achieve this it has to be planned from the very beginning of the project, so as to ensure prerequisites for long-term sustainability and strategies are aimed at seeing that sustainable projects are in place and are in good working order.

On Factors Affecting Community Participation and Sustainability of Projects, Parameswaran (1999) argues that a range of characteristics such as technology used to implement project activities can be effective to CP. The more complex technology is the less participation. The question of technology has direct link with sustainability of project services especially when operational and maintenance costs are to be met by the beneficiary communities. Another factor according to Parameswaran is on human and financial resources, as they are vital when it comes to meeting operational and maintenance costs.

In addition, transparency accounts for the degree of Community Participation. For this matter community members will actively participate if benefits are clearly articulated and obtained immediately at the beginning of the project design. For the case of the water project, people expect to see domestic water points installed or boreholes drilled and in operation. Moreover, administration structure is equally important. Thus, if projects allow users' contribution and if they are flexible, well coordinated and managed well at the local level, with free flow of information then people will automatically participate. Women's involvement in project activities and capacity building are also essential to sustain project-initiated services. This is because in water projects women are the main stakeholders. Therefore, women participation and leadership positions in Water Committee are inevitable for sustainable water projects (Mbugua et al, 1993).

In order to Enhance the Sustainability of Water Project Services Brikke (1997) argues that sustainability of project services are to be realized if water sources are not overexploited, facilities for operation and maintenance are in place, and funds are readily available. And that both women and men are involved in the design, planning and management of the scheme, and technology choice corresponds to needs desires. Also projects are culturally accepted, spare parts are available and affordable, and support system is in place. Others include capacity building, technical assistance and availability of well-established institution for legal framework.

On the other hand Claud (1998) observes that though Community Participation is essential in ensuring sustainability of rural development projects, it has its own shortcomings. Participatory planning is time consuming and a complex process. The process takes about six months or more

to be understood. As a result, beneficiaries expecting to get quick results get discouraged and, that participatory planning is a threat to experts and the community they are serving. The reason for this tendency being that some development experts tend to feel they know better than the community they are serving.

Quoting Bergdall, Mulwa(2008) observes that some of the factors that could lead to collapse of grass root organizations, CBOs included, are hijacking of the project from above, heterogeneous membership that threatens harmony, limited social awareness that leads to increased vulnerability, crushed and crippled spirit as a result of poverty, non democratic political environment contradicting the process of empowerment and comprises on unity of purpose as a result of large projects that are difficult to manage.

Community Participation is never homogeneous. There are a number of problems that emerge in the cause of participatory approach, such as conflicts of interest among different social groups, cultural, and political constraints (Mbugua, 1993). Moreover, Mbugua (1993) suggested that too much mass involvement in decision-making impedes development growth of the ongoing project. The argument is that it delays decision-making. Thus, participatory planning needs to be facilitated by appropriate expertise so as to determine who should participate, how, what will be the scope of participation and also how much weight should be given to wishes and demands expressed as compared to priorities already set by official authorities (Martinusen, 1999).

David and Joseph (2001) also had the view that participation does not mean that all views from people should be taken into account when setting project activities. There is also the fact that, both regional secretariat and districts councils do not have the capacities to support participatory planning at the lower council level. This situation arises from the fact that most of the staff at the Regional and District levels have become used to a top- down approach to development. Hence, they are used to planning for and not with the people (Kasiaka, 2004). The table below summarises some of the scholars' opinion on the sustainability of community based water projects

Table 2.1 Scholars' Opinion on the Sustainability of Community Based Water Projects

Factors	**Source**
Social Homogeneity of water users	Watson, Jagannathan, Gelting and Beteta (1997)
Operational rules of water users group	Sara and Katz (1998), Isham and Kahkonen (1998)
Prior organization of water users	Naryn (1995)
Participation of users in other community groups	Isham and Kahkonen (1998)
Coordination with Governments	Sara and Katz (1998), Isham and Kahkonen (1998)
Legal recognition of water users groups	Watson, Jagannathan, Gelting and Beteta (1997)
Skills and knowledge of users	Rondinelli (1991), Sara and Katz (1998), Isham and Kahkonen(1998)
Appropriate technology and access to spare parts	Rondinelli (1991)

Table 2.1: Scholars' Opinion on the Sustainability of Community Based Water Projects

Adopted from: Community based rural drinking water delivery: selected factors influencing performance of community management, in Kahkonen Satu (1999)

2.4 Review of Community Participation influence on the Sustainability of community based projects

The principles of participation are rooted in Paulo Freire's psychosocial method in which people discussed their own life situation, identified their problems and planned for transformation,(Mulwa, 2008) and the Mahatma Gandhi's principles of self help (Mansuri and Rao, 2004) The principles requires developers to focus on creating critical awareness through experience based learning, reflection on the peoples' own life situations and finding out what to do with its inadequacies, planning for collective action to transform whatever is un desirable, acting to change the situation and finally identifying failures and successes from actions taken so that it informs the next plan of action (Ibid,2008) It is a reversal from centralized standardization to local, diversity, and blue print to learning process, (Chambers, 1994)

2.4.1 Community Participation in Planning Stage

The higher the degree of community participation in a project, the greater is the need for care in planning at the community level. This also means that communities that accept a higher level of community participation need greater support in their activities from the regional and national offices of the development agency. Two areas where a particularly high level of support is needed are manpower (Skilled) and training. Both areas have been major constraints to progress in the past (WHO 1986).

With regard to planning at the community and individual project levels, major emphasis is placed here on attention to detail. Experience has shown that great care at the time of planning leads to more successful implementation of projects. Therefore, there should be explicit statements in the national plans regarding who is to make decisions on issues that are not already dealt at the national level. It is also important to ensure that there is consistency between decisions made at the community/project level and those made at the higher level so that unrealizable expectations are not generated and impossible demands are not placed on either communities or agency officials (WHO 1986).

Ngowi and Mselle (1998) argue that at the planning stage, four levels of intensity in community participation may be distinguished: Information sharing where project designers and managers may share information with beneficiaries in order to facilitate collective or individual action. Though it reflects a low level of intensity, it can have a positive impact on project outcomes to the extent it equips beneficiaries to understand and perform their tasks better.

Consultation which occurs when beneficiaries are not only informed, but also consulted on key issues at some or all stages in a project cycle. There is an opportunity here for beneficiaries to interact and provide feedback to the project agency, which the latter could take into account in the design and implementation stages. If, for instance, farmers are consulted on extension practices and arrangements, project outcomes are likely to be better than if they were merely informed.

Decision making that occurs when beneficiaries have a decision-making role in matters of project design and implementation. Decisions may be made exclusively by beneficiaries or

jointly with others on specific issues or aspects relating to a project. Farmers may, for instance, decide by themselves on a programme for the distribution of water for irrigation. Decision making implies a much greater degree of control or influence on projects by beneficiaries than under consultation or information sharing.

Initiating action, this occurs when beneficiaries are able to take the initiative in terms of actions/decisions pertaining to a project. Initiative implies a proactive capacity and the confidence to get going on one's own. When beneficiary groups engaged in facility development identify a new way of running the facility and respond to it on their own, they are taking the initiative for their development. The intensity of community participation in this case may be said to have reached its peak because this move is qualitatively different from their capacity to act or decide on issues or tasks proposed or assigned to them.

2.4.2 Community Participation in Implementation Stage

"Many writers on rural Community Participation and the area of water resource consider monetary contributions as amounting to CP" (Claud, 1998). This study considers any contribution by community members such as cash, labour, ideas contribution in meetings, planning, materials support and many other forms of community involvement also amounts to Community Participation.

Ngowi and Mselle (1998) assert that Community participation at the implementation stage can be divided into sharing of costs and furnishing of labour. In most cases, cost sharing is achieved according to one of two alternative principles. One is to make those members of the community who will benefit from the facility bear the cost. The other is to let members of the community freely make donations according to their perceived interests. Projects aimed at improving essential community services, such as water-works and sewer systems, are usually financed by means of compulsory cost sharing. The free donation method is adopted for construction of essential community facilities, such as children's play grounds.

Sharing of labour is also achieved in two different ways. One is direct contribution of labour; the other involves initially contributing the monetary equivalent of one's share of labour, then getting the money back in the form of wages by personally participating in the work. For small-

scale cooperative projects, members of the community will usually carry out the project by directly contributing their labour. If a project is larger, and is implemented through government agencies contracting the work out to some construction firm, the latter method of labour sharing is often adopted.

At the project implementation stage, critics have been quick to point out that there is often is a limited number of members of the community participating in such schemes. In addition, their participation is generally restricted to simple matters, such as provision of labour and cost sharing, and not with the important issues faced during the process of decision making as it relates to project initiation and execution (Park, 1996). Furthermore, there often is lack of competent voluntary leaders. Indigenous leaders cannot afford to devote enough time and energy to the task. Community-based activities, therefore, tend to lose momentum in many small sized community units.

Most of these problems can be traced to misleading assumptions about "community" and "participation" informing these approaches. One fundamental assumption is that a distinct community exists, and approaches commonly focus on "... the people of a local administrative unit …of cultural or ethnic group … or of a local or rural area such as the people of a neighborhood or valley" (IUNC/WWF/UNEP, 1991).

2.4.3 Community Participation in Maintenance Stage

As a project nears completion, community participation varies greatly depending upon the project and locality. In a successful community-based facility, the bulk of the work starts at this stage as the community will carry out the day-to-day management duties and all the necessary maintenance requirements (Ngowi and Mselle 1998).

According to the USDA, (1990) effective maintenance is partly the result of regular routines and partly the result of promptly fixing small problems before they become major ones. Proper maintenance has a direct effect on the beneficiaries' perception of the quality a project's outputs. Most maintenance work can be predicted and scheduled— this is typically described as preventive maintenance. Procedures are also required for the routine maintenance of equipment

consistent with service information provided by the manufacturer—biweekly or monthly routine oiling, adjusting, replacement of filters, safety checks of alarms, and outside lighting among others. Frequent, regular inspections are also a major component of an effective maintenance system. The USDA requires management, at a minimum, to perform an annual inspection of a project system so as to detect malfunctions before the situation worsens

2.4.4 Community Participation in Evaluation Stage

Evaluation is a systematic way of learning from the past events and drawing lessons to correct and improve ongoing and future activities. Evaluation allows for necessary adjustment to fit people's needs within the framework of established and agreed upon goals (Narayan, 1995). The main goals of water and sanitation programs are sustainable use and expansion of services. To achieve these goals, Wright (1997) suggests developing a demand oriented system based on what users want and the resources they are willing to use to finance the facilities and the degree to which they are willing to provide a long-term and effective management system. Successful implementation of these strategies requires timely participatory evaluation of the projects.

Participatory evaluation is a process of collaborative problem-solving through the generation and use of knowledge. It is a process that leads to corrective action by involving all stakeholders in shared decision making (Narayan, 1995). Participatory methods are adapted to fulfill specific tasks. Validity and reliability are achieved through the use of multiple methods and through including different users and stakeholders in consensus building.

The major objective of participatory evaluation is establishing whether the project is delivering anticipated goods and services in a sustainable manner and assessing the contribution of different levels of community participation and management for the sustainability of the projects. The aim is to identify positive factors that can be enhanced and to overcome identified/current weaknesses in order to strengthen the project. At the project level, scoring techniques are commonly used to quantify these indicators of community participation and management, and sustainability (Kaliba, 2002).

Community participation, management and sustainability, are based on the principle that water is an economic as well as a social good. When evaluating water projects at the community level, in

addition to using community participation and management, sustainability indicators, economic tools are useful for performance evaluation. Such tools include productive efficiency and willingness to pay types of analyses. Productive efficiency examines if a project's operational and management costs are optimal. Efficiency also indicates if communities are effectively using the developed facilities, by committing sufficient financial resources. Specifically, productive efficiency analysis evaluates if the resources used in production are utilized efficiently and thus indicate the capability of management in allocating scarce resources (Bhattacharyya et al, 1995).

2.5Theoretical Framework

The beneficiaries of any facility in a community need to have a say in the decisions concerning the facility, and where possible to take part in its development and manage it on completion (Ngowi and Mselle 1998). This can be achieved through community participation, which according to Cernea (1985) is defined as "... an active process by which beneficiary client groups influence the direction and execution of a development project with a view to enhancing their well-being in terms of income, personal growth, self-reliance or other values they cherish". This definition implies that the context of participation is the development project; that the focus is on the participation of beneficiaries, and not that of government personnel; that the joint or collaborative involvement of beneficiaries in groups is a hallmark of community participation; and that community participation refers to a process and not a product in the sense of sharing project benefits. In other words, community participation can be said to occur only when people act in concert to advise, decide or act on issues which can best be solved through such joint action (Ngowi and Mselle 1998).

Community Participation is also defined as a process by which individuals, families or communities assume responsibility for local problems and develop a capacity to contribute to their own community development (Singh, 2005). World Bank experience with CP has given rise to the following definition: an active process whereby beneficiaries influences the direction and execution of development projects rather than merely receive a share of a project's benefits. This definition places participation by beneficiaries rather than external personnel, stressing the involvement of beneficiaries in groups, and refers to a process rather than a product. Recent reports of World Bank and US Agency for International Development (USAID) and WASH

point out that CP may have considerable potential for improving development planning and sustainability (Schouten and Moriarty, 2003).

2.5.1Arnstein's ladder of participation

Possibly the influential theoretical work on the subject of community participation was by Arnstein (1969). The particular importance of Arnstein's work stems from the explicit recognition that there are different levels of participation, from manipulation or therapy of citizens, through to consultation, and to what we might now view as genuine participation, that is the levels of partnership and citizen control (Yorkishire, 2000)

Since Arnstein, this theory of participation has been advanced and new terminology added. In particular, there has been a shift towards understanding participation in terms of the empowerment of individuals and communities. This has stemmed from the growing prominence of the idea of the citizen as consumer, where choice among alternatives is seen as a means of access to power (Burton, 2003). Under this model, people are expected to be responsible for themselves and should, therefore, be active in public service decision-making. In this context, Burns (1994) modified Arnstein's ladder of participation and proposed a ladder of citizen power.

As a development of this ladder concept of participation Wilcox identifies five interconnected levels of community participation. This work has arisen from the UK regeneration context and reflects a philosophical progression in though around participation. That is that different 'levels' of participation are acceptable in differing context and settings, this progression recognizes that power is not always transferred in apparently participative processes, but that the processes still have value. As opposed to the common interpretation of Arnstien, that brings the thought that it is only acceptable to be striving towards citizen control. Within some contexts this move in philosophy has been further developed to describe levels of involvement as a continuum (Wilcox 1999).

Arnstein's theory has been criticized on the basis that each of the steps represents a very broad category, within which there are likely to be a wide range of experiences. For example, at the level of 'informing' there could be significant differences in the type and quality of the information being conveyed. Realistically therefore, levels of participation are likely to reflex a

more complex continuum than a simple series of steps. The use of a ladder also implies that more control is always better than less control. However, increased control may not always be desired by the community and increased control without the necessary support may result in failure (Stoker 1997).

Figure 2.1: A ladder of participation

Information
Consultation
Deciding together
Acting together
Supporting individual community initiatives

Figure 2.1: A ladder of participation (Wilcox, 1999)

2.5.2 The Partnership Model

Fig. 2.2 Partnership Model

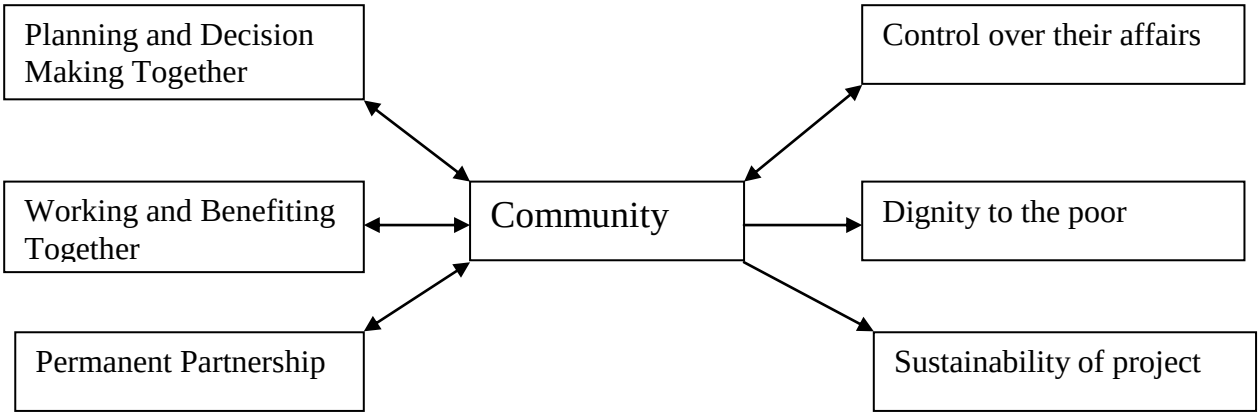


Fig. 2.2 Partnership Model from Narayana Reddy, 2002

Narayana Reddy in his book Empowering Communities through Participatory Methods, explains that in the top-down model of participation, the governments decide and provide for the communities which develops a sense of dependency and lethargy among the people. He presents an alternative to the top-down model in the form of a “partnership model” where the

governments and communities work together in planning and decision-making with long-lasting results.

2.5.3 Top-Down versus Bottom-Up Approach

Community participation can be of two types; in the form of top-down programs or bottom-up initiatives (Moser 1991). These two processes are the exact opposites of each other and differ on the basis of whether governments/implementing agencies or the communities have the overall control of the program.

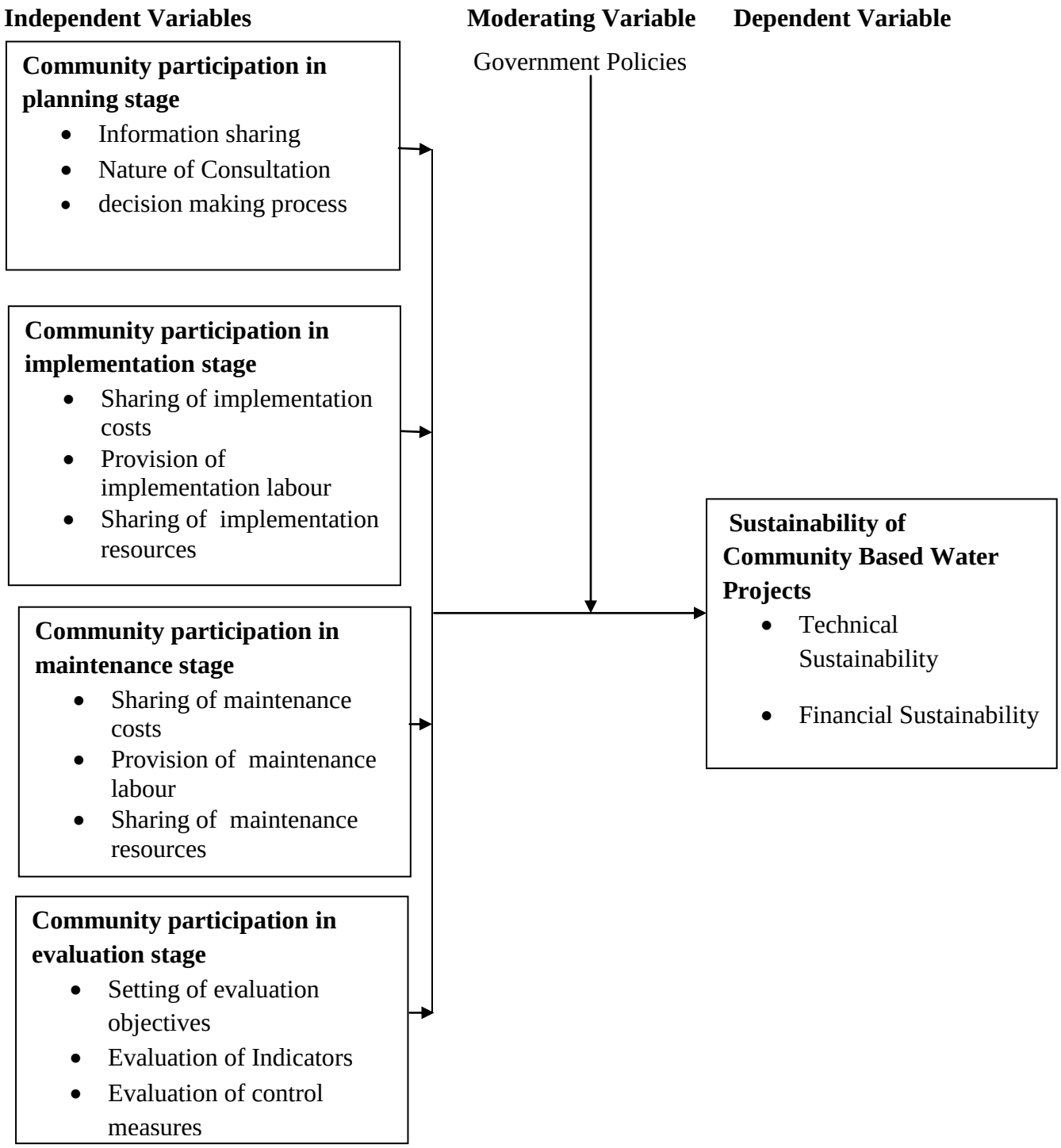
Turner (1977) elaborates the top-down and bottom-up approaches by comparing them with the 'heteronomous housing systems' and the 'autonomous housing systems' respectively. The difference between the two systems is in the decision-making power of different actors at different stages of the housing process. In the case of the heteronomous system, Turner, (1977) explains that the government decides and provides housing for the people in a top-down process while the autonomous system follows a bottom-up approach and has different networks of actors working alongside in different relationships.

Johnson (1983) in his book, Development in South Asia, explains the top-down and bottom-up developmental approaches using a simple example of the construction of a dam and the improved agricultural production as a result. In most cases, the dam construction is a top-down development process where all the decisions are made by the government or other agencies without seeking the consent of the people. Johnson explains that there can be a bottom-up development as well where the people may decide to adopt modern agricultural technologies to improve the overall production. Now these are two different kinds of developments, one is imposed while the other is self-chosen by the people.

2.6 Conceptual Framework

Figure 2.3 below indicates that the Sustainability of Community Based Water Projects is dependent to the community participation in various stages of the project development which are; planning stage; implementation stage; maintenance stage and evaluation stage. There is also a moderating variable, Government policies which equally manipulate the environment in which the project is operating thus influencing the sustainability of the project as well.

Fig 2.3 Conceptual Framework



2.7 Summary of the Literature Review

Having analyzed the opinion of scholars in this field and developed the conceptual framework, the next chapter will entirely deal with how data will be collected and analyzed. It will concern itself with the process and methodology of getting the content with which to support the framework in this chapter.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with the specific methodology of research as well the procedure in data analysis. It includes the research design, target population, sampling procedure, data collection methods, methods of data analysis, the validity and reliability, operational definition of variables and ethical issues.

3.2 Research Design

The research used a descriptive survey design. This is because the study was based on the views and opinion of the respondents who are members of a community water project. Mugenda and Mugenda (2003) define research design as an attempt to collect information from members of a population in order to determine the current status of the population with respect to one or more variables.

3.3 Target Population

A target population is the total collection of element along which researcher wishes to make some inferences (Mugenda and Mugenda, 2003). Therefore the target population is all the Community Water Projects in Tigania West Sub-county. The accessible populations of the study are all the members and project management committee of Kiabaibate Community Water Project. Therefore the target population of this study is the 226 project members and 15 management committee members of Kiabaibate Community Based Water Project.

3.4 Sampling Procedure and Sample Size

3.4.1 Sample Size

The table below indicates that the sample size was ultimately to be determined by the population size. Thus the smaller the population, the bigger the percentage of the population is required for sampling and vice versa. It has been observed that after a certain sample percentage (usually 20%); the effect of the sample size on a research outcome remains constant, or normalises. By these standards, the minimum survey sample is recommended at 10% where large population is involved (Casley and Kumar 1988). Based on the observation of Casley and Kumar (1988) the research adopted a sample size of 30% members and project management committee of Kiabaibate Water Project.

Table 3.1 Sampling Table

	Population	Sample	Percentage
Water project Members	226	68	30
Management team	15	5	30
Total	243	73	30

Table 3.1 Sampling Table gives a breakdown of the target population and the sample size

Source: Kiabaibate Water Project (2014)

3.4.2 Sampling Procedure

The study adopted a simple random sampling procedure as it allows a known probability that each elementary unit of the population will be chosen hence increasing the possibility of collective representation and greater objective and variety of opinion based on gender. Assuming even distribution of membership, this gave 68 members because the project has 226 members and 5 project management team from the 15 members of the management team. The total project population is as shown in table 3.1 above.

3.5 Research Instruments

The questionnaire was administered to the sample chosen for the study. The researcher opted for the primary data collection technique in the form of questionnaires which were researcher assisted as all respondents may not be literate enough for the purpose of the questionnaire items. The questionnaires were conveyed to the respondents by use of the drop and pick later method. An introductory letter from the University authorizing the research to be undertaken was used by the researcher to assure the authenticity of the study. The researcher chose to use a questionnaire because of the following benefits. First, the questionnaire enables the researcher to ask structured questions which are easier to analyze as well as to administer as each question is followed by alternative answers. Secondly, the questionnaire enables the researcher to use open-ended questions thus permitting a greater in-depth response from the respondents. These particular

responses enable the researcher to get greater insight into the feelings, decisions and thinking of the respondents.

3.5.1 Pilot Testing

The questionnaire was validated through a pilot with a sample of respondents from Mawega Water project of Meru County. This confirmed the reliability of the structure, question sequence and the meaning of questions. The population samples from the two water projects shall be used in the pilot to avoid irregular skewing of the results and ensure uniformity of meaning and clarity of instruments to all respondents.

3.5.2 Validity of Instruments

Validity is the extent to which a test measure measures what it is supposed to measure (Gay 1987), Validity of a test instrument therefore is defined as the accuracy and meaningfulness of the inferences, which are based on the research results. The questionnaire was validated through a pilot with a sample of respondents from Mawega Community Water project in Meru County. This confirmed the reliability of the structure, question sequence and the meaning of questions. The population samples from the two water projects were used in the pilot to avoid irregular skewing of the results and ensure uniformity of meaning and clarity of instruments to all respondents. The archival data collected shall be specific to the focus of research.

3.5.3 Reliability of Instruments

Reliability according to Mugenda and Mugenda (2003) refers to the consistency of a measure. A test is considered reliable if the same results are achieved repeatedly. The test-retest method was applied where a part of the sample was used to test reliability.

3.6 Methods of Data Analysis

The collected Data was analyzed using descriptive statistics: - Frequency Distributions and measures of central tendencies and the results of the survey are presented using tables. The data is organized to answer the set objectives in the study.

3.7 Ethical Issues

While collecting the data the respondents were handled carefully and the information they offered was treated confidentially protecting the identity of the respondents. Any data collected

from respondents must be handled carefully and the respondents must be handled confidentially safeguarding the identity of the respondent is a requirement by the UN Declaration of Human Rights 1948. When collecting the data the respondents were not forced to give information in favor of the researcher, the respondents gave information freely and willingly.

3.8 Operational Definition of variables

Table 3.2 Operational Definition of variables

OBJECTIVE/ RESEARCH QUESTION	TYPE OF VARIABLE	INDICATORS	MEASURE	LEVEL OF SCALE	APPROACH OF ANALYSIS	TYPE OF ANALYSIS	LEVEL OF ANALYSIS
	Dependent Variable: Managerial Sustainability of Community Based Water Projects	Technical Sustainability Financial Sustainability	Effectiveness of set systems Amount of annual returns generated by the project	Ordinal Nominal	Quantitative Quantitative	Non-Parametric	Descriptive
To establish the influence of community participation in planning stage on managerial sustainabili	Independent Variable: Community participation in planning stage	Information sharing Nature of Consultation Decision making process	Members Knowledge on project design Involvement of members in decision	Ordinal Nominal	Quantitative Quantitative Quantitative	Non-Parametric	Descriptive

ty of Community based water projects			making				
To examine the influence of community participation in implementation stage of projects on managerial sustainability of Community based water projects	Independent Variable: Community participation in implementation stage	Sharing of implementation costs Provision of implementation labour Sharing of implementation resources	Proportion of cost shared between the Members of the Project and the Donors Type of labour provided by the members of the project during implementation Resources provided by the members of the project during implementation	Ordinal Nominal	Qualitative Qualitative Qualitative	Non-Parametric	Descriptive
To assess the influence of	Independent Variable: Communit	Sharing of maintenance costs	Proportion of cost shared between	Ordinal	Qualitative	Non-Parametric	Descriptive

community participation in maintenance stage on managerial sustainability of Community based water projects	y participation in maintenance stage	Provision of maintenance labour Sharing of maintenance resources	the Members of the Project and the Donors for maintenance Type of labour provided by the members of the project for maintenance Resources provided by the members of the project for maintenance	Nominal	Qualitative		
To determine the influence of community participation in evaluation stage on managerial sustainabili	Independent Variable: Community participation in evaluation stage	Setting of evaluation objectives Evaluation of Indicators Evaluation of control measures	Level of Members involvement in setting of evaluation objectives Members involvement in setting the project	Ordinal Nominal	Qualitative Qualitative Qualitative	Non-Parametric	Descriptive

ty of Community based water projects			indicators Members involvement in setting control measures				

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter provides the analysis and interpretations of the findings from the field. The study investigated the influence of community participation stages on sustainability of community based water projects in Kenya, specifically the Case of Kiabaibate in Tigania West Sub-County. Therefore this chapter presents the analysis of data collected from the field items in the study questionnaire. The findings were analyzed and presented in the form of frequency tables, numerical values and percentages generated through Statistical Package for Social Science (SPSS) (Version 17) computer software. The responses are presented followed by a brief interpretation guided by the research objectives and a discussion on research findings from the analysis of the data.

4.2 Response Rate and Consistency of Measure

The research Response Reliability Rate is presented here as the researcher was interested on the extent to which the responses collected could be relied upon; and the consistency of measure for this study was done by use of Cronbach's Alpha, a reliability coefficient that indicated how well the items in the data collection instruments were positively correlated to one another (Hatcher, 1994). The study had a .931 value (93%) which is considered very strong/ high on a scale of 0.00-1.00 as it tends to 1.00 on attitudinal measurement scales. This is also far above the standard acceptable rate of 0.60 (60%) cut off value for being acceptable (Sakaran, 2001).

Table 4.1 Response Rate

	Responses		
	Responded	Non responses	Percent
Member	65	3	96%
committee members	5	0	100%
Total	70	3	96%

Table 4.1 response rate presents the response rate shows that member's responses were 96% while committee member's response rate was 100%. This was very high and considered statistically adequate

4.3 Respondents Background Information

This section presents the demographic Information and Crosstabs of Respondents Background Information against position held in the project. Cross tabulation of Gender against Position held in the project and Cross tabulation of Age against position held in the project and finally Cross tabulation between marital status and Position held in the project.

4.4 Demographic Information

This section presents the demographic information and shows the respondents Gender, Age, Marital status and Academic qualifications of the respondents.

Table: 4.2. Demographic Information

Gender	Frequency	Percent
male	35	50
female	35	50
Total	70	100
Age		
Under 20	4	6
21-30	5	7
31-40	20	27
41-50	12	17
Over 51 yrs	29	41
Total	70	100
Marital status		
single	16	23
married	54	77
Total	70	100
Academic qualifications		
'O' level	60	86
Diploma	8	11

Degree	2	3
Total	70	100.0

Table: 4.2 present the demographic information and shows that gender of the respondents was 50% male and 50% female, while on Age 41% were Over 51 yrs with 6% being Under 20yrs. Marital status of respondents shows that 77% were married with 23% being single and finally on Academic qualifications 86% were 'O' level school leavers with 3% having a degree level of education.

Table: 4.3 Cross Tabulation between position held in the Project against Gender

	Gender		
	Male	Female	Total
Member	30	35	65
committee members	5	0	5
Total	35	35	70

Table: 4.3 present the Gender of Member as 46% Male while 63% were Female; while the gender of committee members has 100% Male with no female committee members.

Table 4.4: Cross Tabulation Position Held in the Project against Age

	Age					
	Under 20	21-30	31-40	41-50	51and over	Total
Member	4	5	20	12	24	65
committee members	0	0	0	0	5	5
Total	4	5	20	12	29	70

Table: 4.4 presents the Age of respondents and shows that 37% were 51yrs and over while 6% were under 20yrs of Age, on the committee members 100% of the respondents were 51yrs and over.

Table 4.5: Cross tabulation Position held in the project against marital status

	Marital status		
	single	married	Total
Member	16	49	65
committee members	0	5	5
Total	16	54	70

Table 4.5 present the marital status of Members and shows that 75% of the respondents were married, with 25% being single in marital status. However all committee members were 100% married

Table: 4.6 Cross Tabulation Position Held in the Project against Academic Qualifications

	Academic qualifications			
	'O' level	Diploma	Degree	Total
Member	55	8	2	65
committee members	5	0	0	5
	60	8	2	70

Table: 4.6 present the Academic qualifications Members and shows that 55% had 'O' level of education, while 8% had a Diploma with those with a degree being 2%. The Academic qualifications of the committee members were 100% O' level of education.

4.5 Community participation in planning stage

This section presents the responses to the following questions that were posed to the respondents: whether respondents were involved in their community water project, whether respondent's community water project practiced any form of planning, If yes, who carries out the planning. The study also asked whether respondents were satisfied with the composition of the project management team of the community water project, and whether respondents found their community water project management team efficient in its services. The section also presents the Descriptive Statistics on Community Participation in Planning Stage.

Table 4.7 Community Participation in Planning Stage

Are you involved in your community water project	Frequency	Percent
Yes	68	97
No	2	3
Total	70	100
Does your community water project practice any form of planning		
Yes	65	93
No	5	7
Total	70	100
If yes, who carries out the planning		
Management Committee	16	23
The Management And The Community	49	70
Total	65	100

Are you satisfied with the composition of the project management team of the community water project	Frequency	Percent
Yes	60	86
No	10	14
Total	70	100
Is your community water project management team efficient in its services	Frequency	Percent
Strongly Disagree	2	3
Disagree	9	13
Neutral	16	23
Agree	26	37
Strongly Agree	17	24
Total	70	100.0

Table: 4.7 present answers to the question of whether the members are involved in their community water project, 97% said yes, while 3% said no. On answers as to whether community water project practice any form of planning 93% said yes while 7% said no. Further

asked if who carries out the planning 23% said Management Committee, with 70% saying the Management and the Community. On answers to the question of whether the respondents were satisfied with the composition of the project management team of the community water project 86% said yes while 14% said no. On answers to the question of whether the community water project management team was efficient in its services, 37% were Neutral while 3 % said strongly disagree and 24% Strongly Agreed that the community water project management team was efficient in its services.

Table : 4.8 Descriptive Statistics Community Participation In Planning Stage

	Likert scale					N	Mean	Std. Deviation
	Very much (5)	Much (4)	Not sure (3)	Not muc h(2)	Not at all (1)			
To what extent do Information sharing influence the sustainability of the community water project	24	39	1	6	0	70	1.8429	0.82770
To what extent do the nature of Consultation influence the sustainability of the community water project	21	36	1	12	0	70	2.0571	1.00557
To what extent do Decision making process influence the sustainability of the community water project	26	25	1	18	0	70	2.1571	1.18732
Average							**2.02**	**1.0063**

Table 4.8 Presents descriptive Statistics on the influence of Community Participation in Planning Stage on sustainability of community based water projects in Kenya and shows this has a Mean average of 2.02 on a 5 point Likert scale, which is 40% and a Std. Deviation of 1.0063, which is above 1.00 reflecting a high disparity between respondents opinion on influence of Community Participation in Planning Stage on the sustainability of community based water projects.

4.6 Community Participation in Implementation Stage

This section presents the frequency on Community Participation in Implementation Stage and presents the answers to the questions; whether the respondents were satisfied with the implementation decision making process used, and how would they rate the flow of implementation information between the management and the community. It also presents answers to the questions on whether community was wholly involved in the implementation stage of the laid out plans. And how they would rate the implementation of the plans made to ensure sustainable technical sustainability of the services, or in what ways the community participates in the implementation stage. The section also presents the Descriptive Statistics of Community Participation in Implementation Stage

Table: 4.9 Community Participation in implementation stage

Are you satisfied with the implementation decision making process used	Frequency	Percent
yes	62	87
No	8	11
Total	70	100.0
How would you rate the flow of implementation information between the management and the community		
very good	22	31
Good	44	63
Not sure	2	3
not good	2	3
Total	70	100
Is the community wholly involved in the implementation stage of the laid out plans		
yes	61	87
No	9	13
Total	70	100
How would you rate the implementation of the plans made to ensure sustainable technical sustainability of the services		
very good	14	20

Good	47	67
Not sure	9	13
Total	70	100.0
In what ways does the community participate in the implementation stage	Frequency	Percent
provision of labour	55	77
cost sharing	13	17
provision of other implementation resources	2	3
Total	70	100.0

Table 4.9 Gives Descriptive Statistics on the frequency of Community Participation in Implementation Stage and presents the Community Participation in implementation Stage on answers to the question of whether the respondents were satisfied with the implementation decision making process used, 87% said yes and 11% answered No, on how respondents would rate the flow of implementation information between the management and the community 63% said Good while 3% said not good. Asked whether the community was wholly involved in the implementation stage of the laid out plans 87% said yes while 13% said no. On how the respondents would rate the implementation of the plans made to ensure sustainable technical sustainability of the services 67% said it was good, while 20% said it was very good. On questions of in what ways the community participated in the implementation stage 77% said through provision of labour while 17% said through cost sharing they did Community Participation in Implementation Stage.

Table: 4.10 Descriptive Statistics: Community Participation in Implementation Stage

	Likert scale					N	Mean	Std. Deviation
	Very much (5)	Much (4)	Not sure (3)	Not much(2)	Not at all (1)			
To what extent do Sharing of implementation costs influence the sustainability of the community water project	20	38	12	0	0	70	2.06	.99106
To what extent do the Provision of implementation labour influence the sustainability of the community water project	35	27	8	0	0	70	1.73	0.94672
To what extent do Sharing of implementation resources influence the sustainability of the community water project	19	35	1	13	12	70	2.20	1.12417
Average							**1.997**	**1.021**

Table: 4.10 Present Descriptive Statistics on the influence of Community Participation in Implementation Stage and has a Mean average of 1.997on a 5 point Likert scale, which is 40% and a Std. Deviation of 1.021, reflecting a high disparity between respondents opinion on influence of Community Participation in Implementation Stage on sustainability of community based water projects.

4.7 Community Participation in Maintenance Stage

This section presents responses on how respondents rate the flow of maintenance information between the management and the community, it also inquires if the maintenance of the water project ensure uninterrupted supply of clean water. It presents answers on what ways are the stakeholders of the water project involved in the maintenance of the water project and finally on

how they rate the maintenance of the plans made to ensure sustainable technical sustainability of the services. The section also presents Descriptive Statistics on Community Participation in Maintenance Stage

Table 4.11 Community Participation in Maintenance Stage

How would you rate the flow of maintenance information between the management and the community	Frequency	Percent
very good	35	50
good	35	50
Total	70	100
Does the maintenance of the water project ensure uninterrupted supply of clean water		
yes	56	80
No	14	20
Total	70	100
In what ways are the stakeholders of the water project involved in the maintenance of the water project		
provision of the maintenance resources	27	37
availing maintenance cost	11	16
involvement in the maintenance process	32	46
Total	70	100
How would you rate the maintenance of the plans made to ensure sustainable technical sustainability of the services		
very good	13	19
good	48	60
neutral	9	13
Total	70	100.0

Table 4.11 present the Community Participation in Maintenance Stage on how they rate the flow of maintenance information between the management and the community, 50% said very good, and 50% said good. On whether maintenance of the water project ensure uninterrupted supply of

clean water, 80% said yes while 20% said no. On the question of what ways are the stakeholders of the water project involved in the maintenance of the water project provision of the maintenance resources, 37% said availing maintenance cost 16%, while 46% said through involvement in the maintenance process. On how they would rate the maintenance of the plans made to ensure sustainable technical sustainability of the services, 19% said this was very good while 60% saying it was good and 13% were neutral.

Table 4.12 Descriptive Statistics on Community Participation in Maintenance Stage

	Likert scale					N	Mean	Std. Deviation
	Very much (5)	Much (4)	Not sure (3)	Not much (2)	Not at all (1)			
To what extent does Sharing of maintenance costs influence the sustainability of the community water project	22	38	2	6	2	70	1.9714	0.97760
To what extent does the Provision of maintenance labour influence the sustainability of the community water project	32	26	12	0	0	70	1.8857	1.07059
To what extent does Sharing of maintenance resources influence the sustainability of the community water project	25	23	1	19	2	70	2.2857	1.28698
Average							**0.7619**	**0.429**

Table 4.12 Present Descriptive Statistics on the influence of Community Participation in maintenance Stage and has a Mean average of 0.7619 on a 5 point Likert scale, which is 15% and a Std. Deviation of 0.429, which is below 1.00 reflecting a common opinion on influence of Community Participation in Maintenance Stage on sustainability of community based water projects.

4.8 Community Participation in Evaluation Stage

This section presents the responses on questions; how respondents would rate the flow of evaluation information between the management and the community, how the evaluation of the water project ensure uninterrupted supply of clean water, on what ways are the stakeholders of the water project involved in the evaluation of the water project and how they would rate the evaluation of the plans made to ensure sustainable technical sustainability of the services. The section also presents descriptive Statistics on Community participation in evaluation stage.

Table 4.13 Community Participation in Evaluation Stage

How would you rate the flow of evaluation information between the management and the community	Frequency	Percent
very good	20	27
good	48	69
not good	2	3
Total	70	100
Does the evaluation of the water project ensure uninterrupted supply of clean water		
yes	52	74
No	18	26
Total	70	100
In what ways are the stakeholders of the water project involved in the evaluation of the water project		
provision of the evaluation resources	24	34
availing of evaluation cost	15	21
involvement in the evaluation process	31	44
Total	70	100
How would you rate the evaluation of the plans made to ensure sustainable technical sustainability of the services	Frequency	Percent
very good	15	21
good	46	66
neutral	7	10
not good at all	2	3
Total	70	100

Table 4.13 Present responses on community participation in evaluation stage, how they would rate the flow of evaluation information between the management and the community, 27% said very good, 69% said Good while 3% Not good. When asked whether the evaluation of the water project ensure uninterrupted supply of clean water 74% said yes while 26% said no. In what ways the stakeholders of the water project were involved in the evaluation of the water project 34% said Provision of the evaluation resources, 21% said availing of evaluation cost and 44%

said Involvement in the evaluation process. When asked how they would rate the evaluation of the plans made to ensure sustainable technical sustainability of the services 21% said very good, 66% said Good, 10% were neutral while 3% said not good at all.

Table 4.14 Descriptive Statistics on Community participation in evaluation stage

Descriptive Statistics	Likert scale					N	Mean	Std. Deviation
	Very much (5)	Much (4)	Not sure (3)	Not much(2)	Not at all (1)			
To what extent do Setting of evaluation objectives influence the sustainability of the community water project	18	44	8	0	0	70	1.9714	0.85077
To what extent do Evaluation of Indicators influence the sustainability of the community water project	15	37	3	15	0	70	2.2571	1.03119
To what extent do Evaluation of control measures influence the sustainability of the community water project	20	41	1	8	0	70	1.9572.	0.87536
Average							**2.063**	**2.75732**

Table 4.14 Present the Influence of Community participation in evaluation stage and has a Mean average of 2.063 on a 5 point Likert scale, which is 41% and a Std. Deviation of 2.76, which is above 1.00 reflecting a high diversity of opinion on influence Community participation in evaluation stage on sustainability of community based water projects.

4.9 Inferential Statistics Spearman's rho

Table 4.15: Inferential Statistics Spearman's rho

Spearman's rho		Sustainability of Community Based Water Projects	Community participation in planning stage	Community participation in implementation stage	Community participation in maintenance stage	Community participation in evaluation stage
Sustainability of Community Based Water Projects	Correlation Coefficient	1.000	.420	.441	.297	.334
	Sig. (1-tailed)	.	.000	.000	.006	.002
	N	70	70	70	70	70
Community participation in planning stage	Correlation Coefficient	.420	1.000	.479	.642	.376
	Sig. (1-tailed)	.000	.	.000	.000	.001
	N	70	70	70	70	70
Community participation in implementation stage	Correlation Coefficient	.441	.479	1.000	.598	.605
	Sig. (1-tailed)	.000	.000	.	.000	.000
	N	70	70	70	70	70
Community participation in maintenance stage	Correlation Coefficient	.297	.642	.598	1.000	.601
	Sig. (1-tailed)	.006	.000	.000	.	.000
	N	70	70	70	70	70
Community participation in evaluation stage	Correlation Coefficient	.334	.376	.605	.601	1.000
	Sig. (1-tailed)	.002	.001	.000	.000	.
	N	70	70	70	70	70

Table 4.15 presents the inferential statistical results of Community Participation and Sustainability of Community Based Water Projects. The use of spearman's rank order correlation to determine the coefficient of relationship was adopted as the responses were at nominal and ordinal level of measurement. The table shows the correlation of Sustainability of Community Based Water Projects which is the dependent variable against the independents variables of Community participation in planning stage of the community water project, Community participation in implementation stage of the community water project, Community participation

in maintenance stage of the community water project and Community participation in evaluation stage of the community water project.

4.9.1 Influence of Community participation in planning stage on Sustainability of Community Based Water Projects

The Influence of Community participation in planning stage on Sustainability of Community Based Water Projects has spearman's' Correlation index of 0.420. It falls between +0.400 to + 0.600 which means that Community participation in planning stage of the community water project have moderate influence on Sustainability of Community Based Water Projects . The interpretation of correlation co-efficient shows that Community participation in planning stage has influence on Sustainability of Community Based Water Projects because the P value was .000 or P< 0.05 which means that Community participation in planning stage has a significant influence on Sustainability of Community Based Water Projects.

4.9.2 Influence of Community participation in implementation stage on Sustainability of Community Based Water Projects

Influence of Community participation in implementation stage on Sustainability of Community Based Water Projects has spearman's' Correlation index of 0.441. It falls between +0.400 to + 0.600 which means that the Influence of Community participation in implementation stage on Sustainability of Community Based Water Projects is moderate. The interpretation of correlation co-efficient shows that Community participation in implementation stage has influence on the Sustainability of Community Based Water Projects because the P value was .000 or P< 0.05 which means Community participation in implementation stage has a significant influence on Sustainability of Community Based Water Projects

4.9.3 Influence of Community participation in maintenance stage on Sustainability of Community Based Water Projects

The influence of Community participation in maintenance stage on Sustainability of Community Based Water Projects has a Correlation index of .297. It falls between +0.200 to + 0.400 which means that Community participation in maintenance stage has slight significance on Sustainability of Community Based Water Projects. The interpretation of correlation co-efficient shows that Community participation in maintenance stage has no influence on Sustainability of Community Based Water Projects because the P value was .006 or P> 0.05 which means that

C**o**mmunity participation in maintenance stage of the community water project has no influence on Sustainability of Community Based Water Projects

4.9.4 Influence of Community participation in evaluation stage on the Sustainability of Community Based Water Projects.

Influence of Community participation in evaluation stage on Sustainability of Community Based Water Projects has a Correlation index of .334. It falls between +0.200 to + 0.400 which means that the Community participation in evaluation stage of the community water project has slight significance on Sustainability of Community Based Water Projects. The interpretation of correlation co-efficient shows that Community participation in evaluation stage of the community water project has influence on Sustainability of Community Based Water Projects because the P value was .002 or $P < 0.05$, which means that Community participation in evaluation stage has a significant influence on Sustainability of Community Based Water Projects.

4.10 Qualitative Data Analysis

The respondents were asked if they were satisfied with the Sustainability process adopted by the project team majority said yes, while on being asked they rate the flow of Sustainability information between the management and the community, majority said it was good. However the respondents were clear on their satisfaction with decision making process used in Community participation in evaluation.

CHAPTER FIVE
SUMMARY, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter presents the summary of the research findings on the influence of community participation stages on sustainability of community based water projects in Kenya a Case of Kiabaibate in Meru County and the interpretations and conclusions. It also presents the project title with a direct link between the variables and the findings to the empirical and theoretical literature review in the study. The chapter ends with recommendations for the research and suggestions for further research to fill gaps identified as important by the researcher.

5.2 Summary of Findings

The study investigated the influence of community participation stages on sustainability of community based water projects in Kenya; specifically the Case of Kiabaibate in Meru County, the study was guided by the following objectives; to establish the influence of community participation in planning stage, community participation in implementation stage, community participation in maintenance stage and community participation in evaluation stage on Sustainability of Community Based Water Projects. The study response rate shows that member's responses were 96% while committee member's response rate was 100%. The study present the demographic information and shows that gender of the respondents was 50% male and 50% female, while on Age 41% Over 51 yrs with 6% being Under 20yrs, Marital status of respondents shows that 77% were married with 23% being single and finally on Academic qualifications 86% were 'O' level school leavers with 3% having a degree level of education. The study present the Gender of Member as 46% Male while 63% were Female; while the gender of committee members has 100% Male with no female committee members. The study presents the Age of respondents and shows that 37% were 51yrs and over while 61% were under 20yrs of Age, on the committee members 100% of the respondents were 51yrs and over

The study presents the marital status of Members and shows that 75% of the respondents were married, with 25% being single in marital status. However all committee members were 100% married. The study presents the Academic qualifications Members and shows that 55% had 'O' level of education, while 8% had a Diploma with those with a degree being 2%. The Academic qualifications of the committee members were 100% O' level of education. The study has

revealed the influence of Community Participation In Planning Stage on sustainability of community based water projects in Kenya and shows this has a Mean average of 2.02 on a 5 point likert scale, which is 40% and a Std. Deviation of 1.0063, which is above 1.00 reflecting a high disparity between respondents opinion on influence of Community Participation In Planning Stage on sustainability of community based water projects. The study has further observed the influence of Community Participation in Implementation Stage which has a Mean average of 1.997on a 5 point likert scale, which is 40% and a Std. Deviation of 1.021, reflecting a high disparity between respondents opinion on influence of Community Participation in Implementation Stage on sustainability of community based water projects.

The study presents Descriptive Statistics on the influence of Community Participation in Implementation Stage and has a Mean average of 0.7619on a 5 point likert scale, which is 15% and a Std. Deviation of 0.429, which is below 1.00 reflecting a common opinion on influence of Community Participation in Maintenance Stage on sustainability of community based water projects. The study also sights Influence of Community participation in evaluation stage and has a Mean average of 2.063 on a 5 point likert scale, which is 41% and a Std. Deviation of 2.76, which is above 1.00 reflecting a high diversity of opinion on influence of Community participation in evaluation stage on sustainability of community based water projects.

The interpretation of correlation co-efficient shows that Community participation in planning stage of the community water project has influence on Sustainability of Community Based Water Projects because the P value was .000 or $P< 0.05$ which means that Community participation in planning stage of the community water project has a significant influence on Sustainability of Community Based Water Projects

The interpretation of correlation co-efficient shows that Community participation in implementation stage of the community water project has influence on Sustainability of Community Based Water Projects because the P value was .000 or $P< 0.05$ which means Community participation in implementation stage of the community water project has a significant influence on Sustainability of Community Based Water Projects.

The interpretation of correlation co-efficient shows that Influence of Community participation in maintenance stage of the community water project on Sustainability of Community Based Water

Projects. The P value was .006 or P> 0.05 which means that Community participation in maintenance stage of the community water project has no significant influence on Sustainability of Community Based Water projects.

The interpretation of correlation co-efficient shows that Community participation in evaluation stage of the community water project has influence on Sustainability of Community Based Water Projects. The P value was .002 or P< 0.05, which means that Community participation in evaluation stage of the community water project, has a significant influence on Sustainability of Community Based Water Projects.

5.3 Discussion

The discussion is based on the findings of the study in relation to other studies conducted by other researchers, some agree others contradict.

5.3.1 Influence of Community participation in planning stage on Sustainability of Community Based Water Projects

This study agrees with Brikke (1997) who found that sustainability of project services are to be realized if water sources are not overexploited, facilities for operation and maintenance are in place, and funds are readily available. And that both women and men are involved in the designing, planning and management of the scheme, and technology choice corresponds to needs desires

5.3.2 Influence of Community participation in implementation stage on Sustainability of Community Based Water Projects

The study agrees with Claud (1998) who found that though Community Participation is essential in ensuring sustainability of rural development projects, it has its own shortcomings. Participatory planning is time consuming and a complex process. The process takes about six months or more to be understood. As a result, beneficiaries expecting to get quick results get discouraged and, that participatory planning is a threat to experts and the community they are serving.

5.3.3 Influence of Community participation in maintenance stage on Sustainability of Community Based Water Projects

The findings in this agree with Mulwa and Francis(2008) who found that some of the factors that could lead to collapse of grass root organizations, include hijacking of the project from above, heterogeneous membership that threatens harmony, limited social awareness that leads to increased vulnerability, crushed and crippled spirit as a result of poverty, non democratic political environment contradicting the process of empowerment and comprises on unity of purpose as a result of large projects that are difficult to manage.

5.3.4 Influence of Community participation in evaluation stage on Sustainability of Community Based Water Projects.

On the Influence of Community participation in evaluation stage this study agrees with David and Brikke, (1995) who found that benefits for the water supply should continue to be realized over a prolonged period of time far after the summative evaluation.

5.4 Conclusions

From the findings of this study and the summary, the study concludes that, since community participation in planning stage of the community water project has a significant influence on Sustainability of Community Based Water Projects, it implies that the water committees, donors and the government officials in the ministry of water hold prior consultations with the community members before the water projects are deliberated, more so community members are involved in decision making when designing the project structure, location of water standpoints, determining the source of water among other key issues.

The study further concludes that, since Community participation in implementation stage of the community water project has a significant influence on Sustainability of Community Based Water Projects, this can be attributed to the locally based administrative structures developed by the water committee and the members which has enhanced Sharing of implementation costs**,** Provision of implementation labour, and sharing of implementation resources.

The study also concludes that, Community participation in evaluation stage of the community water project has a significant influence on Sustainability of Community Based Water Projects,

which can be accredited to the members' involvement in setting of evaluation objectives, evaluation of Indicators and evaluation of control measures.

The study however concludes that, since Community participation in maintenance stage of the community water project has no significant influence on Sustainability of Community Based Water Projects, it suggests that sharing of maintenance costs provision of maintenance labour and sharing of maintenance resources may be not be the appropriate approach to community participation during that maintenance stage of a community water project

5.5. Recommendations

Having established that Community participation in planning stage of the community water project has an influence on Sustainability of Community Based Water Projects, this study therefore recommends that the community water projects should hold capacity building sessions for the members and the committee members so as to equip them with appropriate knowledge concerning the designing and development of community water projects. This will enable the members to make suitable contributions to the project design.

Having found that Community participation in implementation stage of the community water project has an influence on Sustainability of Community Based Water Projects, the study further recommends strict adherence to members sharing of implementation costs**,** provision of implementation labour, and sharing of implementation resources. More so the study recommends that the committee members should be accountable and transparent to the project members to maintain the good will of the members to continuously participate in the provision of implementation resources.

Having established that Community participation in evaluation stage of the community water project has a significant influence on Sustainability of Community Based Water Projects, the study also recommends that the committee members should convene public meetings to track the progress of the project through the monitoring and evaluation measures put in place.

Having found that C**o**mmunity participation in maintenance stage of the community water project has no influence on Sustainability of Community Based Water Projects, the study therefore recommends that community water projects should explore other approaches of

community participation in maintenance stage other than sharing of maintenance costs, provision of maintenance labour and sharing of maintenance resources.

5.6 Room for Further Study

The study concludes that, since Community participation in maintenance stage of the community water project has no influence on Sustainability of Community Based Water Projects further studies should be conducted to establish as to why this is so.

A further study should also be carried out to find out other approaches to community participation at maintenance level which can have a significant influence on the sustainability of the community based water projects.

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APPPENDICES

Appendix I: Letter of Transmittal

MUTUA DAVID

P.O. BOX 506-60200

DATE:……..

TO:…….

Dear Sir/Madam,

RE: LETTER OF TRANSMITTAL OF DATA COLLECTION INSTRUMENTS

This is to inform you that I am carrying out a research that will lead to the award of Master of Arts Degree in Project Planning and Management of the University of Nairobi. The focus of the study is on the influence of community participation on the sustainability of community based water projects in Kenya with specific reference to Kiabaibate water project.

Once successfully complete, the results will offer lessons to the implementation of community based projects and more significantly, the community based water projects. Equally, the findings will help Governments, Donors and project management teams in developing appropriate designs in the light of the focus on community development approach. All information provided will be strictly handled with confidentiality.

Find a copy of the questionnaire attached which requires you to provide information by filling it in. Kindly be honest and objective and do not write your name anywhere in the questionnaire.

Kindly cooperate with my research assistance when filling in this questionnaire.

Yours Faithfully,

David Mutua

L50/71985/2011

Appendix II: Questionnaire for Community Water Project

Please Tick (√) Your Response

Section A: Demographic Information.

1. Gender
   a. Male ☐
   b. Female ☐

2. Age
   a. Under 20 ☐
   b. 21-30 ☐
   c. 31-40 ☐
   d. 41-50 ☐
   e. 50 and above ☐

3. Marital status
   a. Single ☐
   b. Married ☐

4. Academic qualifications
   a. `O` Level ☐
   b. Diploma ☐
   c. Degree ☐

Section B: Community participation in planning stage

5. Are you involved in your community water project?
   a. Yes ☐
   b. No ☐

6. Does your community water project practice any form of planning?
   a. Yes ☐
   b. No ☐

7. If yes, who carries out the planning?
   a. Management committee ☐
   b. Outsourced experts ☐
   c. The management together with the community. ☐

d. Stakeholders ☐

8. Are you satisfied with the composition of the project management team of the community water project?

   Yes ☐ No ☐

9. Is your community water project management team efficient in its services?

   a. Strongly disagree ☐
   b. Disagree ☐
   c. Neutral ☐
   d. Agree ☐
   e. Strongly agree ☐

10. To what extent do the following planning activities influence the sustainability of the community water project?

Activity	Very Much	Much	Not sure	Not Much	Not at all
Information sharing					
Nature of Consultation					
Decision making process					

Section C: Community Participation in Implementation Stage

11. Are you satisfied with the implementation decision making process used?

   a. Yes ☐
   b. No ☐

12. How would you rate the flow of implementation information between the management and the community?

   a. Very good ☐
   b. Good ☐
   c. Not sure ☐

d. Not good ☐

13. Is the community wholly involved in the implementation stage of the laid out plans?
a. Yes ☐
b. No ☐

14. How would you rate the implementation of the plans made to ensure sustainable technical sustainability of the services?
a. Very good ☐
b. Good ☐
c. Neutral ☐
d. Not good at all. ☐

15. In what ways does the community participate in the implementation stage?
a. Provision of labour ☐
b. Cost sharing ☐
c. Provision of other implementation resources ☐

16. To what extent do the following implementation activities influence the sustainability of the community water project?

Activity	Very Much	Much	Not sure	Not Much	Not at all
Sharing of implementation costs					
Provision of implementation labour					
Sharing of implementation resources					

Section D: Community Participation in Maintenance Stage

17. Are you satisfied with the maintenance decision making process used?
a. Yes ☐
b. No ☐

18. How would you rate the flow of maintenance information between the management and the community?

a. Very good ☐

b. Good ☐

c. Not sure ☐

d. Not good ☐

19. Does the maintenance of the water project ensure uninterrupted supply of clean water?

a. Yes ☐

b. No ☐

20. In what ways are the stakeholders of the water project involved in the maintenance of the water project?

a. Provision of the maintenance resources ☐

b. Availing maintenance costs ☐

c. Involvement in the maintenance process ☐

21. How would you rate the maintenance of the plans made to ensure sustainable technical sustainability of the services?

a. Very good ☐

b. Good ☐

c. Neutral ☐

d. Not good at all. ☐

22. To what extent do the following implementation activities influence the sustainability of the community water project?

Activity	Very Much	Much	Not sure	Not Much	Not at all
Sharing of maintenance costs					
Provision of maintenance labour					
Sharing of maintenance resources					

Section D: Community participation in evaluation stage

23. Are you satisfied with the evaluation decision making process used?
    a. Yes ☐
    b. No ☐
24. How would you rate the flow of evaluation information between the management and the community?
    a. Very good ☐
    b. Good ☐
    c. Not sure ☐
    d. Not good ☐

25. Does the evaluation of the water project ensure uninterrupted supply of clean water?
    a. Yes ☐
    b. No ☐

26. In what ways are the stakeholders of the water project involved in the evaluation of the water project?
    a. Provision of the evaluation resources ☐
    b. Availing of evaluation costs ☐
    c. Involvement in the evaluation process ☐

27. How would you rate the evaluation of the plans made to ensure sustainable technical sustainability of the services?

    a. Very good ☐
    b. Good ☐
    c. Neutral ☐
    d. Not good at all. ☐

28. To what extent do the following evaluation activities influence the sustainability of the community water project?

Activity	Very	Much	Not sure	Not	Not at all

	Much			Much	
Setting of evaluation objectives					
Evaluation of Indicators					
Evaluation of control measures					

Section F: Sustainability of Community Based Water Projects

29. Are you satisfied with the Sustainability process used by the project team?

a. Yes ☐

b. No ☐

30. How would you rate the flow of Sustainability information between the management and the community?

a. Very good ☐

b. Good ☐

c. Not sure ☐

d. Not good ☐

31. To what extent do the following Sustainability aspects influence the sustainability of the community water project

Activity	Very Much	Much	Not sure	Not Much	Not at all
Community participation in planning stage					
Community participation in implementation stage					
Community participation in maintenance stage.					
Community participation in evaluation stage					

Thanks for your co-operation and time.

Appendix III: Budget

ITEM	ACTIVITY	QUANTITY	UNITY OF MEASURE	UNIT COST (KSH.)	TOTAL (KSH.)
Proposal Writing	Typesetting, Printing and Photocopies	6 Copies of the proposal	Copies Printed	500	3,000
Literature Review	Transport Costs to Libraries and Resource Centers	2 Days a Week for 3 Months	No of Trips	500	12,000
Literature Review	Communication via Internet and Phone calls	2,500 Per Month for 3 Months	Airtime Used	2,500	7,500
Pre –Testing The Instruments	Typesetting, Printing and Photocopies	6 Copies of the Questionnaire	Copies Printed	150	900
Final Copy of Proposal	Production of the Proposal	6 Copies of the Proposal	Copies Printed	600	3,600
Pre-Testing	Transport to the Field	2000 Per day for 3 days	Distance Covered	2000	6000
Data Collection	Production of Questionnaires	200 Questionnaires	Copies Printed	150	30,000
Data Collection	Transport to the Field	10 Days	Trips Made	2000	20,000
TOTAL COST					**83,000**

Appendix IV: Work Plan

ACTIVITY	IMPLEMENTED BY	DATE
Pre-Testing the Instruments	Researcher	17th-18th March 2014
Data Collection	Researcher	7th – 27th April 2014
Data Analysis and Interpretations	Researcher and Research Assistant	28th-30th April 2014
Writing the Summary of the Findings, Conclusions and Recommendations	Researcher	1st – 2nd May 2014