

**INFLUENCE OF COMMUNITY PARTICIPATION ON THE
MANAGEMENT OF WATER PROJECTS IN PUBLIC PRIMARY
SCHOOLS IN SOTIK SUB-COUNTY, KENYA**

BY

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DECLARATION

This research project report is my original work and has never been presented for a degree or any award in any other university .

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

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DEDICATION

I dedicate this research project to my dear husband- Joseph Kilel, my loving children, Chepkoech Vilarine, Brian Kipkirui, Hildaberta Cherotich and Aquinas Kipchumba for their support and encouragement throughout my studies.

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LIST OF ABBREVIATIONS

BOM:	Board of Management
CP:	Community Participation
JMP:	Joint monitoring program
LGDP:	Local government department program
LATF:	Local Authority Transfer Fund
MASAF:	Malawi Social Action Fund
M&E:	Monitoring and Evaluation
MDG:	Millenium Development Goal
NAP-SMLWR:	National Action Plan for Suitable Management of Land and Water Resources
NGOs:	Non Governmental Organizations
NACOSTI:	National Council of Science Technology and Innovation
O&M:	Operation and Maintenance
PTA:	Parents Teachers Association
UN:	United Nation
WHO:	World Health Organization

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ABSTRACT

The purpose of the study was to investigate the influence of community participation on management of water projects in public primary schools in Sotik Sub-county. The Government of Kenya and Non-Governmental Organizations have implemented many projects aimed at addressing the water crisis in Kenyan Schools; however most of these projects have been characterized with low level of Sustainability. In Kenya most water projects have performed dismally and most becoming un-operational and requiring rehabilitation. This is due to low level of community ownership of these water projects. The study will be guided by four objectives: to examine the extent to which community participation in planning, capacity building, fundraising and water management committees influences management of water projects in public primary schools in Sotik Sub County. The study was guided by Arnstein (1969) theory of community participation. The study employed a descriptive survey research design. By employing this study design, both quantitative and qualitative data from a target population of 972 people consisting of head teachers, BOM chairpersons and PTA chairpersons since they are involved directly in implementation of water projects. Krejcie and Morgan's (1970) table was used to obtain a sample size of 278 respondents. Simple random sampling technique and purposive sampling were used to obtain the samples that responded to both questionnaire and interview schedule. The data was cleaned, edited and coded. Quantitative analysis was done using statistical packages (SPSS V 17) and qualitative data was analyzed thematically and the findings presented in form of percentages and tables. The study revealed that high level planning for water management is moderately done in schools. It also revealed that monitoring and evaluation was necessary to project success and its sustainability. Moreover, experienced experts were contracted to carry out project implementation. The respondents also agreed that they undergo regular training on ways of managing water projects in Schools. Sourcing of funds to implement water projects in Schools was found to be a challenge since most schools did not have funds at all. Based on the findings, it was concluded planning process is key to project success. The school managers should make decisions on implementation of water projects in schools. In addition, capacity building was proven to be empowering members with skills and experiences pertaining project implementation. Despite finance being a major factor in water management projects, most schools in Sotik Sub County had a challenge in raising funds. It was recommended that schools need to implement water projects in schools as this goes a long way in improving performance of the learners. The government should provide financial support to Schools to aid in implementation of water projects.

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

Water is a natural resource that is necessary for sustenance of life, ecological systems and key resource to social and economic development. Governments, Non-governmental organizations, local and international organizations from all over the world have and still continue implementing water projects to promote safe rural water supply and sanitation. However in most project areas lack of sustainability of water infrastructures and water supply systems as most communities don't own the projects (Harvey & Reed, 2007). According to the World Health Organization (2005), 2.2 million people in developing countries, most of them children, die every year from diseases associated with lack of safe drinking, sanitation and hygiene. Improvements in these services could reduce mortality rates due to diarrheal diseases by an estimated 65% and related morbidity by 26% (WHO, 2004). In addition, the United Nations Millennium Goals (UN, 2004) specifically targeted water and sanitation measures, and the United Nations General Assembly proclaimed the years 2005 to 2015 as the International Decade for Action 'Water for Life'.

Chikati (2009) explains that over the past ten years, both in Europe and developing countries; failure rate for projects to achieve their stated objectives is extremely high, at 60% in some cases. Some of these projects have gone to full implementation but without much benefit to the communities others proved to be unsustainable while some prematurely terminated. They lacked proper financial accountability, stakeholder involvement in all the project phases, adequate skills and empowerment of the communities' involved and poor M & E framework (Summer 2001). Further, Matsumura (2008) conducted a study on causes of poor performance in World Bank Water and Sanitation projects in USA and found that most projects were overscheduled and under cost, and a small portion of projects performed poorly in terms of objectives set during project initiation phase, institutional development, and sustainability.

Gleitsmann (2005) posited that contribution of more time and resources to the protection, operation and maintenance of rural water supply is a key action towards achieving sustainability

of water supply infrastructures. According to Harvey and Reed (2007), community involvement strongly influences the sustainability of projects.

Nyaguthii and Oyugi (2013) established that most community members in Mwea SubCounty do not participate in management of Community Development water projects during the initiation phase, leading to failure before execution phase. Similarly, Joseph (2013) established that majority of the constituency development funded water projects in Molo sub-county face inefficient fund management practices in their operations. These findings are congruent with those of Philip and Abdillahi (2003) on the role of popular participation and community work ethic in rural development during the initiation phase.

Global population increase continues to create new challenges on the management of natural resources. Studies by Chitonge (2014), Hopewell and Graham (2014) and Gleick (2014) suggest that in the coming years the challenge will be phenomenal in emerging cities in Africa. It is projected that the urban population growth on the continent will double between 2000 and 2030 (Alabaster, 2010). The growth will be more pronounced in cities where the population is below one million with the majority of the inhabitants living below the poverty line (Torres, 2012; Van der Bruggen et al, 2010). Three factors at the root of this unprecedented growth include natural increase, reclassification of rural areas as urban centers, and most importantly, rural-urban migration (Chitonge, 2014; Hardoy et al, 2014; Satterthwaite, 2014). The daunting task facing local authorities is how to adequately supply clean potable water to the predominantly poverty stricken urban dwellers (Bakker et al, 2008).

Water is a natural resource that is necessary for sustenance of life, ecological systems and key resource to social and economic development. Governments, Non-governmental organizations, local and international organizations from all over the world have implemented water projects to promote safe rural water supply and sanitation over the years. However in most project areas there is lack of sustainability of these water infrastructures and water supply systems as most of the communities don't own the projects (Harvey and Reed, 2007).

Recent figures of operational failure rates from different African countries range from to 60% (Sutton, 2005). In Kenya it's a common phenomenon to observe non-functional water systems just a few years after implementation e.g. lack of adequate protection such as fencing of water

pans, vandalism of solar pumping systems for boreholes, non-operational shallow well hand pumps and wind mills. The main issue in water supply in developing countries is gauging the willingness of community members to manage their water sources and infrastructures through contribution of time and resources. Contribution of more time and resources to the protection, operation and maintenance of rural water supply is a key action towards achieving sustainability of water supply infrastructures (Gleitsmann, 2005). According to Harvey and Reed (2007) community involvement strongly influences the sustainability of projects.

Community members' contribution might take the form of labour, money, material, equipment, participation in decision making, and expression of demand for water, selection of the technology and project site, and selection of management structures within the community (Harvey and Reed, 2007). It is estimated that 41 per cent of the Kenyan population lives without access to safe drinking water, relying on unprotected wells, springs or informal water providers. 69 per cent of the total populations do not have access to basic sanitation. Kenya's population is projected to grow for the next few decades. Given these realities, Kenya will also need to tackle issues related to water crisis (UNICEF/WHO, 2010).

Globally, water supply systems play a very significant role in enabling communities 'access water for their domestic use. According to WHO report (2012) about 1.1 billion people globally do not have access to improved water supply because water projects are not sustainable. Since so many people are not having access to safe drinking water, sustainability becomes more and more important. Water supply sustainability requires meeting our water needs (i.e. drinking, irrigation, industrial, recreation and energy) upon which economic development depends, while protecting the environment and improving social conditions (Ioris, Hunter, & Walker, 2008).

Millennium Development Goal (MDG) Summit Report (2010) indicated that there is progress on the MDG 7 target to reduce by half the proportion of people without sustainable access to safe drinking water by 2015. In developing countries, most national governments, local and international NGOs invest substantial amount of funds every year in the implementation of rural water supply projects. However, the constructions of the water projects do not benefit the target communities since they cease to function well after a short time after completion. It is estimated that only two out of three hand pumps installed in developing countries are functioning at any

given time (Rural Water Supply Network, RWSN, 2010). This challenge of rural water supply system sustainability is likely to impact negatively on the progress towards achieving the MDG 7 target.

Experts have proposed varied management mechanisms targeted at improving access to water in the developing world (Ghai et al 2014; Gleick, 2000; 2003; Mitchel, 2005; Pahl-Wostl,2007; World Bank, 1993; 2004). The most notable among the suggested models is the *demand responsive approach* as opposed to the *traditional supply driven interventions* (Naiga et al, 2012;Nicole, 2000; World Bank, 1998). The demand-responsive approach was popularized in Africa in the 1990s by major development organizations such as the World Bank.

The concept is anchored in the idea of Community Participation (CP) which advocates greater beneficiary involvement in water service production and management (Whittington et al, 2009). It includes beneficiaries taking the initiative to demand improved water services while at the same time taking a leading role in project design, implementation, development and sustainability. The demand-responsive approach requires beneficiaries to own the system by constantly making meaningful contributions either in the form of cash or labor to community-based water projects (Sara & Katz, 1998). It is premised on the belief that such involvement ultimately leads to better designed projects, better targeted benefits and more cost-effective and timely delivery of water.

1.2. Statement of the Problem

Sustainability of rural community water supplies continues to remain a challenge for both donors and the government with the value for investment involved being hard to realize. Efforts have been made to address this issue but with very minimal success leaving one to wonder whether the problem lies with the government, donor or the community. Water is not only important for public health, but also for general livelihoods. Crop production, livestock production, industry, commerce and daily life depend on sustainable water. Water supply therefore affects health, hunger, poverty and community development which in turn affects the social and economic development of individuals and Nations and the world as a whole.

In Kenya, most water projects implemented in the rural areas to address water accessibility and scarcity are non-operational. The failure rate for most water development projects in Africa lie

anywhere from 30 to 60%. According to existing studies, 55% of all the rural water supply projects in Tanzania, Uganda and Kenya are nonoperational. Various factors have been attributed to this failure: lack of demand of the project by the beneficiary community, high recurrent costs, neglect of the water facilities especially on operation and maintenance, use of inappropriate technology, locating of water points far from the community and lack of proper training. Further, community involvement; type of technology, distance, governance structures and training have been found greatly impact community

Community water supplies in both developing and developed countries are more frequently associated with outbreaks of waterborne disease. Most of the public primary schools in Sotik Sub-county do not have access to clean drinking water. They rely mostly on water fetched from the dams which is prone to a lot of contamination. This poses risk to the life of children which translates to poor performance in schools as a result of absenteeism. There is an urgent need to investigate the influence of community participation on the management of water projects in public primary schools in Sotik Sub-county.

1.3. Purpose of the Study

This research study sought to establish the influence of Community participation on the management of water projects in public primary schools in Sotik Sub-county, Bomet County, Kenya.

1.4. Objectives of the Study

This research study was guided by the following objectives:

- i. To assess the extent to which community participation in planning process influence management of water projects in public primary Schools in Sotik Sub-county
- ii. To determine the extent to which community participation in capacity building influence management of water projects in public primary schools in Sotik Sub-county
- iii. To ascertain the extent to which community participation in fundraising influence management of water projects in public primary schools in Sotik Sub-county

- iv. To establish the extent to which water management committees influence management of water projects in public primary schools in Sotik Sub-county

1.5 Research Questions

The research was guided by the following research questions:

- i. To what extent does the community participation in planning process influence management of water projects in public primary Schools in Sotik Sub-county?
- ii. To what extent does community participation in capacity building influence provision of clean drinking water in public primary schools in Sotik sub-county?
- iii. To what extent does community participation in fundraising influence provision of clean drinking water in public primary schools?
- iv. To what extent do water management committees influence management of water projects in public primary schools in Sotik Sub-county?

1.6. Significance of the study

The study is expected to be significant to the policy makers and development agencies seeking to invest in sustainable piped water supply schemes by facilitating informed decision-making while planning and developing policies on these projects taking into consideration the paramount importance of their sustainability.

The study may be useful to leaders as well as other stakeholders such as NGOs and County Governments to make informed decisions in respect to identifying, planning, designing and implementation of water interventions in the region to enhance sustainability of these projects thus achieve value for investments made.

The study also intends to add to the existing body of knowledge for Development Agencies, Governments, Communities and Researchers, hence it will provide basis for further research on sustainability of piped water supply in Bomet County.

1.7. Delimitations of the Study

The scope of this study was designed to cover public primary Schools in Sotik Sub County.

The study was delimited only to selected variables that influence management of water projects in public primary Schools in Sotik Sub-county.

1.8. Limitations of the Study

A number of limitations that hindered the research study included poor road networks which were mitigated by use of a motor cycle to areas that were difficult to access. The other limitation included language barrier which was minimized using research assistants to interpret the questions to the respondents.

1.9 Basic Assumptions of the Study

The study assumed that those interviewed gave accurate information that would help the researcher come up with true findings. The study also assumed that the instruments used for collection of data were valid and reliable.

1.10. Definition of Significant Terms used in the study

Community: refers to a group of people living in a particular geographical area and are bound by shared beliefs, norms, values, religion or identity.

Community participation: is an approach through which beneficiaries and other stakeholders are able to influence project planning, decision-making, implementation and monitoring phases.

Water management: refers to an approach used in designing, implementation of water projects.

Planning process: process of making choices, gathering information and making informed decisions concerning provision of clean water

Capacity building: Refers to the process of empowering people so as to undertake implementation of water provision

Water management committees: They are people in charge of provision of water in schools who are elected by the community

Fundraising: refers to sourcing of resources used in implementation of water projects

1.11. Organization of the Study

The study is organized into five chapters:

Chapter one of the study give the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, delimitations of the study and definition of significant terms used in the study.

Chapter two reviews the literature related to the study from a global perspective up to the area of study. It also addresses the empirical literature related to the study based on the research objectives and summary of literature review.

Chapter three describes research methodology to be used in the study including the research design, target population, sampling procedures, data collection procedures, data analysis techniques and ethical considerations.

Chapter four covers data presentation, analysis and discussions

Chapter five gives the summary of findings, discussions, conclusions and recommendations

CHAPTER TWO

LITEATURE REVIEW

2.1. Introduction

This chapter gives the literature review related to the study. It reviews literature based on the objectives: decision-making process, capacity building, financing and monitoring and evaluation. It also gives theoretical framework, conceptual framework and summary of literature review.

2.2. The concept of Community Participation

The roots of Community Participation as an approach in social development can be traced to different cultures across the globe. This implies that the rights of people to get involved in any activity that affect their lives are upheld. Brager, Specht and Torczyner (1987) defined Community participation as a means of theoretically, intellectually or physically educating a community in order to increase their competence on issues that affect their own lives. From these two definitions participation can be viewed as a vehicle for influencing decisions that affect people's lives. It can also be viewed as a tool for transferring power to the powerless.

Building on the aforementioned definitions, Armitage (1988) describe Community Participation as a process by which individuals take action in responding to public concerns. These may include people voicing their opinions about decisions they may disagree with and living with the consequences of their choices. Mathbor (2008) suggested that Community Participation may be as simple as a response to the traditional sense of powerlessness felt by the general public about decisions emanating from authorities.

This view of community participation is shared by Njoh (2002) who noted that participation is a process which enables grassroots mobilization, which in turn, empowers the poor. Similarly, Bridgen (2004) contends that participation simply entails community involvement in and influence over the local decision making process. Within Njoh's and Bridgen's theoretical context, Community Participation is seen as an instrumental process in which communities influence and become genuine partners in development initiatives or resource mobilization.

In Africa, Njoh (2003) contends that participation had long been practiced by the indigenous communities before the arrival of the Europeans. Specifically, in a book titled *Self-helpwater*

supply in Cameroon, Njoh stated that in pre-colonial Africa, it was common for communities to join hands in local development projects. Such projects included building chiefs' palaces, market centers, erecting village bridges, or building community centers. In some cases the partnerships extended in carrying out duties such as hunting or slaughtering of animals for communal consumption. Additionally during planting and cultivation seasons, communities in Africa used to work alternately in each other's farms.

According to Macqueen (2001), a community is a group of people with diverse characteristics who are linked by social ties, share common perspectives and engage in joint action in geographical locations or settings (Macqueen, 2001). Long-term sustainability of projects is closely linked to active, informed participation by the poor. The present obstacles to people's development can and should be overcome by giving the populations concerned the full opportunity of participating in all the activities related to their development. (Munoz et al, 2008). Generally, the way community perceive the projects funded by development partners is very essential for their sustainability. When the community feels that the water projects within their locality is owned by them and not the partner, it leads to high association with projects and potential sustainability of the project. For projects to be sustainable, they must originate from the community's needs and prioritization which assures them that their opinions are valued and therefore develop positive attitudes towards the projects. Participation is a process through which stakeholders' influence and share control over development initiatives and the decisions and resources which affects them. It is a rich concept that means different things to different people in different settings. For some it is a matter of principle, for others a practice, and still for others, an end in itself.

Experience has demonstrated that people can devise their own alternatives if they are allowed to make their own decisions (Bhatnagar, 1992). Community participation by social groups, both men and women, should be in all project phases. This should be from planning, designing, constructing and managing the water supply system and in the operation and maintenance of the services. Community participation gives planners a more thorough understanding of local values, knowledge and experience, it wins support for project objectives and fosters community assistance in local implementation, and it helps resolve conflict over resource use. Community

participation occurs when a community organizes itself and takes responsibility for managing its problems. Taking responsibility includes identifying the problems, developing actions, putting them into place and following through (Advocates for Youth, unpublished data from Burkina Faso, 2001).

According to Water AID, (2009) a study which attempted to relate the degree of community participation in rural water supply projects with their subsequent effectiveness and their continuing sustainability, consistently showed that beneficiary participation was more significant than any other factor in achieving functioning water systems. Carter and Rwamwanja, (2006) argues that in cases where the best principles of community participation are taken seriously and implemented effectively then solid foundation for subsequent sustainability is provided. World Bank (2010). According to Doe & Khan, (2004) if community members are involved in planning, implementation and maintenance of their water supply system, the infrastructure can be sustained more easily.

Community contribution in any form in project development is very critical for the ownership and sustainability. Contribution may be in terms of cash, locally available materials, both skilled and unskilled labour. Gine & Perez-Foguet (2008) conclude that community participation has gained widespread acceptance as a prerequisite for sustainability; but community management has not. Achieving full and effective community participation in development activities is not easy and a lot depends on the way that field workers, extension workers or technical consultants approach the community. Most projects fail to meet their objectives because the intended beneficiaries failed to change behavior or attitudes that are critical to the projects' success. One critical factor that many costly facilities fall into disrepair has been the failure to mobilize the will of the people.

A study carried out by in Tanzania by Water-Aid to relating the degree of community participation in rural water supply project with their subsequent effectiveness and continued sustainability showed that beneficiary participation was more significant than any other factor in achieving functioning water systems (WaterAid, 2009).

In South Africa community participation was generally found to be more successful when the community was involved in all phases of the project cycle that include planning, designing,

implementing, maintaining, supervising and evaluating new water supplies(Twala, 2001). In the early 1980s, South African Communities had little say in the provision of water and decision making processes leading to failure of most projects as a result of lack of community involvement in the implementation of the cycle process.

However when community groups were involved in subsequent projects, they were done to completion with members exhibiting ownership and providing security for facilities hence sustaining them (Twala, 2001).

According to ATPS, (2007) where communities have shown significant commitment, there is significant success in the management in terms of ensuring access and sustainability of the community water resource. Okafor (2005) observed that empowering communities improve efficiency, local participation yields better projects and better outcomes; greater transparency and accountability enhances service delivery; Community participation can kick start local private contractors and service providers as well as encourage donor harmonization.

Community involvement is an arrangement in which the community and the beneficiaries at large are involved in the planning and implementation of the project and even contribute at times to the investment cost of the project either in cash or kind. This creates sense of ownership by the community and perception of the project as their own. This can create desire or willingness to engage continuously on the project which eventually ensures sustainability. The communities take a leading role and initiative to contribute to their own projects.

Communities who are beneficiaries of the projects should not be seen as targets but should be seen as assets and partners in the development process. Experience has shown that given clear rules of the game, access to information and appropriate support, communities can effectively organize to provide goods and services that meet their immediate priorities. This is because communities have considerable capacity to plan and implement programmes when empowered such as given power to decide and negotiate (Tade,2001). If communities are involved in project formulation, design and implementation, the projects are likely to be sustained, more cost effective as there is more equitable distribution of project benefit. It also leads to better designed projects (Ademola, 2008).

According to Starkey (2002), participatory user focused network can have all stakeholders work together and encouraged to collaborate and learn from each other. However for the sustainability to be achieved there must be government institutional support and the community leaders must be accountable and transparent. When local groups are actively involved in project design and implementation, they take on ownership and are more likely to continue the project when donor funding ends, compared with externally imposed projects (Ford, 1993). According to the New Nigeria (1987), if a community or group has a genuine need for a facility and works towards its establishment, such a facility would be well protected and maintained by its members because it is their sweat.

2.2.5. Community Participation Indicators

Participatory indicators are parameters used in ascertaining whether a project was implemented and/or is being operated through a participatory approach. In the community water services provisioning sector some of the major indicators which have been used to measure community participation were reviewed by Kabila (2002). Most of these indicators have featured in the work of leading CP analyst such as Awortwi (2012), Bowen (2008), Cornwall (2008), Harvey and Reed (2007), Khan and Anjum (2013), Prokopy (2005), Sara and Davis (2012), Wright (1997), Yacoob and Walker (1991) and Yohalem (1990). As outlined by Kabila (2002), such indicators include: (1) participation in decision making, (2) informed choice, (3) economic contributions, (4) representation, (4) responsibility, (5) authority, (6) control, and (7) partnership.

Participation in decision making refers to the fact that for a project to be considered as having been implemented or functioning under a CP paradigm, ideas emanating from the beneficiaries should be given preference. These include elements such as the incorporation of women's views into project implementation and operations. As Postel (1997) has argued, women are among the majority of people affected by water issues in the developing world.

Informed choice as a participatory indicator refers to the understanding that beneficiaries are adequately informed of the choices available to them. This furnishes them with the ability of managing projects upon their completion. *Economic contribution* refers to the act of beneficiaries willingly accepting to contribute money, labor, or materials to projects. Contribution can also take the form of participating in project activities such as meetings.

Representation refers to the notion that diversity within the beneficiary community should be reflected in project management teams. Elections to position of leadership should be democratic. Minorities such as women or the chronically poor should be given equal opportunity for management roles. *Responsibility* means that the community should be made aware of the burden of responsibility. They should know that the project belongs to them and its failure or success falls on their shoulders. *Authority* as an indicator means that the government and donor agencies involvement in the decision making and operational mechanisms should be minimal. Involvement of such secondary agencies should only occur if requested by the beneficiaries. Finally, *Control* means that the community should be empowered to carry out major decisions and determine their outcome. The role of the government or donor agencies should remain consultative.

2.3. Community participation in planning process and management of water projects

Rates of access to an improved water source in rural sub-Saharan Africa (SSA) are among the lowest worldwide, with approximately 1 in 2 rural dwellers, or 278 million people in total, lacking access [*Joint Monitoring Programme, 2010a*]. Low levels of access to improved water supply in developing countries have been attributed to, *inter alia*, inappropriate system designs, poor management of water resources, rent-seeking behavior, and limited institutional capacity [*Brookshire and Whittington, 1993; Downs et al., 2000; Lovei and Whittington, 1993; Pattanayak et al., 2005; Singh et al., 1993; Weiskel et al., 2007*]. In addition, communities often have considerable difficulty in sustaining operation and maintenance (O&M) of water supply infrastructure over the useful life of the hardware [*Davis et al., 2008*].

In an attempt to address this sustainability challenge, the rural water sub-sector has increasingly incorporated community participation in the planning and construction of projects in recent decades [*Davis et al., 2008; Pritchett and Woolcock, 2004*]. This shift toward participatory planning has been credited with enhanced sustainability in rural water projects worldwide [*Isham et al., 1995; Whittington et al., 2009*]. In particular, practitioners and scholars widely cite the essential role that participatory planning plays in engendering a sense of ownership for the water system among community members, which in turn ensures users' commitment to long-term operation and maintenance [*Manikutty, 1997; Republic of Mozambique, 2001; Whittington et al., 2009; Yacoob, 1990*]. Such sense of ownership, it is argued, is stimulated when users are

involved in key decisions related to the system, contribute toward the capital costs of system construction, and participate directly in planning and construction activities.

Despite wide acceptance of the idea that community participation begets a sense of ownership for water projects, evidence for this relationship is based largely on qualitative analysis from a small number of studies. Moreover, prior analyses have focused on the association between sense of ownership and a combined suite of participatory planning activities (*e.g.*, capital cost and labor contributions, decision-making, *etc.*). As such, it is not clear which types of participation are important for engendering a sense of ownership, or even how sense of ownership can be reliably measured. This study attempts to contribute to both knowledge gaps.

Pierce and others developed the *psychological ownership* construct, defined as “that state in which individuals feel as though the target of ownership (material or immaterial in nature) or a piece of it is „theirs” [Pierce *et al.*, 1991; Pierce *et al.*, 2001]. Pierce *et al.* (2001) hypothesize that the three main causal pathways for developing a sense of ownership for an object are controlling, intimately knowing, and investing oneself into it. More recently, this theory has been extended to include the potential for a shared mindset among members of a group within certain work environments, known as collective psychological ownership [Pierce and Jussila, 2010].

Empirical studies on psychological ownership have evaluated this theory largely within occupational settings in the United States. Psychological ownership has been shown to emerge within work environments that enable employees to become intimately familiar with, as well as to exert influence or control over, technologies or processes [Pierce *et al.*, 2004]. For example, physicians that had actively participated in the development of a clinical information system, and had assumed control over the new tool’s integration into their work setting, developed feelings of ownership for the technology over time [Paré *et al.*, 2005]. In turn, workers who have relatively stronger feelings of psychological ownership are more likely to exhibit job satisfaction, organization-based self-esteem, and citizenship behavior (*e.g.*, volunteering one’s time to an organization) [Van Dyne and Pierce, 2004; Vandewalle *et al.*, 1995].

The insights from the psychological ownership literature suggest that, within the realm of rural water infrastructure development, community members’ sense of ownership for their water

system could be expected to arise from their participation in its planning and construction. As such, we define community participation in rural water supply planning as the contribution of cash, land, or materials toward the construction of the system; participation in key decisions about the project, such as the level of service to be provided to households; and the contribution of labor (*e.g.*, in completing civil works) during system construction. Community members' sense of ownership for the water system is defined as households' expressed attitudes of ownership and commitment related to the infrastructure, as measured at the time of our study.

2.4. Community participation in Capacity building and management of water projects

Across the world there is a growing recognition in development that M&E of community-based development projects should be participatory. As institutions become more inclusive in project planning and implementation, then questions of the capacity of stakeholder's to measure results and defines success of community projects has become critical (Estrella, Marisol, Gaventa, John (1997)). Project capacity building is defined as process by which communities and other project stakeholders increase their capacity to perform project functions, solve problems, define and achieve project objectives and enhance sustainable development (UNDP 1997). Langran(2002)also defined capacity building as the ability of project initiators to strengthen the capacities of local communities at the periphery through resource allocation (financial, human, social and material), technical education, skill training and organizational support.

Capacity building consists of developing knowledge, skills and operational capacity so that individuals and community groups may achieve their purposes. It involves identifying root causes of poverty, empowering rights-holders to claim their rights and enabling dutybearersto meet their obligations (World Vision). Its' mandate is to provide services such as water and sanitation, health, education, roads, upgrading of informal settlements and garbage collection. Evidencebased on case studies in Australia, Canada and Thailand UNAIDS (1998) clearlyshows that local communities and other stakeholders are prepared totake leadership roles, take responsibility and devise ways of sustainingthe activities they initiate and that they are able to work in partnershipwith national governments.In the United State of America, citizen monitoring has beenone approach through which local citizens are accountable and the community (Estrella, Marisol, Gaventa, John (1997)). Devolution of resources to its local government focuses on participation of local people in financial processes, powerdynamics that influence citizen engagement in priorities, expenditureallocations and accountability relations (Agrawal 2001).

According to Elham (2008) in their analysis of factors influencing people's participation in National Action Plan for Sustainable Management of Land and Water Resources (NAP-SMLWR) in Hable-Rud Basin, Iran, recommends that a range of capacity building activities should be undertaken to increase the number of technical experts, extension workers, community facilitators and local leaders with skills needed to carry out participatory project monitoring and evaluation.

In another study of Malawi Social Action Fund (MASAF) projects, Dulani (2003) concluded that the level of stakeholders' participation in M&E was limited to being informed what had already been decided by other key players which implied passive participation by consultation.

A study carried in Tanzania by Masanyiwa and Kinyashi concluded that monitoring and evaluation of project activities is mainly done stakeholders participate mainly as respondents to provide information during monitoring and evaluation processes. Uganda has adopted a radical model of local governance, with five levels, providing multiple opportunities for participation and election, including by poor, and with reservation of seats for women, youth and disabled. However, the local Government Department Programme (LGDP) is faced by problems of participatory processes which are not as participatory as they appear on paper, and stakeholders' involvement in monitoring and evaluation of those projects remain elusive (Devans 2002).

In Kenya the Local Authority Transfer Fund (LATF) is one of the devolved funds from the Central Government to Local Authorities established in 1999 through the LATF Act No.8 of 1998, with the objective of improving service delivery, improving financial management, and reducing the outstanding debt of local authorities (LAs). However, low participation of stakeholders of Local Authorities in service delivery and management has been highlighted as one of the factors contributing to poor service delivery in the local government in Kenya (Mitullah 2005).

A study carried in Kenya by Oyugi found that LATF has not met objectives of improving service delivery, financial management and debt reduction; and that the performance of the programmes has been constrained by inadequate capacity building, lack of a coherent monitoring and evaluation framework, and politicization of the programmes. The study recommends for the amendment of LATF regulations, provision of funds for capacity building in LAs, and putting in place a coherent monitoring and evaluation framework.

The promulgation of the New Constitution in August 2010 provides a strong legal foundation for the enhancement of participatory governance through devolved structures at county level.

To engage effectively, citizens not only need an awareness of their roles and responsibilities but knowledge and skills on how to execute the responsibilities. There could be a problem in the involvement of primary stakeholders in Monitoring and Evaluation of urban water and health projects in various counties.

According to Moseti challenges facing public participation in Kenya include lack of staff skilled in participatory techniques and processes and community development departments generally have very limited resources. Participation is still often dominated by elite groups, and not all CBOs have representatives especially of the poor.

2.5. Community participation in fundraising and management of water projects

Sustainability of water supply today invariably depends upon communities taking financial responsibility for their schemes, which if achieved will enable scarce resources from government and donors to be targeted specifically on areas where there is no water supply.

Financial factors that contribute to sustainability of a water supply system include efficient revenue collection, the ability to meet the cost of operation and maintenance and the willingness to pay for the services. According to World Bank (2007) evaluation report, sustainability of water supply projects can only be ensured if tariffs generate enough resources to operate the system and replace the infrastructure after its useful life.

Financial sustainability includes among others tariff setting, revenue collection, action against payment defaulters, proper book keeping and cost recovery (WSP,2010). Finances are needed for Operation and Maintenance (O&M) to keep the system functioning.

In a review of literature on willingness to pay for water services in low income countries by Merret (2002), different factors are mentioned which contribute to low willingness to pay. These include hard economic life such that households take greatest care over their household expenditure, existence of a widely held view that certain public services should be free, politicians giving support to non-payment, poor quality of public services, corruption by government officials.

According to Cardone and Fonseca, (2003), a water system is regarded as being financially sustainable if there is a full recovery of all costs. After system construction, these costs are not only the costs for operation and maintenance but also other costs such as external government support. For a water service to be financially sustainable, the total costs should match with the total available money. More specific principles are given in the WHO training package for O&M of Rural Water Supply and Sanitation Systems (Brikke2000) .These include identifying the cost implication of the projects characteristics and the environment, maximizing the willingness to pay, clarifying financial responsibilities, optimizing O&M costs, setting an appropriate and equitable tariff structure, developing an effective financial management and organizing access to alternative financial sources.

Baumann (2006) stated that the inability of communities to collect sufficient revenue for repairs could reduce the life expectancy of installed water supplies. Most rural supplies serve poor communities. The question of whether such communities are actually able to pay for O&M of low cost technologies is often raised, but research suggests that willingness to pay is a more important issue than ability to pay (Harvey et al., 2003).

Purchase of spare parts for supply in rural water supply is one of the weak links in the quest for sustainability. According to Baumann (2000) hardly anywhere has there been satisfactory spare parts distribution. In Uganda for example, sustainability of rural areas is undermined by technical issues such as spare parts supply, mechanics and social ones that includes users' roles.

Mommen and Nekesa,(2010) argue that most users of rural water supplies are relatively poor and not able to pay for water service without external support. External support available to communities can be from NGOs, national and local government institutions, as well as the private sector (Carter, 2009). In recognizing that communities cannot autonomously manage services, Gine& Perez-Foguet (2008) call for appropriate institutional support where governments don't neglect their responsibilities to train technicians, encourage and motivate communities, as well as monitor service performance.

The cost of water supply should be such that it is affordable for the community targeted to be served. If it is costly, the target population will revert to using unimproved water sources or reduce their quantities thereby increasing the health risk. This means an adequate tariff should be set for recurrent costs.

2.6. Water Management Committees and management of water projects

Community Management is considered to be a major requirement for the success of community development interventions. Research has shown that strong leadership for community management is critical to sustainability of water projects (Batchelr, McKemey, & Scott, 2000).

Empowerment is the expansion of assets and capabilities of poor people to own, negotiate with, influence, control, and hold accountable institutions that affect their live (Narayan-Parker 2002; ibid. 2005). According to Wong and Guggenheim (2005), several communities driven development programmes have systematically introduced participatory public expenditure management of micro projects. Community representatives are tracking the implementation of thousands of micro-projects in a number of countries. Ad-hoc committees are set up and in charge of overseeing implementation. Mechanisms used include information disclosure and transparency on project budget, financing, contracting and procurement; anonymous grievance procedures; and community monitoring of contracts and implementation. This information is discussed publicly in villages and displayed.

Village committees established to oversee the project are required to report back regularly to the community. As a result community members are in a better position to influence local level planning and decision making. According to the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) Joint Monitoring Program (JMP) for Water Supply and Sanitation report (2004), at least 44% of the population in sub-Saharan Africa (some 320 million people) did not have access to clean and reliable water supplies from projects installed

Despite the failed water development projects, governments and international financial institutions continue investing hundreds of millions of dollars to keep the projects going (WB, 2006). The communities involved have not been empowered to manage and continue supporting the water projects after project closure.

Communities are able to actively participate in the whole process of acquisition and operation of the facilities by electing water management committees responsible for the management of water facilities. The communities are responsible for all operation and maintenance cost of the facilities. This implies that the sustainability of the facilities rest on the community. A water

facility bank account is required where funds raised for new investment, operation and maintenance are kept.

Kenya has a strong culture of self-help which has been harnessed for many development activities especially in the rural areas. According to a report by (World Bank, 2003) for the eight million Kenyans who had access to improved water in rural areas, 30% were served by management water supply schemes. These schemes are led by water community committee or caretakers. One challenge observed in the management of these committees is the relationship between the water committee and community that is often disrupted because of lack of communication, misunderstanding of the rules of the executive, lack of accountability of the management of the systems.

2.7. Theoretical Framework

The study is based on Arnstein's (1969) theory of community participation. Arnstein proposed a ladder of participation. He stated that participation in community activities is influenced by a number of factors which include centre of power, issues of process and capacity, group leadership, attitude that the participants have towards the project. Arnstein states that 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. Under this model, people are expected to be responsible and should, therefore, be active in decision-making.

2.8. Conceptual Framework

Independent variables

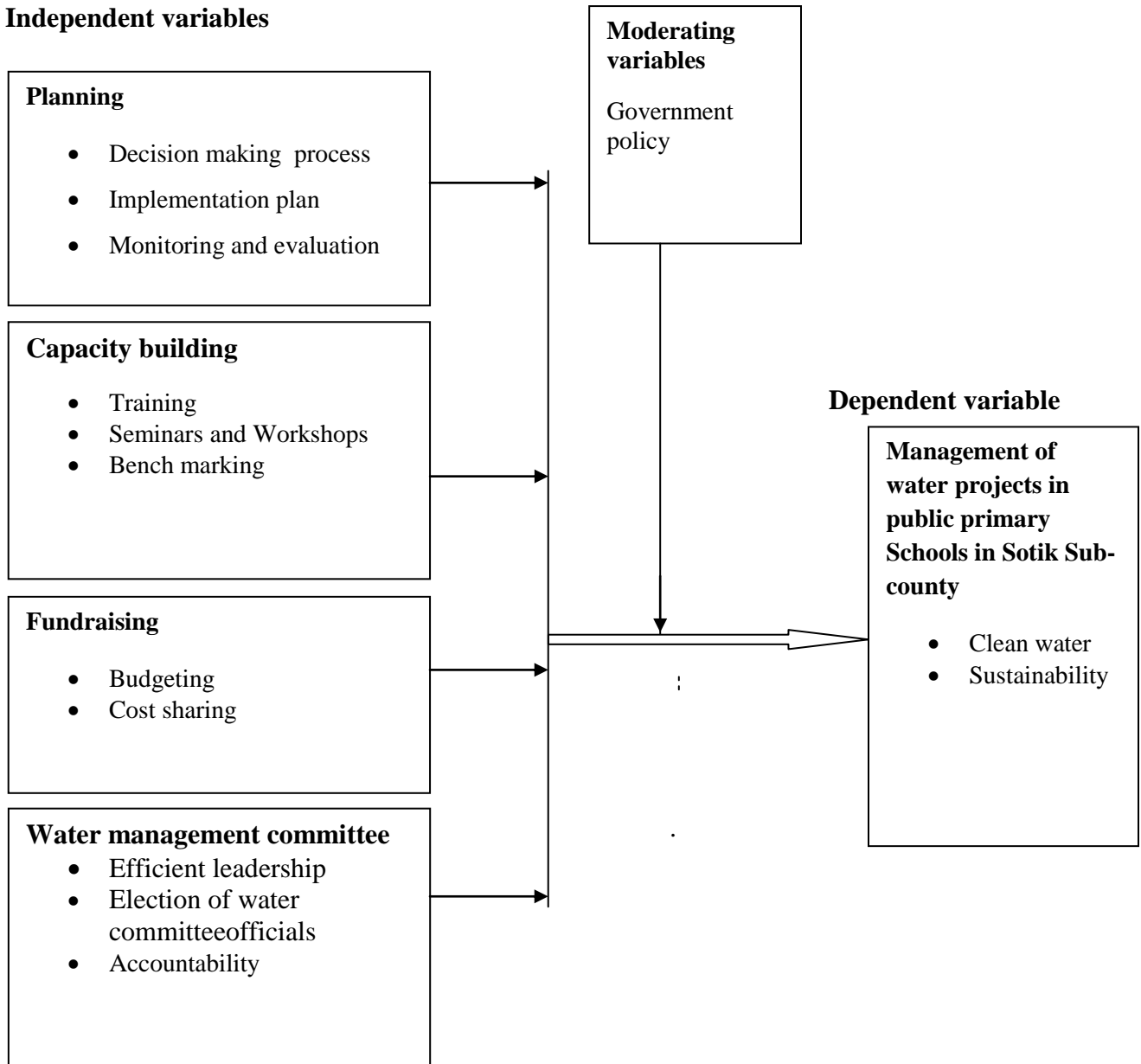


Figure 1. Conceptual framework

2.9. Summary of Literature Review

Inadequate access to clean water consumes time, increase prevalence rates of waterborne diseases and increase costs of accessing healthcare. This ultimately impacts the economy of an area. In Kenya, most water projects implemented in the rural areas to address water accessibility and scarcity are non-operational. The failure rate for most water development projects in Africa lie anywhere between 30 to 60%. According to existing studies, 55% of all the rural water supply projects in Tanzania, Uganda and Kenya are non-operational. Various factors have attributed to this failure: lack of demand of the project by the beneficiary community, high recurrent costs, neglect of the water facilities especially on operation and maintenance, use of inappropriate technology, locating of water points far from the community and lack of proper training. Further, community involvement; type of technology, distance, governance structures and training have been found greatly impact community borehole water projects. Some boreholes have been dug where there is no electricity supply making investments counterproductive. About 35% of the water projects implemented in Kenya fail due to poor management of the initiation, planning, execution and closure phases.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

The chapter describes the methodologies which were used in the study. The chapter consists of research design, target population, sampling, research instruments, Data collection Procedure, data analysis techniques and Ethical considerations.

3.2. Research Design

A research design is a scheme, outline, plan, structure or strategy of investigation conceived so as to obtain answers to research questions and control variance during the primary data collection (Kothari, 2003). The study will use a descriptive survey design. A descriptive survey design involved collecting information by interviewing and administering household level questionnaire to a sample of individuals being suitable for extensive research and an excellent vehicle for the measurement of characteristics of large populations (Orodho, 2003). Mugenda and Mugenda, (2003) contend that the purpose of a descriptive research is to describe behaviors and characteristics. Best & Khan, (2009) agreed with other scholars who argued that descriptive survey design describes and interprets phenomena and are concerned with conditions or relationships that exists, opinions that are held, processes that are going on, and effects that are evident or trends that are developing.

3.3. Target Population

A population is a group of individuals, objects or items from which samples are taken for measurement. It is the entire group or elements that have at least one thing in common (Kular, 2007). Ngechu (2004) also defines a population as a set of individuals, case or objects with some common observable characteristics. Target population is the group from which the researcher wishes to generate the findings of the study. The study targeted 324 public primary schools in Sotik Sub-county. Therefore, the target population constituted 324 head teachers, 324 Board of Management (BOM) chair persons and 324 chair persons of parents Teachers Association (PTA) making a total of 972 people.

3.4. Sample size and sampling procedure

This section presents the sample size and the sampling technique used in the selection of the sample size.

3.4.1. Sample size

According to Kothari (2004) sample size must be large enough to be representative of the universe population. Creswell (2006) stresses that sample size chosen by the researcher should be capable of giving enough information about the population and one which can be analyzed with ease. The sample size for this study was derived using a table of Krejcie and Morgan's (1970). Therefore, from a target population of 972, the sample size obtained was 278 respondents.

3.4.2. Sampling procedure

The study used a purposive sampling technique was used to select respondents who were subjected to the interview schedule. This gave a total of 40 PTA chairpersons. Secondly, a simple random sampling method was used to select the next group of respondents who responded to questionnaires. This was obtained from the remaining 238 respondents.

Table 3.2. Selected sample size

Categories	Number of people
Head teachers	120
BOM chairpersons	118
PTA Chairpersons	40
Total	278

3.5. Data Collection Instruments

The research instruments used in the study were questionnaires and interview schedules. The questionnaires consisted of semi structured consisting of both open ended and closed ended questions presented in form of a likert scale.

3.6. Pilot Testing

Piloting is trying out of research instruments on the respondents who will not be used in the main study. This was done among the public Schools in Chepalungu Sub-county. According to Cooper and Schilder (2007), the pilot test should constitute 10% of the sample size. Split half technique was used during the study by dividing the sample into two and subjecting them to questionnaire and interview guide.

3.7. Validity of the research Instruments

Validity is the extent to which the instrument measures what it appears to measure according to the researcher's subjective assessment (Nachmias: 1958). Validity deals with the adequacy of the instruments for example, the researcher needs to have adequate questions in the written task in order to collect the required data for analysis that can be used to draw conclusion. In this study, content validity was used to check on word and phrases in the questionnaire to ensure that they were not vague. Mehrens, *et al.*, (1987) refers face validity to whether the test looks valid "on the face of it." Expert judgment was used by the researcher with the guidance of the supervisor. Pre-test of the questionnaire were carried out to ensure that the content in the questionnaire remains unbiased.

3.8. Reliability of the research instruments.

According to Seliger and Shohamy (1989) reliability is the extent to which data collection procedures and research tools over time are consistent and an accurate representation of the total population under the study. Kirk and Miller, (1986) came up with three types of reliability which relate to quantitative research as: the degree to which a measurement, given repeatedly, remains the same, the stability of a measurement over time; and the similarity of measurement within a given period of time. Worthen, et al, (1993) defines reliability as a measure of how stable, dependable, trustworthy, and consistent a test is in measuring the same thing each time.

According to Mugenda and Mugenda, (2003), in any research study, a reliability coefficient computed and found to be 0.80 implies a high degree of reliability of the data.

3.9. Data collection Procedures

Data was collected by administering questionnaires and interview guides.

Three research assistants were recruited to and briefed on the process and procedures for administering and recording data. The researcher introduced herself to the respondents and briefed on the purpose of the study before embarking on data collection.

3.10. Data Analysis Techniques

Data collected were coded and entered into Statistical Packages for Social Scientists (SPSS Version 17.0) and analyzed using descriptive and inferential statistics. Qualitative data was analyzed based on the content matter of the responses. Responses with common themes or patterns were grouped together into coherent categories. Descriptive statistics involve use of

absolute and relative (percentages) frequencies, measures of central tendency and dispersion (mean and standard deviation respectively). Descriptive statistics was used to analyse the demographic information of the respondents and in describing the responses of the respondents in relation to the indicators of the independent, dependent and moderating variables (Bhattacharjee, 2012). Quantitative data were presented in tables and explanation in prose. Inferential statistics such as correlation and regression analysis were used to establish the nature and magnitude of the relationships between the variables.

3.11. Ethical issues in research

The researcher obtained permission from the relevant institutions including University Nairobi School of post graduate studies. The researcher also sought for a research permit from National Council of Science, Technology and Innovation (NACOSTI).

Confidentiality of information and anonymity of data recording was assured. Participants were briefed on the nature of the study before the commencement of data collection. Only those who voluntarily consented to participate in the study were interviewed.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1. Introduction

This study investigated Factors influencing community participation in management of water projects in Public primary Schools in Sotik Sub County.

4.2. Response rate

Out of 238 questionnaires issued to the respondents, only 220 were returned which represents 92%. This was deemed as adequate for the researcher to carry out data analysis.

4.3. Demographic information of the respondents

The following section presents the information data of officials and youth members

4.3.1 Demographic information of respondents by gender

Analysis of the respondents by gender was done to ascertain whether they were involved in management of water in Schools. This is shown in the **table 4.1**

Table 4.1 Distribution of respondents according to gender

Gender	F	%
Male	138	53
Female	122	47

Data obtained revealed that majority 138(53%) of officials were male while 122(47%) of officials were female. This implies that there were few women in leadership positions in public primary schools in Sotik Sub County. This may influence management of water projects in that women understand more on the importance of water in Schools, therefore for projects to be successful, gender equity should be enhanced.

4.3.2. Distribution of respondents according to education level

The study also sought to determine the distribution of respondents according their levels of qualifications. This is illustrated in the **table4.2**:

Table 4.2.Distribution of officials according to education level

Category	F	%
Secondary level	122	47
College level	99	38
University level	39	15

The study revealed that 122 (47%) of the respondents studied up to Secondary Level while 99(38%) had college level qualifications. In addition, 39(15%) of them had undergraduate qualifications. This implies that the School managers had adequate knowledge and experience to manage water projects hence this may influence the way water projects are carried in schools.

4.4.Planning process and management of water projects

The study further investigated the influence of planning process on the management of water projects in public primary schools.This is illustrated in **table 4.3**:

Table 4.3: Planning process and management of water projects

Category	Moderate		Great	
	F	%	F	%
High level planning	99	38	161	62
Frequent meeting done	179	69	81	31
Experienced project implementers	203	78	57	22
Monitoring and evaluation done	138	53	122	47

The study revealed that 99(38%) of respondents engaged in high level planning for water management in schools while 161(62%) said that it is greatly done which means that planning for water management is carried out.Whether frequent monitoring of project implementation is done,138(53%) agreed that monitoring and evaluation is key to project successful implementation of water projects.

203(78%) of the respondents said that experienced experts are contracted to carry out project implementation. This is where qualified contractors are employed to construct water tanks and install water purifiers in Schools.

4.5.Capacity building and management of water projects

Furthermore, concerning the influence of capacity building on management of water projects, the results are illustrated in **table 4.4:**

Table 4.4: Capacity building and management of water projects

Category	Very Low F %	Low F %	Moderate F %	Great F %
Regular training of officials		16 6	26 10	218 84
Training on use of appropriate technology	218 84		42 16	
Sensitization programs done	83 32	81 31	96 37	
Benchmarking done	39 15		39 15	182 70

218(84%) of the respondents agreed that they undergo regular training on ways of managing water projects in Schools while 16(6%) said that they do not undergo training. This may influence project implementation because trainings and seminars were reported to be beneficial in imparting people with knowledge on how water is conserved. 218(84%) of the respondents agreed that they are not using modern technology in management of water projects while 96(37%) said that they engage in sensitization programs on embracing use of modern technology such as water purification. In addition, 182(70%) agreed greatly that they benchmark on successful water projects. This may influence their implementation of water projects since benchmarking enabled them to learn on ways of implementing water projects.

4.6.Fundraising and management of water projects

The study also sought to find out the influence of fundraising on the management of water projects. This is highlighted in **table 4.5:**

Table 4.5. Fundraising and management of water projects

Category	Very Low F %	Low F %	Moderate F %	Great F %	Very great F %
Sourcing of finance to fund projects	18 7		57 22		185 71
Budgeting of water projects done	55 21	60 23	146 56		
NGOs and CBOs assist in financing		39 15	39 15	179 69	

185(71%) of the respondents said that they are sourcing funds to implement water projects in Schools while 18(7%) said that they do not source funds hence this will influence project implementation. Some obtain funds by asking parents to contribute an agreed amount to be used in such projects

146(56%) agreed that they budget for water projects while 60(23%) agreed that they do not budget for water projects. In addition, 179(69%) greatly agreed that they obtain support to implement water projects in schools from NGOs such as Waterlines USA, Tenwek community and Dig Deep organization.

4.7. Water management committees and management of water projects

The study further investigated the influence of water management committees on management of water projects. The results are shown in **table 4.6**:

Table 4.6. Water management committees and management of water projects

Category	Low F %	Very low F %	Moderate F %	Great F %	Very great F %
Elections of water committees done	5 2	81 31		174 67	
Efficient leadership			57 22	18 7	185 71
Accountability of leaders	39 15		39 15	180 70	

174(67%) of the respondents agreed that they participate in electing water committees in their Schools in a democratic manner. 185(71%) said that they experience efficient leadership from water committees since they implement water projects within a specified time frame and ensuring quality while 180(70%) agreed to a great extent that accountability is ensured among the leaders where funds allocated to water projects are utilized accordingly.

4.8. Management of water projects in public primary Schools in Sotik Sub-county

The study also went ahead to ascertain the extent to which management of water projects have been successful in public primary Schools. This is shown in **table 4.7**:

Table 4.7. Management of water projects

Category	Low		Very low		Moderate		Great		Very great	
	F	%	F	%	F	%	F	%	F	%
Clean water provided	18	7			42	16	203	78		
Efficient water management					60	23	146	56	55	21
Sustainability of clean water is ensured							218	84	42	16
Clean water leads to improved performance					83	32	81	31	96	37
Record keeping and information sharing exist	185	71	57	22			18	7		

203(78%) agreed that clean water is provided in their Schools. Moreover, 146(56%) agreed greatly that efficient water management is provided in Schools. 218(84%) of the respondents said that sustainability of water projects is ensured in their Schools. Furthermore, 83(32%) said that clean water leads to improved performance in Schools since learners are always present in school due to good health. Whether record keeping and sharing of information concerning water management is done, 185(71%) of the respondents said that this is not carried out. Poor record keeping makes accountability issues cumbersome.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

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

5.2. Summary of Findings

Data obtained revealed that majority 138(53%) of officials were male while 122(47%) of officials were female. This implies that there were few women in leadership positions in public primary schools in Sotik Sub County. This may influence management of water projects in that women understand more on the importance of water in Schools, therefore for projects to be successful, gender equity should be enhanced.

The study revealed that 122 (47%) of the respondents studied up to Secondary Level while 99(38%) had college level qualifications. In addition, 39(15%) of them had undergraduate qualifications. This implies that the School managers had adequate knowledge and experience to manage water projects hence this may influence the way water projects are carried in schools.

The study revealed that 99(38%) of respondents engaged in high level planning for water management in schools while 161(62%) said that it is greatly done which means that planning for water management is carried out. Whether frequent monitoring of project implementation is done, 138(53%) agreed that monitoring and evaluation is key to project successful implementation of water projects.

203(78%) of the respondents said that experienced experts are contracted to carry out project implementation. This is where qualified contractors are employed to construct water tanks and install water purifiers in Schools.

218(84%) of the respondents agreed that they undergo regular training on ways of managing water projects in Schools while 16(6%) said that they do not undergo training. This may influence project implementation because trainings and seminars were reported to be beneficial in imparting people with knowledge on how water is conserved. 218(84%) of the respondents agreed that they are not using modern technology in management of water projects while 96(37%) said that they engage in sensitization programs on embracing use of modern technology such as water purification. In addition, 182(70%) agreed greatly that they benchmark on successful water projects. This may influence their implementation of water projects since benchmarking enabled them to learn on ways of implementing water projects.

The study also sought to find out the influence of fundraising on the management of water projects. 185(71%) of the respondents said that they are sourcing funds to implement water projects in Schools while 18(7%) said that they do not source funds hence this will influence project implementation. Some obtain funds by asking parents to contribute an agreed amount to be used in such projects

146(56%) agreed that they budget for water projects while 60(23%) agreed that they do not budget for water projects. In addition, 179(69%) greatly agreed that they obtain support to implement water projects in schools from NGOs such as Waterlines USA, Tenwek community and Dig Deep organization.

The study further investigated the influence of water management committees on management of water projects. 174(67%) of the respondents agreed that they participate in electing water committees in their Schools in a democratic manner. 185(71%) said that they experience efficient leadership from water committees since they implement water projects within a specified time frame and ensuring quality while 180(70%) agreed to a great extent that accountability is ensured among the leaders where funds allocated to water projects are utilized accordingly.

The study also went ahead to ascertain the extent to which management of water projects have been successful in public primary Schools. 203(78%) agreed that clean water is provided in their Schools. Moreover, 146(56%) agreed greatly that efficient water management is provided in Schools. 218(84%) of the respondents said that sustainability of water projects is ensured in their Schools. Furthermore, 83(32%) said that clean water leads to improved performance in Schools since learners are always present in school due to good health. Whether record keeping and sharing of information concerning water management is done, 185 (71%) of the respondents said that this is not carried out. Poor record keeping makes accountability issues cumbersome.

5. 3. Conclusion

Based on the findings, it was concluded planning process is key to project success. The school managers should make decisions on implementation of water projects in schools.

In addition, capacity building was proven to be empowering members with skills and experiences pertaining project implementation. Despite finance being a major factor in water management projects, most schools in Sotik Sub County had a challenge in raising funds. This has impacted negatively in implementing water projects.

Moreover, water management committees are crucial in implementation of water projects. Successful projects done in most of the school were as a result of proactive, efficient and accountable committees elected by the parents.

5.4. Recommendations

Based on the findings of the study, the following recommendations are made;

- i. All Schools need to implement water projects in schools as this goes a long way in improving performance of the learners
- ii. The government should provide financial support to Schools to aid in implementation of water projects.
- iii. Frequent training of all stakeholders on water management need to be carried out so as to ensure sustainability of projects.
- iv. Implementation of water projects need appropriate monitoring and evaluation by relevant stakeholders

5.5. Suggestions for further research

Management of water in Schools has proven to be influenced by several factors. There is need to carry out further research on factors influencing sustainability of water projects. This is because it was found out that despite some NGOs and CBOs aiding in funding water projects, some have not been sustained.

Further research need also to be done on appropriate techniques of implementing water projects since some projects were poorly done in some Schools.

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APPENDICES

Appendix I: Letter of Transmittal

Chepngeno Clementina Rotich

University of Nairobi

Phone: 0726941624

TO WHOM IT MAY CONCERN

RE: DATA COLLECTION

I am a Master of Arts student at the University of Nairobi carrying out a research project as part of the course requirement for the award of the degree M.A Project planning and Management. The study seeks to establish the **influence of community participation in the management of water projects in Public primary Schools in Sotik Sub County**

The purpose of this letter is to request you to participate as a respondent in this study by completing the attached questionnaire as accurately as possible. The findings will be strictly for academic use and at no time will your name be mentioned anywhere in the report. Your honest participation will be highly appreciated.

Thank you

Sincerely

Chepngeno Clementina Rotich

Reg. No L50/76989/2014

Appendix 2: Questionnaire for Head teachers, BOM chairpersons

INTRODUCTION

The researcher is carrying out a research on influence of community participation on provision of clean drinking water in Public primary Schools in Sotik Sub-county, Kenya

INSTRUCTIONS

Please don't write your name on the questionnaire. Kindly provide your honest opinion on all the items in the questionnaire. All the information provided will only be used for study purposes and will be kept confidential.

Use a tick (√) to show your response where applicable, response can also be written.

SECTION 1: BACKGROUND INFORMATION

1. Indicate your Gender Male Female

2. Your highest level of education.
 - Post Graduate
 - Graduate
 - Diploma
 - KCSE
 - Others (specify)-----

3. Which capacity are you working in?
 - Head teacher
 - BOM
 - PTA

SECTION TWO: PLANNING PROCESS

1. To what extent does Planning process influence provision of clean water?
 - Very great extent

 - Great extent

 - Moderate extent

Low extent

No extent

2. Has the management been given adequate resources and knowledge to implement provision of clean water? How is the current position impacting on learners performance?

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

3. State the extent to which the following planning aspects influence provision of clean water. Use a scale where 1- To a very low extent, 2- To a low extent, 3- To a moderate extent, 4- To a great and 5-To a very great extent

Statements	1	2	3	4	5
High level of planning for provision of water exist					
Frequent meeting done by management to make decisions on provision of clean water in school					
Experienced people are contracted to implement water projects					
Monitoring progress is usually carried out and also evaluation of performance					

SECTION THREE: CAPACITY BUILDING

1. How does capacity building influence provision of clean water in school?

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

2. State the extent to which the following aspects of capacity building influence provision of clean water in school. Use a scale where 1- To a very low extent, 2- To a low extent, 3- To a moderate extent, 4- To a great and 5-To a very great extent

Statements	1	2	3	4	5
Regular training of officials on project implementation					
Training of people on use of appropriate technology					
Seminars on sensitization programs on importance of clean water					
Benchmarking on successful water projects so as to carry out in your school					

SECTION FOUR: FUNDRAISING

1. If yes, to what extent does financing influence provision of clean water?

Very Great Great Low Very Low No Extent

2. How does financing influence provision of clean water in your school? Please explain

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

3. State the extent to which the following financing aspects provision of clean water.

Use a scale where 1- To a very low extent, 2- To a low extent, 3- To a moderate extent,
4- To a great and 5-To a very great extent

Statements	1	2	3	4	5
Successful provision of clean water is achieved through highly committed leaders and community in sourcing finance to facilitate project success					
Your school usually budget for project implementation and maintenance					
Some NGOs and CBOs play a key role in supporting project implementation in form of finance					

SECTION FIVE: WATER MANAGEMENT COMMITTEE

1. Does your school have efficient and operational committees who are in charge of provision of clean water?

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

2. State the extent to which the following water management committee aspects influence provision of clean water. Use a scale where 1- To a very low extent, 2- To a low extent, 3- To a moderate extent, 4- To a great and 5-To a very great extent

Statements	1	2	3	4	5
Election of committees are done by community members					
Efficient and accountable leadership is paramount in implementation of water projects					
Accountability is ensured by leaders					

SECTION SEVEN: MANAGEMENT OF WATER PROJECTS

1. Below are statements on the influence of community participation in provision of clean water. On a scale of 1-5 (where 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree) please rank your level of agreement with each statement by ticking the appropriate box.

	1	2	3	4	5
Clean water has been provided in school					
Efficient management of water is enhanced by all stakeholders					
Mechanisms are in place to ensure sustainability of clean water					
The management has facilitated provision of clean water in school					
Management of records and sharing of information has improved immensely since implementation of water project					

2. To what extent has the provision of clean water in the school improve performance of the learners Very great extent
- Great extent
- Moderate extent
- Little extent
- No extent
3. Kindly indicate the challenges that you face in your Schools while implementing water management projects

.....

.....

.....

THE END

THANK YOU FOR YOUR PARTICIPATION

Appendix 3: Interview schedule for PTA Chairpersons

1. Has the performance of learners improved since clean water has been provided in School?
2. Has the management been given adequate resources and knowledge to implement provision of clean water projects?
3. What is the perception of the community towards provision of clean water in school?
4. Does existence of standards that must be adhered to exist when it comes to implementation of water project?
5. Where did you get funds to implement such projects?
6. Do water management committees play a key role in implementation of water projects?
7. Do you conduct elections when looking for water management committees?
8. Do you get support from NGOs or CBOs concerning provision of clean water in your school?
9. Are the community active participants in implementation of clean water projects?

THE END

THANK YOU FOR YOUR PARTICIPATION

Appendix 4: Krejcie and Morgan (1970)

TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size
 "S" is sample size.

Krejcie, Robert V., Morgan, Daryle W., "Determining Sample Size for Research Activities", Educational and Psychological Measurement, 1970.