

**INFLUENCE OF COMMUNITY PARTICIPATION ON SUSTAINABILITY OF
WATER PROJECTS IN KWANZA SUB-COUNTY, TRANS NZOIA COUNTY**

KENYA

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A research project report submitted in partial fulfillment of the requirement for the award of the degree of master of arts in project planning and management of the university of Nairobi.

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DECLARATION

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

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This research project report was carried out by the candidate under my supervision as a university supervisor.

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DEDICATION

I dedicate this work to my parents Charles Nakerlocheria as well as Jane Atikilem Naker whose inspiration laid down the foundation for advanced learning. They taught me humble growth that hard work, perseverance and patience are key to achieving excellence in life. Above all they changed my attitude that I can be all I want despite my humble background.

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ABBREVIATIONS/ACRONYM

NGO	Non-governmental organization
UNEP	United Nations Environmental Program
UN	United Nations
CSOs	Civil Societies
MDGs	Millennium Development Goals
SPSS	Statistical Package for Social Sciences

ABSTRACT

Sustainability of water project is crucial for direct and indirect beneficiaries when a project succeeds. Adequate involvement of all community in projects is still a challenge to most of the less developed countries such as Kenya. A lack of sufficient community engagement in project formulation, financing, implementation, and monitoring and evaluation has seen many projects dying before their fifth birthdays. The purpose of the study was to determine the influence of community participation on sustainability of water projects in Kwanza sub-county, Trans-Nzoia County. The study will be guided by the following objectives: To examine the influence of community participation in project formulation on sustainability of water projects in Kwanza Sub-county, To assess the influence of community participation in project financing on the sustainability of water projects in Kwanza Sub-county, To determine the influence of community participation in project implementation on sustainability of water projects in Kwanza Sub-county, To find out the influence of community participation in project monitoring and evaluation on sustainability of water projects in Kwanza Sub-county. A descriptive survey research design was used. The target population of the study was 32,181 households in Kwanza Sub-county, Trans-nzoia County. The researcher used Sekaran (2003) sample size determination formula to give a sample of 380 Households. The researcher used simple random sampling to select the households. The study used questionnaire to collect data. The researcher pre-tested the questionnaire on 38 households in the neighboring Kiminini Constituency. The researcher ensured and enhanced the validity of the questionnaires through expert reviews. Split-half method to compute the reliability of the instruments. Data analysis was aided by computer software known as SPSS. Data was analyzed both using both descriptive and inferential statistics. The descriptive analysis generated frequencies, proportions, mean and standard deviation while inferential analysis generated Pearson's correlations coefficients. Findings were presented through frequency and percentage tables. The researcher observed ethical consideration such as informed consent, confidentiality, no harm and beneficence. There There was a significant association between Project formulation and Sustainability of water projects, Spearman's $\rho(r) = 0.761$, $p < 0.000$, $CL = 95\%$. There was a significant correlation between project financing and sustainability of water projects, Spearman's $\rho(r) = 0.709$, $p < 0.000$, $CL = 95\%$. There was a significant correlation between project implementation and sustainability of water projects, Spearman's $\rho(r) = 0.373$, $p = 0.061$, $CL = 95\%$. There was a significant correlation between Monitoring and Evaluation and sustainability of water projects, Spearman's $\rho(r) = 0.496$, $p = 0.010$, $CL = 95\%$. The government and other development agencies need to enhance community involvement in project formulation, project financing, execution and monitoring and evaluation. There is therefore need to establish the moderating role of project leadership on the relationship between stakeholder participation and sustainability of community water projects in Kwanza sub-county.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Global population increase continues and the pressure on crucial services such as water persistently escalates. Studies done by Chitonge (2014) and Gaynor (2013) suggest that the challenge of water provision to emerging cities in Asia and Africa will continue to rise. The growth of population is expected to double by 2030 (Chitonge, 2014) and will be more pronounced in countries where majority of the population live below poverty line. In an effort to curb this eminent problem of water shortage and supply stakeholders, including governments and non-governmental organisations strive to involve communities in formulating, financing, and implementing water projects to improve their wellbeing.

Project management experts have proposed different management mechanisms such as demand-responsive approach as opposed to the traditional supply-driven interventions tackle the challenge of water provision and access in the less developed countries such as Kenya. The demand-responsive approach, popularised in the 1990s by the World Bank, is anchored on the concept of community participation that targets to enhance greater beneficiary involvement in water sustainability projects (PMBOK, 2013). The idea comprises communities taking the initiative towards the demand for **quality water that is reliable to sustain the community and this goes alongside assuming active initiatives in formulating projects, financing, implementing, monitoring, and evaluating (GDN, 2009).** The demand responsive strategy also stresses that stakeholders have to gain ownership of

the system through enhancing continuous and significant contribution through the provision of labour or even cash to enhance the project. The strategy is grounded on the premise that community involvement ultimately results in better formulated projects, more cost-effective, better targeted benefits, and timely provision of water. More importantly, the initiative is viewed as effective in respect to curbing incidences of corruption and rent-seeking activities.

Stakeholders play a crucial role in setting objectives and priorities of water provision initiatives to ensure appropriateness and relevance. It is necessary that all stakeholders are included in the development of projects and not only the direct beneficiaries of the initiative (Jansz, 2011). When designing, financing, implementing, and monitoring projects, more emphasis should be given to the engagement of stakeholders to participate in the process of making decision, learn how to communicate, associate, and cooperate with them for the smooth running of the initiative.

Stakeholder participation in project formulation is a key impetus to sustainability of water projects. Project coordinators are charged with powers and rights to involve community members in the design of projects within their areas of control and strengthening of democracy to enhance community development projects (The Millennium Development Goals Report, 2012). To encourage community initiatives, governments tend to decentralize the provision of basic social services, including education, healthcare extension services, community water supply, as well as sewerage systems (UN, 2008). Community members are much aware of the problems they face and are the right people to highlight their felt needs during the stages of project design.

Stakeholder participation in project financing is crucial in planning and budgetary process. Key stakeholders such as farmers form the primary consumers of water and that they can stop the process at any stage, especially when they are not involved in the budgeting process (Vohland&Boubacar, 2009). The anticipated project funds are budgeted in line with the itemized needs of the community members. Planning process ensures that the funds allocated for the project are used to meet both the short term and medium term goals. Stakeholders feel at ease when they are briefed about the funds received and the way it is spent.

Stakeholder participation in project implementation enhances the actualisation of all activities designed at the planning stage. Stakeholders, including agency representatives and community members are tasked with the responsibility of implementing the formulated activities (Wisser, Frohling, Douglas, Fekete, Schumann, &Vo'ro'smarty, 2010). The responsibility of the implementation process is one that is people-driven.

Stakeholders participate in monitoring and evaluation in the attempt to **enhance power redistribution to the less powerful individuals and comprises power devolution process to make decisions and conduct review on the same for the advantage of the targeted project beneficiaries** (Yohannes, Poda, McCartney, Cecchi, Kibret, Hagos, &Laamrani, 2012). Monitoring and evaluation process **demands the acknowledgement as well as respecting the experience, knowledge, and viewpoints** of the community members with the adequate reasonable measure of objectivity (Wallace & Grover et al., 2008). They are called upon to draw terms of reference **(ToR) to guide the procedure of evaluation. The system**

enhances **community** ownership and obligation to exercise and **observe continuous evaluation of the project.**

Kwanza Sub-County of Trans-Nzoia occupies an area of 466.9 km² and partitioned into four administrative wards, including Keiyo, Kwanza, Kampomboni, and Bidii with a population of 193,087(The Millennium Development Goals Report, 2012). In the modern times, it is evident that the bigger the population, the less the amount of water supply available to sustain the population. The claim is backed by the report (UNEP/SEI, 2009) that shows that households in Kwanza Sub-County are among some of the Kenyans with the lowest accesses rate to clean and piped water supply. Water projects initiated by water service boards, water trust funds, county government, and some NGOs operating in the region have often assumed a snail pace.

1.2 Statement of the Problem

Sustainability of water projects within Kenya is still low despite the knowledge that stakeholder participation constitutes a core value in the community development. As Nyandemo and Kongere (2010) state, while community development has since been recognised for a long time as a beneficial initiative, the importance of stakeholder participation in water sustainability projects has been inadequately stressed. The insufficiency can be alluded to a lack of clear interpretation of project development (Chitonge, 2014). Hence, despite efforts that the government of Kenya and agencies dealing with community initiatives make to enhance community participation, stakeholder participation in water provision in most parts of the country is still inadequate.

Insufficient involvement of people in the development process often leads to a lack of ownership and sustainability of development initiatives. The inadequacy usually make communities lose interest in projects, which in turn steps up the dependency on government resources (Mulai, 2011). The looming gap prompts **several** questions that **still require answers** to realise sustainability of projects through effective participation, which include stakeholder participation in project design, financing, implementation, **as well as monitoring/evaluation** (Owuor & Foeken, 2012). With the devolved system of government in Kenya, there is need to strengthen local participation in all planning and implementation.

Several studies have been conducted on supply of water and its associated effects on human life, but none of them, to researcher's knowledge has focused on Kwanza Sub-County of Kenya despite its high population, poverty rate, and persistent water shortage. Jansz (2011) **examined the sustainability of water supply and researcher established that the rural water supply** of Niassa province is inadequate. A similar study was conducted in Kenya by Oraro (2012) on the *Determinants of Delays in Construction of Community Water Projects in district*. The researcher established that insufficient stakeholder participation and delays in implementation derail **programs on water sustainability**. The current study **intends to assess the** influence of community participation in sustainability of water projects in Kwanza Sub-County in Trans-Nzoia County of Kenya.

1.3 Purpose of the Study

This was to determine the influence of community participation on sustainability of water projects in Kwanza sub-county, Trans-Nzoia County

1.4 Objectives of the Study

The study was guided by the following objectives:

- i. To examine the influence of community participation in project formulation on sustainability of water projects in Kwanza Sub-county.
- ii. To assess the influence of community participation in project financing on the sustainability of water projects in Kwanza Sub-county.
- iii. To determine the influence of community participation in project implementation on sustainability of water projects in Kwanza Sub-county.
- iv. To find out the influence of community in project monitoring and evaluation on sustainability of water projects in Kwanza Sub-county.

1.5 Research Questions

The study intended to seek answers to these questions:

- i. To what extent does community participation in project formulation influence sustainability of water projects in Kwanza Sub-county?
- ii. To what extent does community participation in project financing influence sustainability of water projects in Kwanza Sub-county?
- iii. To what extent does community participation in project implementation influence sustainability of water projects in Kwanza Sub-county?
- iv. To what extent does community participation in project monitoring and evaluation influence sustainability of water projects in Kwanza Sub-county?

1.6 Significance of the Study

Globally water scarcity ranks as one of the millennium challenges. The protracted nature of conflict between animals and human beings, degradation of ecosystems, drying or seasonal rivers, energy security, socio-economic growth and food security and climatic change, environmental adaptation and biodiversity loss underpins the importance and indispensability of stakeholder participation in water projects, the implication of all this on sustainability of water project is yet to be fully understood. This study will help the stakeholders; government and CSOs to understand stakeholder participation impacts the sustainability of water projects hence coming up with well-informed policies.

It is also hoped that the this study will help communities in Kwanza to understand the different aspect of their participation in the project cycle and the implication of such on the sustainability of water projects, this will enable them to act consciously and optimize on their participation in with regard to waters supply in the area.

The study is of great importance to scholars, as it adds value to the body of **knowledge about the impact of community participation** on sustainability of water projects in Kwanza sub-county, Trans-Nzoia County. The researcher did not come about a similar study done in the area.

1.7 Limitations of the Study

Given that the community has farming as their main economic mainstay, the researcher foresees a challenge of finding the respondents at the households for interviewing. This was addressed by visiting them in the fields and at the water points but being sure to reference them back to the household since the household is the sampling unit. The respondents may also not understand the questions in English; the researcher undertook

to translate the questions into the local dialect so that the respondents are able to respond adequately to the questions.

1.8 Delimitations of the Study

The study is cross-sectional by nature. The project examined the impact of community participation on sustainability of water projects in Kwanza sub-county and not any other location. The project aspects which in which stakeholder participation was assessed was: project formulation, project financing, project implementation as well as project evaluation and control. The study targeted any other household member except the household heads or significant other given that they are the likely active participants in water projects in the community.

1.9 Key Assumptions of the Study

The study assumed that each and every household in Kwanza sub-county had participated one way or another in the water projects: project formulation, project financing, project implementation, project monitoring and evaluation. **The assessment assumed that the participants would be willing to take part in the exercise and provided honest opinions to enable the researcher what was intended.**

1.10 Definitions of Key Terms

Sustainability The ability of the water projects **to uphold their operations, benefits, as well as services that benefits community members beyond a particular financing period.**

Community participation	Engagement of people who are who are benefiting directly or indirectly in the project cycle management.
Community Participation in project formulation	Contribution in giving project ideas which are developed into operational project plans.
Community Participation in project financing	Contribution of resources that to be used in rolling out the plans.
Community Participation in project implementation	Stakeholder participation involves processes of project activities that transform inputs into outputs.
Community Participation in monitoring and evaluation	Stakeholder participation in reviewing progress realised through project implementation of water projects as well as the outcomes realised.

1.11 Organization of the Study

Chapter one comprises of the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitations and delimitations of the study and organization of the study. The second chapter constitutes the literature review on the determinants of wellbeing of households in water supply projects, theoretical framework, conceptual framework and summary of the literature. Chapter three discusses the research design, target population, sample size and sample selection techniques, research instruments, data collection procedure, data analysis techniques and ethical considerations. Chapter four comprises presentation and

discussion of findings and finally the fifth chapter summarized the findings, gives conclusion recommendations, contribution to knowledge and areas for further study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

2.2 Empirical Literature Review

Empirical literature was to ascertain the influence of community participation in sustainability of water projects. The review provides a rationale for this study. The review of the related literature examines various literature sources such as journals, books, and reports. The review is anchored on specific attributes of stakeholder participation in project formulation, financing, implementation, as well as monitoring and evaluation and their influence in sustainability of water projects.

As Anderson and Ostrom (2008) posit, participatory development has been perceived as the end process since it kicks off the process of empowerment that make the beneficiaries of the project to remain committed to the formulation of initiatives, implementation, and observance of high standards of project sustainability. The agenda is expressible in terms of empowerment initiative to guide the generation of knowledge, skills, as well as experience to assume bigger responsibilities for the realization of development objectives.

Banerjee and Morella (2011) confirm that participative approaches are highly dependent on people and few projects can succeed without their involvement and cooperation. Most development projects are evidently stagnating or even failing at some point in time because they lack significant engagement of the targeted beneficiaries. Lapses in the

management of most project initiatives have been cited as key barriers that derail the success of many initiatives.

Cornwall (2008) concludes the success as well as sustainability of different project outcomes are not mainly based on the availability of finances to fund such initiatives, thus active involvement of stakeholders to assist in the monitoring or evaluation is imperative. Bakalian and Wakeman (2009) also contend that the structures of traditional community setups cannot be ignored since they act as institutions to legitimized projects that receive government funding or donor funding. Engaging stakeholders in the management of project initiatives makes the target beneficiaries give the initiative a clean bill of health and hold leaders to account if quality outcomes are compromised.

According to Alabaster (2010), cultural determinants are crucial as they influence the outcome of any project in one way or another. In this regard, it is imperative to ascertain the linkage between the taste and preference of the locals as well as their cultural norms regarding a particular project as a means of mitigating losses on initiatives that fail to meet the needs of the target beneficiaries. Also, involving the locals at the initial phases of the project is crucial and should go throughout its entire life (Alabaster, 2010). Failure to do this however may compromise the desired outcome of a specific project towards the sustenance of the needed level of development immediately the funding or donor agencies withdraw their support. Hence, more emphasis is put on stakeholders' participation.

Bowen (2008) finds that stakeholders' participation in community projects has many advantages. The profound one is the project sustainability, its ownership, as well as the

final product that the community members enjoy. Similar assertion is cited by Chitonge (2014) that when stakeholders engage in and assume control of most initiative, implying that that the government or donor-agency that funds the activity must release some power, authority, and control. Increased empowerment of the locals results in the strengthened capacity towards the management of the activities, monitoring or evaluations as well as making crucial decisions. It also enables the project participants to gain analytical skills into comprehending their own difficult situations. The process thereby scales up the agitation that may be involved in some aspect of the development initiative.

Chitonge (2014) posits that participatory management also comprises the identification of projects needs. The phase is critical in the sense that it allows different stakeholders to participate in the identification of their actual needs and prioritize them. The reason for the involvement of the stakeholders rests on the premise that they feel the full ownership of the process and thus tend to manage it properly. This is the phase the stakeholders establish the underlying problems and rank them accordingly, and ascertaining the causes and influences of such problems (Nyandemo & Kongere, 2010). Upon the completion of problem ascertainment, stakeholders engage in in-depth discussions before they eventually embark on building consensus on the same. Objective assessment is finalised and practical solutions sought on the basis of the cause-effect correlation to stimulate the process of planning.

2.2.2 Stakeholder Participation in Project Financing

According to Gaynor (2013), most finances that budgeted to support specific activities are virtually directed towards such services. Project practitioners confirm the claim that the effective fund distribution to specific initiatives essentially drives the successful outcomes of specific activities. Community-based projects aims to transform the livelihood of the locals by emphasising on the provision and access of quality water. On the same note, Kahiga (2011) emphasises that in order to do this, stakeholders have to unite in working and planning together as a team. Ongoing professional development as well as technical assistance may yield benefits only if the stakeholders embraced the need to create some certain level of understanding of felt needs as well as relevant skills required to attain the desired outcomes. Hence, funding must be only directed to these crucial categories.

Kahiga (2011) cites that experienced community leaders also avoid scattershot programming and mission creep. They should instead base their focus on creating activities that can improve the livelihood of the community members to achieve the desired outcomes. Nyonje, Ndunge, and Mulwa (2012) confirm the alignment must be consistent and documented as agreed terms of reference. Communities ought to acknowledge the contribution of every project stakeholder and engage lead coordinators as well as agency in the process of planning as well as implementing the activities within the budgeted financial resources.

In line with efficient financial utilization, stakeholders need to come up with a result outline that caters for the needs of the local people. Nyandemo and Kongere (2010) state that stakeholders engage in the review process to ensure that it is pertinent to the

stipulated indicators as well as the desired outcome. Mulai (2011) supports this claim that they create the format for guiding the assessments of new initiatives so as to facilitate the ascertainment as well as indicator alignment to aid progress measurements.

Awortwi (2012) concludes that the sum expenditure of operating a local project differs significantly in terms of services, operational design, size, as well as support required. Also, the variations in the costs involved depends on the sum received from source funding as well as the outlined arrangements from the donor-funding agency or government funding. Cheruiyot (2012) emphasises that variations in the funding sources is the foundation of a viable strategy for investment. The same claim confirms the assertion made towards the support water initiatives to benefit the community. Stakeholders tend to be more equip to rise against the problems of funding fluctuations, a project risk they mitigate by creating different sources to fund their interventions. Stakeholders involved in sustainability of water projects should consider including permanent funding streams such as community sport marathons as part of their funding strategy.

Ika (2009) suggests that creating different sources of funding is vital in the implementation of various initiatives to support training, evaluation, assistance, as well as a number of operational supports. Stakeholders with a common objective tend to be committed towards availing resources from different sources to meet the needs of the community members (Njon, 2010). They acknowledge the fact that the resources should only be channelled towards meeting the needs of the targeted beneficiaries and the effect

is only maximised when the same targeted groups obtain complementary services as well as the backups from other stakeholders.

Owuor and Foeken (2012) conclude that community projects step up and their sustainability is achieved by availing a variety of financial support. The process of diversification benefits from a continuous and reliable source of funding to drive the implementation and support of the related activities (PMBOK, 2013). The initiative to diversify a range of project portfolio is critical in the sense that it attracts substantial that is applied in the utilisation of service delivery and strengthening capacity building initiatives such as professional development as well as evaluation.

Imunya (2010) confirms that financial resources are key impetus that affects the sustainability as well as the performance of different project initiatives largely. The assessment concludes that finances are identified as major determinant in the realisation of project sustainability. The study findings show that financial resources that exhibit a co-efficient of 0.24; $P < 0.01$ significantly explains the contribution of activity sustainability.

2.2.3 Stakeholder Participation in Project Implementation

As Ghai and Vivian (2014) record, project implementation is that stage in the project cycle when the project management plan is translated into action, which is, work is done on the ground. The inputs of the project implementation process form the output of a project planning process and success or otherwise depend on the quality of a project management plan and the capacity and efficiency of the project management team

(Bakker, 2008). It is during the implementation stage that project plans are translated to project activities.

Nyandemo and Kongere (2010) define project implementation as the inclusive process of transforming wide objectives into specific tangible outcomes in the form of particular project actions. A project manager performs the crucial role of supervising the implementation of the project as the leader in a team of personnel with different range of capacities and training each charged with the responsibility of overseeing certain aspects of the project (GoK, 2009). Project management works in liaison with various stakeholders and community members, including the officers in charge of water and sewerage system at the county levels. Procurement of works is to be carried out according to set out regulations where open tender system was preferred (Rockstrom, Falkenmark, Karlberg, Hoff, Rost &Gerten, 2009). The management team together with representation from the community carry out tender evaluation and participate in the award to the successful water contractor. Once the projects commence the team may choose to hold weekly site meetings where selected stakeholders are expected to attend and contribute during deliberations.

UNEP/SEI (2009) states that approximately 70 percent of project initiatives fail because of challenges faced when trying to manage project schedules, deliverables, as well as budgets, thus the critical urge to control scope to provide stakeholders with ample time to meet the approved objectives as well as to realise successful projects.

PMBOK (2013) gives the definition of the project scope as the sum total of results, services, and products aimed to be provided to the targeted beneficiaries. Project

activities during implementation outlines key milestones in the process. For infrastructure projects the key activities are usually represented in the form of a work programme Gantt chart, a tool for controlling the project to ensure that outlined parameters for quality, time, and budget are achieved as planned.

Asnake (2012) establishes that controlling in project implementation implies the process of establishing standards, monitoring and evaluating progress and taking corrective measures in the event of adverse or extreme variations in the outcomes. The chart is designed at the planning phase to monitor the progress of the project in line with the time barometer as per the outlined plan (Aroka, 2010). Barometers for project measurement are outlined in an in-depth specification that is designed at the planning phase. Nyandemo and Kongere (2010) ascertained four other useful control charts one being the control point of the identification chart that is a summary of a useful technique for controlling that identifies well in advance, what can go amiss in the outlined parameters of cost, time, and quality. The project manager then identifies when and how to know that some deviation occurs and what needs to be done to correct the mistake. A second one comprises the project control chart that utilises schedule plans as well as budgets to provide prompt reports that compare the estimates with actual, computes variance on every finalised sub-unit, as well as provide tally on the cumulative variance for each project (PMBOK, 2013). The third one provides the milestone chart presenting the project schedules as well as their control dates, highlighting main events that demand verification or approval to continue with the activities. The fourth one represents the budget control that is similar to the project control chart, which states the project subunits and compares the actual costs with the estimates.

Mbae (2010) conducted a study on determinants affecting the implementation projects, used a descriptive survey design, and sampled the respondents using a stratified random sampling method. The generated data were then subjected to qualitative and quantitative analysis. The researcher administered both structured and non-structured questionnaires to the respondents to gather data from the targeted beneficiaries of the project, stakeholders, as well as implementers. The critical finding from the assessment ascertained that the failure of the project was highly attributed to a lack of community involvement or a low stakeholder engagement in most activities.

2.2.4 Stakeholder Participation in Project Monitoring and Evaluation

Nyonje, Ndunge and Mulwa (2012), record monitoring as the periodic and continuous assessment of project activities enable the realisation of needed actions, desired outcomes, work schedules, and input deliveries to progress as per the project plan. The process is a continuous one of information gathering at consistent intervals regarding a project or programme that is in progress, specifically on their nature and magnitude of performance. It is an ongoing activity of tracking the progress of a project against planned tasks to ensure that the project is moving towards the right direction and at the right speed to achieve its outlined objectives.

Oraro (2012) reaffirms that project monitoring comprise an ongoing undertaking encompassing day-to-day operation at the phase of its implementation and has been regarded as a distinct routine function for measuring inputs against the achieved outputs. Challa (2011) also contends that monitoring comprises implementation, and this has to conform with the needed procedures as well as the attainment of the desirable outcomes.

The main aim is to demonstrate at the earliest instance any shortcomings concerning the achievement of the intended objectives so that ameliorative measures can be undertaken promptly.

Enfors (2009) establishes a relationship in monitoring and controlling of risks. The researcher views risk to be potential threats that can negatively influence project quality, scope, and schedule. The project manager will have defined these events as accurately as possible and tried to determine when they would affect the project as well as developed a risk management plan to make amends. Nyonje, Ndunge and Mulwa (2012) confirm that evaluation is a crucial function that encompasses systematic gathering of data, analysing, as well as interpreting results to ascertain whether the project performs in line with its objectives. The definition elucidates the continuity of the monitoring and evaluation processes in tracking progress of projects and the usefulness in risk control.

GOK (2009) records that the ESP Monitoring and Evaluation programme reporting structures from project level upwards to the national level. Every line ministry was to form project monitoring and evaluation committees at the national and district levels that were expected to develop monitoring and evaluation tools for the programme and mainstream monitoring and evaluation into the programme. The objective was to ascertain transparency in the use of programme funds, as well as to ensure effective and efficient implementation of the programme. The committees were to carry out at least one quarterly monitoring and evaluation exercise at constituency levels and carry out a monitoring and evaluation exercise at the close of six months at national level. They were

to prepare monitoring and evaluation reports that were to be submitted to the parent ministries for onward transmission to Treasury.

Kenyatta (2009) cites that the ESP Global Information System Monitoring and Evaluation initiative by the Ministry of Finance is a platform that uses the internet to update the status of ESP project countrywide. The ESP website and GIS system are meant to increase efficiency, objectivity, and transparency in monitoring, evaluation and impact assessment of projects (Odie, 2012). The ESP website and platform was one of the first Government portals to use the county framework as its unit of reference, making the ministry of Finance a pioneer in envisioning and operationalising the aspirations of the new governance structures for access to information. Objectives of the GIS mapping tool system are to enhance simultaneous diffusing of ESP information, feedback and interactive platform between the Government and stakeholders. These tools provide a structured framework in which “real time” project management updates can be undertaken with the click of a button. Hence, it offers effective monitoring, evaluation and reporting framework that boosts objectivity, transparency, and accountability for both government and the public to keep track and affirm the progress of project implementation. It also provides a tertiary level monitoring and evaluation framework where citizens assisted government in verifying project status and implementation (PMBOK, 2013). The tool therefore inspires community members to engage in and maintain ownership in projects meant for the development of the locals and motivates the locals to gather insight in the importance of volunteering in project activities till they reach the final phase.

2.3 Theoretical Framework

The researcher has adopted two theories, namely community participation (CP) theory and sustainability theory. The rationale for the choice of these theories is that they are deemed appropriate in examining the problem of sustainability of water projects and stakeholder participation. The theories will also help in answering the questions on the specific research objectives regarding the influence of stakeholder participation in project formulation, financing, implementation, and monitoring and evaluation.

2.3.1 Community Participation (CP) Theory

The demand-responsive strategy calls for community participation in water service delivery. Proponents of this approach, including Vohland and Boubacar (2009) postulate that it is applicable as an alternative strategy in improving water access to the marginalised communities (Anderson & Ostrom, 2008). The demand-responsive approach is therefore subsumed under the context of the community participation theory as an alternative approach to sustainability of water projects.

In Africa, the CP ideology gained prominence during the 1960s and more specifically in that projects funded by donors. Alabaster (2010) however posits that community participation is not a recent phenomenon since it was practised in pre-colonial Africa when community members came together to carry out some local development projects. In Tanzania, communities worked collectively in activities, including building roads, schools, and community health units while using their own materials and labour (Njon, 2010). Kenya also experienced the same under the late President Jomo Kenyatta and leadership of Jaramogi Oginga Odinga, communities under the guise of the spirit of

participation coined the term *harambee*, a Swahili word, meaning pulling together for the realisation of development.

Community participation theory rests on the premise that the local and national governments have failed in adequately managing community projects. It also emphasizes on the need to maximise scarce resources such as water and land for the benefit of communities (Wisser et al., 2010). CP is an effective tool for positive outcomes in projects in which it has been administered, particularly in the inclusion of stakeholders in development projects in the water service sector in Africa.

2.3.2 Sustainability Theory

Sustainability tries to integrate and give priority to social responses to cultural as well as environment problems. An economic model focuses on sustaining financial capital and natural resources, and it looks at both ecological integration and biological diversity (Enfors, 2009). Sustainability generally implies the capacity to maintain some outcome, entity, and processes over a period. The concept of sustainability comprises of ways of mitigating environmental problems that interfere with healthy economic conditions, social, and ecological systems. The question would whether humans are capable of sustaining themselves without necessarily depleting the resources they depend on.

The theory of sustainability is grounded on the basic tenet that as a development aimed to promoting the satisfaction of the felt needs without deterring the coming generations from satisfying their personal needs (Rockstrom et al., 2009). Sustainability models looks at sustainability in the context of what have to be sustained. Economic, political, and

ecological models are never mutually exclusive but integrate the complementary strengths of each other.

Economic model of sustainability posits to maintain opportunity, and often in the form of capital. According to Wallace & Grover et al., (2008), sustainability should be perceived as investment option that demands careful selection and use of resources to create new opportunities of greater or equal value. **The use of the sustainability model confirms that the water sustainability system is affected by environmental, institutional, technical, and socio-economic factors** (Vohland & Boubacar, 2009). Stakeholders must therefore make institutional arrangements for operating and maintaining water systems that meet the felt needs of the direct beneficiaries.

2.4. Summary of Literature and Gaps

The review of literature related to this problem of study presents stakeholder participation to have a rich historical account, dating back to the pre-independence times of 1960s in Kenya and Tanzania. **Community participation is widely used in projects of water service delivery and sustainability in the less developed economies.** Hence, community participation (CP) theory and sustainability theory have found their practical relevance in examining the influence of stakeholder participation in water sustainability projects.

Extensive literature reviews are found on factors that curtail the provision and supply of water, but only a few focuses specifically on stakeholder participation in project formulation, financing, implementation, and monitoring and evaluation, with specific reference to Kwanza Sub-county of Trans-Nzoia County. The current study will be based on this study locale because this is one of the sections of Kenya that face the challenge of

water shortage, with water coverage of below 50 percent. The population is high of about 193,087 people, most of who live below the poverty line and can barely access clean water supply for domestic consumption and commercial use.

The researchers seemed to have relied a lot on collecting primary data but forgetting that they needed a bit of secondary data to guide the study. The current study intends to incorporate both as the researcher feel that a large data set will be adequate for this research. Secondary data will be gathered from governmental publications, agencies, and NGOs in charge of water provision in Kwanza Sub-County.

The techniques of analysis used in these studies appear to be insufficient, as data collected have been subjected to simple descriptive analysis of statistic mean, percentages, and frequency charts. The current study intends to fill these research gaps by incorporating a more robust tool of analysis, that is, the use of a multiple regression analysis to establish the strength and direction of correlation between stakeholder participation and sustainability of water projects.

2.5 Conceptual Framework of the Study

The conceptual framework is as follows:

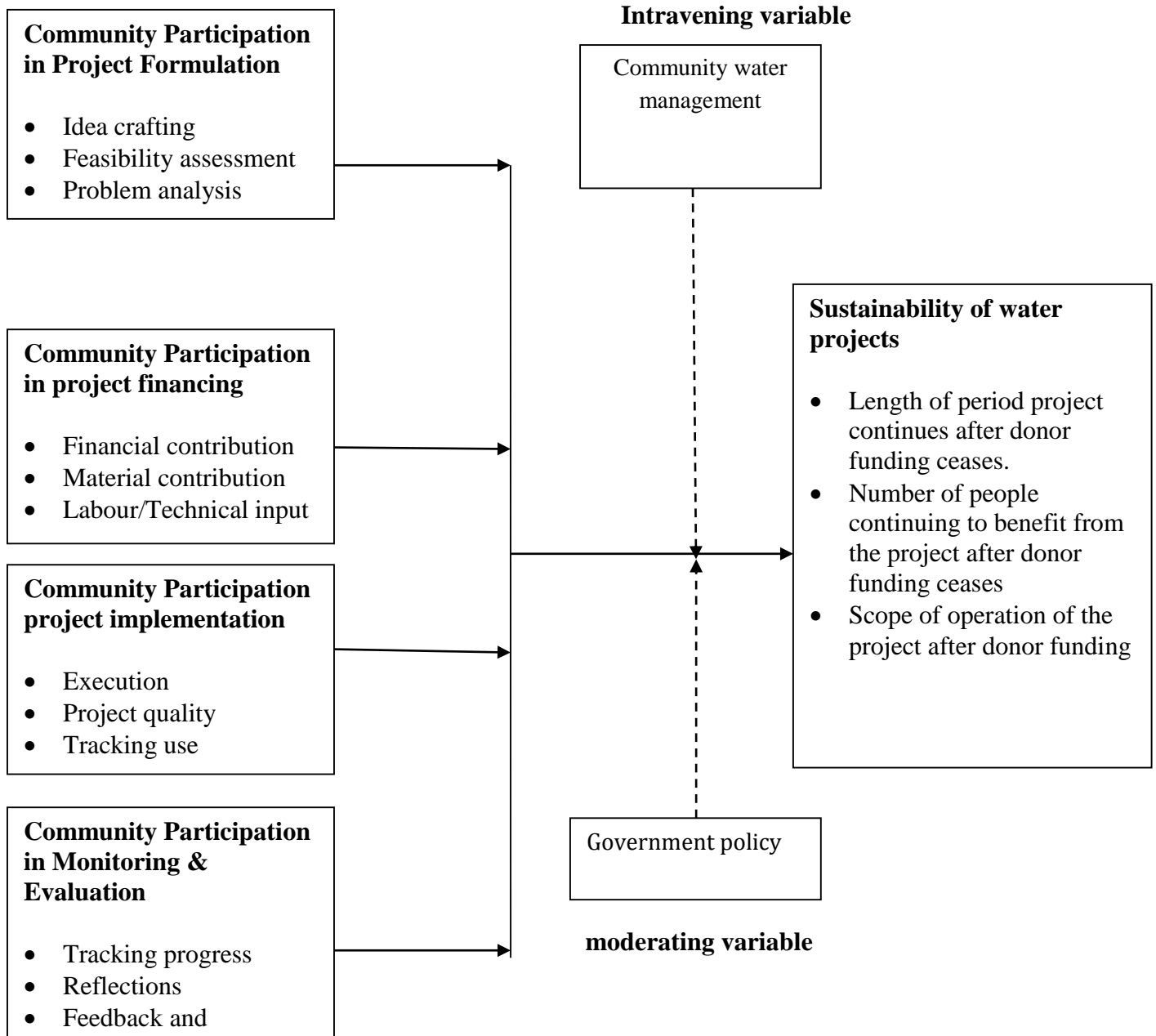


Figure 1.1: Conceptual framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

This chapter depicts how data was sourced, analysed and gives a justification for the methodological approaches adopted, ethical considerations have also been discussed.

3.2 Research Design

Descriptive survey design was utilized. Bowling, (1999) noted that a descriptive survey research design allows for the use of collected data to do analysis and make inferences. The design is most recommended since it delineates a phenomenon as it is and justifies the current scenario, the design allowed the researcher to gather information, summarize, present relationships. It enables the researcher to capture people's opinion, attitudes concerning the influence of community participation on sustainability of water projects in Kwanza Sub-county.

3.3 The Target Population

Borg and Gall (1989) defined target population as all the members of a group to which inferences can be made. This study targeted households in Kwanza Sub-county, Transnzoia County. The study targeted the household heads, in the absence of the household head, the significant other was also targeted. According to 2013 population census estimates, Kwanza has a population of 193,087, the wards in Kwanza are Kwanza, Keiyo, Bidii and Kampomboi. Kwanza sub-county was chosen for the study because according to the report by UNEP/SEI (2009), residents of Kwanza Sub-County are among some of the Kenyans with the lowest accesses rate to clean and piped water

supply. There are 32,181 households in Kwanza sub-county, Transnzoia County (Kenya Population Census).

3.4 Sampling Sample Size and Sampling Techniques

3.4.1 Sample Size

Given a population size of 32,181 households, the researcher used the Sekaran (2003) sample determination formula worked out in a predetermined table see appendix II. This therefore gave a sample size of 380 Households

3.4.2 Sampling Procedure

Since all the wards in Kwanza sub-county are homogenous in so far as water supply is concerned. The researcher used simple random sampling in picking the households for interviewing. The first household was identified and skipping intervals were as follows:

$\frac{32,181}{380}=84$. The researcher therefore picked every 84th household during the until the required sample size was reached.

3.5. Research Instruments

Questionnaire was used to collect data. The researcher developed questions based on the variables and the indicators that need to be measured. The questionnaire had six sections: Section A solicits responses on Bio-data of the respondent, Section B: Community participation in project formulation and sustainability of projects in Kwanza sub-county, Section C: Community participation in financing and sustainability of water projects in Kwanza sub-county, Section D: Community participation in implementation and sustainability of water projects in Kwanza sub-county, Section E: Community participation in monitoring and evaluation and sustainability of water projects in Kwanza Sub-county ,and Section F: Sustainability of water projects in Kwanza Sub-county.

3.5.1 Pilot testing of the data collection instruments

Pilot testing is a process of establishing the efficacy of the data collection instruments in for a real study; it is a way of knowing if the data collection instruments are well designed. According to Mugenda and Mugenda (2003) the sample used during pre-test can be between 1% to 10% equivalent of the study sample. This therefore means that 38 households were sampled for pre-testing in the neighboring Kiminini Constituency.

3.5.2. Validity of the Instruments

Validity was ensured and by working with two experts on matters of water and irrigation and the university lecturers. The experts checked the questions against the objectives, the variables and the indicators under each variable. These efforts enhanced the content validity of the questionnaires, questions were modified accordingly.

3.5.3 Reliability of the Instruments

A questionnaire that generates similar findings in two different occasions is termed as reliable. The researcher used the split-half method to compute the reliability of the instruments. The coefficient were computed using the Spearman rank order correlation and established as 0.79. The questionnaires were therefore reliable Orodho (2009).

3.6 Data Collection Procedures

Study permit was given by National Committee of Science, Technology and innovation, a transmittal letter from the University of Nairobi The Sub-county Officer of water and irrigation in Kwanza also gave a go-ahead for the study. The researchers then segment the sub-county into sub-locations where respondents were picked. Upon getting into the sub-location, the researchers reported to the chiefs and assistant chiefs and explain the purpose of the visit. Thereafter, the researchers went ahead and identified the first

household, skipping patterns were then introduced and the other households identified. The researcher sought informed consent of the potential respondents, those who consented were interviewed. The researcher translated the questions into the local dialect for easy understanding and response. Upon concluding the interview, the researcher asked the respondents if they have any question for the researcher which was responded to. The researcher then cross-checked if all the questions had been answered satisfactorily and thanked the respondent

3.7 Data Analysis

At the pre-analysis stage, the researcher sought and checked all the questionnaires for completeness. The quantitative data was assigned codes assigned and thereafter entered into the Statistical Package for Social Sciences version 21. The quantitative data were analyzed both using both descriptive and inferential statistics. The descriptive analysis generated frequencies, proportions, mean and standard deviation while inferential analysis were generated Spearman’s correlations to show the relationship between the dependent and the independent variables. The researcher also used logit regression model to do predictions:

The Logit regression model is written as:

$$P(Y_1 = 1) = \pi = \frac{e^{\beta_0 + \beta_i x_i}}{1 + e^{\beta_0 + \beta_i x_i}} \dots\dots\dots 3.4$$

This can be written as a linear combination of the dependent variable as:

$$\begin{aligned} \ln\left(\frac{\pi}{1 - \pi}\right) &= \beta_0 + \beta_i x_i \dots\dots\dots \\ &= \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 \end{aligned}$$

Where :

$\ln\left(\frac{\pi}{1-\pi}\right)$ is the logit term

β_0 is the constant

β_1x_1 is the coefficient of water source

β_2x_2 is the coefficient of water coverage

β_3x_3 is the coefficient of water access

β_4x_4 is the coefficient of water quality

Qualitative data from the open-ended items were analyzed through content analysis; organizing based on the emerging themes. The findings were presented through tables, graphs and narrations.

3.8 Ethical Considerations

Mulwa (2006) noted that ethical considerations that ought to be followed by researchers. The researcher sought and informed consent from the respondents before they could be interviewed. The study also ensured respondent confidentiality, anonymity. The study ensured neutrality and respect for the opinions of the respondents.

3.9 Operationalization of variables

Objectives	Indicators	Instrument	Level of measurement	Data Analysis Technique
To examine the influence of stakeholder participation in project formulation on sustainability of water projects in Kwanza Sub-county	<ul style="list-style-type: none"> • Idea generation • Feasibility study • Problem identification 	Questionnaire	All ordinal	Frequency, Mean Standard Deviation Spearman Correlation
To assess the influence of stakeholder participation in project financing on the sustainability of water projects in Kwanza Sub-county.	<ul style="list-style-type: none"> • Financial contribution • Material contribution • Labour/Technical input 	Questionnaire	All ordinal	Frequency, Mean Standard Deviation Spearman Correlation
To determine the influence of stakeholder participation in project implementation on sustainability of water projects in Kwanza Sub-county.	<ul style="list-style-type: none"> • Execution • Project quality • Tracking use 	Questionnaire	All ordinal	Frequency, Mean Standard Deviation Spearman Correlation
To find out the influence of stakeholder in project monitoring and evaluation on sustainability of water projects in Kwanza Sub-county	<ul style="list-style-type: none"> • Tracking progress • Reflections • Feedback and corrective measures 	Questionnaire	All ordinal	Frequency, Mean Standard Deviation Spearman Correlation

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

In this chapter, an analysis is provided, Interpretations given and the findings discussed per objective. The sub-topics in this chapter are aligned to the study objectives and include: Respondents' bio-data, project formulation and sustainability of water projects, project financing and sustainability of water projects, project implementation and sustainability of water projects, and monitoring and evaluation and sustainability of water projects.

4.2 Response Rate

The researcher worked out the questionnaire response rate for the study and is as presented in Table 4.1

Table 4.1: Response rate

Sample size	Respondents interviewed	Percent
380	377	99.21%

The response rate as per the research was at 99%, this was considered adequate for analysis and reporting, 70% and above is very good (Mugenda & Mugenda, 2003).

4.3 Respondent Bio-data

Presented here are: age of the respondent, gender, level of education, occupation, number of people present at their houses, major water source serving their households and the duration of time stayed in the given community.

4.3.1 Respondents age

Table 4.2: Respondents age

Age bracket	Frequency	Percent
Below 20	13	3.4
21-30	144	38.2
31-40	93	24.7
41-50	59	15.6
51-60	29	7.7
61 and above	39	10.3
Total	377	100.0

More than a third of the respondents at 144(38.2%) were between 21-30 years of age, nearly one quarter at 93(24.7%) were aged between 31-40, nearly one fifth at 59(15.6%) were aged between 41-50, those aged 61 and above at 39(10.3%), 51-60 years at 29(7.7%) with the minority at 13(3.4%) below 20 years of age.

4.3.2 Respondents gender

Table 4.3: Respondents gender

Gender	Frequency	Percent
Male	224	59.4
Female	153	40.6
Total	377	100.0

Most of the respondents at 224(59.4%) were males while the minority who were more than two fifths at 153(40.6%) were females.

4.3.3 Respondents level of education

Table 4.4: Respondents level of education

Level of education	Frequency	Percent
Graduate	26	6.9
Diploma	79	21.0
KCSE	159	42.2
KCPE	94	24.9
No education	19	5.0
Total	377	100.0

More than two fifths of the respondents at 159(42.2%) were of KCSE level of education, nearly one quarter at 94(24.9%) were of KCPE level closely following were diploma holders at 79(21%) as graduates at 26(6.9%) and respondents with no education at 19(5%) came close with the latter forming the minority.

4.3.4 Respondents occupation

Table 4.5: Respondents occupation

Occupation	Frequency	Percent
Self employed	133	35.3
Casual jobs	88	23.3
Employed	41	10.9
Not working	115	30.5
Total	377	100.0

More than a third of the respondents at 133(35.3%) were self-employed, respondents who were not working closely following at 115(30.5%) as those with casual jobs nearly a quarter at 88(23.3%) while the employed respondents came least at 41(10.9%).

4.3.5 Number of people present at respondent's household

Table 4.6: Number of people present at respondent's household

Household size	Frequency	Percent
Two and below	79	21.0
3-6	155	41.1
7-10	143	37.9
Total	377	100.0

More than two fifths of the respondents at 155(41.1%) had between 3-6 members in their households, more than a third of the respondents at 143(37.9%) stated that they had 7-10

people in their households as the respondents with two and below members in their households formed the minority with slightly more than a fifth of the respondents at 79(21%) stating so.

4.3.6 Major water source serving the respondents household

Table 4.7: Major water source serving the respondents household

Water source	Frequency	Percent
Borehole	53	14.1
Protected well	54	14.3
Open well	61	16.2
River, pond, lake or canal)	121	32.1
Tap	88	23.3
Total	377	100.0

Nearly one third of the respondents households at 121(32.1%) were mostly served with river, pond, lake or canal water sources, slightly more than a fifth at 88(23.3%) were served with tap water closely followed by open well at 61(16.2%), protected well at 54(14.3%) and borehole at 53(14.1%) with the latter being the least water source serving the households.

4.3.7 Duration stayed in the community

Table 4.8: Duration stayed in the community

Duration of stay	Frequency	Percent
1-5	19	5.0
6-10	66	17.5
11-15	265	70.3
Above 15	27	7.2
Total	377	100.0

Most of the respondents at 265(70.3%) had stayed in the community for 11-15 years, nearly a fifth at 66(17.5%) having stayed for 6-10 years with those staying for above 15 years at 27(7.2%) and 1-5 years forming the minority at 19(5%).

4.4 Community participation in project formulation and sustainability of water projects

Presented here are the findings to the first objective of the study, To examine the influence of stakeholder participation in project formulation on sustainability of water projects in Kwanza Sub-county. The frequencies are shown on the table as well as the mean, standard deviations. The responses are as shown in table 4.9

Table 4.9: Project formulation and sustainability of water projects

Statement	SD	D	N	A	SA	Mean	SD
I was involved in the idea generation for the water projects	14.1%	10.6%	13.8%	32.1%	29.4%	3.52	1.38
I actively participated in the feasibility study for the water projects	19.1%	18%	14.3%	37.9%	10.6%	3.03	1.33
I was present and actively engaged in the problem identification on the issues of focus for the water projects	14.9%	26.8%	21.2%	23.9%	13.3%	2.94	1.28
I participated in designing the steps and deciding the resources or conditions required to implement the water project	14.1%	17%	18.6%	33.4%	17.0%	3.22	1.30
I had a say in the justifying the intention to implement or execute the water project	23.9%	10.6%	20.7%	34.7%	10.1%	2.97	1.35
Mean of means						3.14	

Those respondents who were involved in idea generation were (A+SA) which is more than three fifths of the respondents at 232(61.5%), nearly a quarter at (SD+D)93(24.7%)

stating that they were not involved in idea generation, the respondents who were unclear whether they were involved or not, being the neutral at 52(13.8%). It was common place that the respondents were involved in the idea generation for the water projects to a moderate extent (Mean=3.52, SD=1.378). Chitonge (2014) observed that stakeholder participation in identification of projects is critical for the people participate in identifying their felt needs and ranking them according to priority. Alabaster (2010) also asserted that involving the stakeholders at the inception of the project is also imperative in ensuring that they are engaged throughout the entire project life to prevent failure in sustaining the required level of development.

Nearly one half of the respondents at 183(48.5%)(A+SA) had actively participated in the feasibility study for the water projects, more than a third at 140(37.1%) (SD+D) tending to differ with nearly a fifth of the respondents uncertain whether they actively participated in the study or not forming the minority at 54(14.3%). It was common that the respondents had actively participated in the feasibility study for the water projects to a moderate extent (Mean=3.03, SD=1.324). Banerjee and Morella (2011) noted that participative approaches in the project cycle such as involving people in feasibility studies are important for the success of any project. Banerjee and Morella observed that most development projects have stagnated or collapsed because of a lack of certain significant participatory processes involving people.

Two fifths of the respondents at 157(41.7%) (SD+D) were absent and were not actively engaged in the problem identification on the issues of focus for the water projects, closely followed with those who were present and were actively engaged in the problem

identification who were slightly more than a third at 140(37.2%)(A+SA) as those unsure whether they were present and actively participated in the problem identification or not formed the minority as they were slightly more than a fifth at 80(21.2%). It was typical that the respondents were present and actively engaged in the problem identification on the issues of focus for the water projects to a moderate extent (Mean=2.94, SD=1.277). Chitonge (2014) posits it is important for people to participate in identifying their felt needs and ranking them according to priority. He further noted that when stakeholders are fully engaged in this process, they are likely to own the process as theirs and therefore manage it effectively. At this stage, stakeholders identify and prioritize the core of the problems and their causes and effects (Nyandemo & Kongere, 2010).

Most of the respondents at 190(50.4%)(A+SA) had participated in designing the steps and deciding the resources or conditions required to implement the water project, nearly a third at 117(31.1%) (SD+D) stated that they had not participated as the minority who were nearly a fifth at 70(18.6%) were unsure whether they had participated or not. It was commonplace that the respondents participated in designing the steps and deciding the resources or conditions required to implement the water project to a moderate extent (Mean=3.22, SD=1.304).Cornwall (2008) however throws caution that establishing the availability of project funds alone cannot sufficiently guarantee the success of the project and its sustainability. Bakalian and Wakeman (2009) contend that stakeholders' involvement on resourcing allows them to accept the project and hold the local leadership accountable for the funds used and how the project quality improves.

Nearly half of the respondents at 169(44.8%) (SA+A) had a say in the justifying the

intention to implement or execute the water project, closely followed by those who had no say who were slightly more than a third at 130(34.5%) (SD+D), as the least who were more than a fifth at 78(20.7%) were unclear whether they had a say or not. It was typical to a moderate extent that the respondents had a say in the justifying the intention to implement or execute the water project (Mean=2.97, SD=1.347).Overall, the respondents participated in project formulation to a moderate extent (Mean of means =3.14).

4.4.2 Correlation between community participation in project formulation and Sustainability of water projects

The researcher did a Spearman's correlation to examine the association between stakeholder participation in project formulation and sustainability of water projects. The results are as shown in Table 4.10

Table 4.10: Correlation between Project formulation and Sustainability of water projects

	Variables	Descriptor	Stakeholder participation in project formulation	Sustainability of water projects
Spearman's rho	Stakeholder participation in project formulation	Coefficient	1.000	.761**
		P-value	.	.000
	Sustainability of water projects	N	337	337
		Coefficient	.761**	1.000
		P-value	.000	.
		N	337	337

There was a significant strong positive correlation between Project formulation and Sustainability of water projects, Spearman's rho(r) = 0.761, p<0.000, CL=95%. This meant that pumping a lot of resources on the formulation of water projects would make them more sustainable. This finding is supported by Kingori (2014) that there was a significant relationship between community participation in formulation phase and the completion and sustainability of development projects.

4.5 Community participation in project financing and sustainability of water projects

This section presents findings in relation to the second objective of the study, to assess the influence of stakeholder participation in project financing on the sustainability of water projects in Kwanza Sub-county. The frequencies are shown on the table as well as the mean, standard. The responses are as shown in table 4.11

Table 4.11: Project financing and sustainability of water projects

Statement	SD	D	N	A	SA	Mean	SD
I contributed some money during the construction of a water project in my community	33.2%	6.9%	16.7%	26%	17.2%	2.87	1.528
I contributed some material e.g. sand, stones during the construction of a water project in my community	27.6%	13.3%	18.6%	27.3%	13.3%	2.85	1.423
I was part of the workforce during the construction of a water project in my community	24.7%	11.9%	17.5%	29.7%	16.2%	3.01	1.434
We sometimes contribute some money to finance the maintenance of a water project in my community	30.5%	14.1%	16.2%	25.2%	14.1%	2.78	1.461
I gave ideas that were useful during the construction of a water project in my community	27.6%	13.3%	13.3%	28.6%	17.2%	2.95	1.488
Mean of means						2.89	

More than two fifths of the respondents at 163(42.2%) (SA+A)contributed some money during the construction of a water project in my community while those who had not contributed following closely as they were two fifths at 151(40.1%)(SD+D). The

respondents at 63(16.7%) who were nearly a fifth were uncertain whether they contributed some money or not forming the minority. It was commonplace that the respondents contributed some money during the construction of a water project in their community to a moderate extent (Mean=2.87, SD=1.528). Gaynor (2013) asserts that after sourcing for funding, effective fund coordination is what ensures that invested money show results. Cheruiyot (2012) added that diversified funding is the cornerstone of a sound project and enhances sustainability.

Slightly more than two fifths of the respondents at 154(40.9%)(SD+D) did not contribute some material e.g. sand, stones during the construction of a water project in my community with almost the same number of respondents at 153(40.6%) (SA+A)contributing some materials during the construction as the minority who were nearly a fifth of the respondents at 70(18.6%) were unsure whether they had contributed some materials for the project or not. It was typical that the respondents contributed some material e.g. sand, stones during the construction of a water project in their community to a moderate extent (Mean=2.85, SD=1.423). Cheruiyot (2012) noted that the use of local available materials would lower the project cost and give room for greater participation of stakeholders.

Nearly half of the respondents at 173(45.9%) (SA+A)were part of the workforce during the construction of a water project in their community with those not part of the workforce nearly two fifths at 138(36.6%)(SD+D) as the least respondents who were almost a fifth at 66(17.5%) unsure whether they were part of the workforce or not. It was popular to a moderate extent that the respondents were part of the workforce during the

construction of a water project in their community (Mean=3.01, SD=1.434).

Nearly half of the respondents at 168(44.6%)(SD+D) did not contribute some money to finance the maintenance of a water project in my community with nearly two fifths of the respondents at 148(39.3%) (SA+A) contributing money while the minority who were nearly a fifth of the respondents at 61(16.2%) were unclear whether they contributed money to finance the maintenance of the project in the community or not. Stakeholders contributed money to finance the maintenance of a water project in their community to a moderate extent (Mean=2.78, SD=1.461).Nyonje, Ndunge, and Mulwa (2012) asserted that communities should recognize the contribution of the project staff and fully involve lead agency and coordinators in the planning and implementation of projects within the budgeted financial resources.

Nearly half of the respondents at 173(45.8%)(SA+A) gave ideas that were useful during the construction of a water project in my community, two fifths of them at (SD+D) 154(40.9%) never gave useful ideas during the construction of a water project in the community as the least who were nearly a fifth at 50(13.3%) were unsure whether they gave useful ideas or not. The community members gave ideas that were useful during the construction of a water project in their community to a moderate extent (Mean=2.95, SD=1.488). Overall, the respondents participated in project financing to a moderate extent (Mean of means=2.89),this implied that the projects were largely financed externally with community members coming in to contribute in kind e.g. labour.

4.5.2 Correlation between Community participation in project financing and sustainability of water projects

The researcher did a Spearman's correlation to examine the association between stakeholder participation in project financing and sustainability of water projects. The results are as shown in Table 4.12

Table 4.12: Correlation between Project Financing and Sustainability of water projects

	Variables	Descriptor	Stakeholder participation in project financing	Sustainability of water projects
Spearman's rho		Coefficient	1.000	.709**
	Stakeholder participation in project financing	P-value	.	.000
		N	337	337
	Sustainability of water projects	Coefficient	.709**	1.000
		P-value	.000	.
		N	337	337

There was a significant strong positive correlation between project financing and sustainability of water projects, Spearman's rho(r) = 0.709, p<0.000, CL=95%. This implies that if the water projects were adequately financed then there would be an improvement in the sustainability of the water projects. Imunya (2010) also established that financial resources positively influenced project sustainability.

4.6 Community participation in project implementation and sustainability of water projects

This section presents findings in accordance to the third objective of the study, To determine the influence of stakeholder participation in project implementation on sustainability of water projects in Kwanza Sub-county. The frequencies are shown on the table as well as the mean, standard deviations that were analysed and interpreted. The responses are as shown in table 4.13

Table 4.13: Project implementation and sustainability of water projects

Statement	SD	D	N	A	SA	Mean	SD
I have been part and parcel of the water project in my community	0.0%	0.0%	4.2%	73.2%	22.5%	4.18	0.49
I took part in ensuring that the water project was constructed according to specification and expectations of the community members	2.7%	8.5%	0.0%	66.3%	22.5%	3.98	0.90
I participated in testing whether the water project is working for/serving my community	2.7%	4.2%	2.9%	67.6%	22.5%	4.03	0.82
I am give feedback/raise issues when something is going wrong at the water point	2.7%	11.4%	0.0%	63.4%	22.5%	3.92	0.96
I monitor to ensure that the water points are used properly and that the water is safe	4.2%	5.8%	0.0%	64.5%	25.5%	4.11	0.69
Mean of means						4.04	

Majority of the respondents at 361(95.7%) (SA+A) had been part and parcel of the water project in the community as the minority at 16(4.2%) were unclear whether they had been

part and parcel of the water project in my community or not, none of the respondents confirmed that they were not part and parcel of water project in the community 0(0.0%)(SD+D). It was commonplace that the respondents had been part and parcel of the water project in the community to a great extent (Mean=4.18, SD=0.485).

Majority of the respondents at 385(88.8%)(SA+A) took part in ensuring that the water project was constructed according to specification and expectations of the community members while the least of them at 42(11.2%)(SD+D) never took part in ensuring that the water project was constructed according to specification and expectations of the community members. It was typical that the respondents took part in ensuring that the water project was constructed according to specification and expectations of the community members to a great extent (Mean=3.98, SD=0.897). The participation of community members in the implementation process is critical, UNEP/SEI (2009) stated that nearly two-thirds of projects are often unsuccessful because of difficulties experienced in trying to control project budgets, deliverables, and schedules; hence, the need to manage and control scope is important.

Majority of the respondents participated at 340(90.1%)(SA+A) in testing whether the water project was working for/serving their community, less of a fifth of them at 26(6.9%)(SD+D) did not participate with the minority at 11(2.9%) unclear whether they participated in testing whether the water project was working for/serving their community or not. It was popular that the respondents participated in testing whether the water project was working for/serving their community to a great extent (Mean=4.03, SD=0.815).

Respondents who gave feedback/raise issues when something was going wrong at the water point were the majority at 324(85.9%)(SA+A), as the minority who were less than a fifth at 53(14.1%)(SD+D) never gave feedback/raise issues when something was going wrong at the water point. It was commonplace to a great extent that the respondents gave feedback/raised issues when something was going wrong at the water point (Mean=3.92, SD=0.957).

Respondents who monitor to ensure that the water points are used properly and that the water is safe were the preponderance at 339(90%) (SA+A)as those who did not monitor the water points forming the minority at 38(10%) (SD+D). It was popular to a great extent that the respondents monitor to ensure that the water points are used properly and that the water safe (Mean=4.11, SD=0.687).Overall, the respondents participated in project implementation to a great extent (Mean of means=4.04),this implied that the community members played important roles in day to day execution of water projects within their communities.

4.6.2 Correlation between Community participation in project implementation and sustainability of water projects

The researcher did a Spearman’s correlation to examine the association between project implementation and sustainability of water projects. The results are as shown in Table 4.14

Table 4.14: Correlation between Project Implementation and Sustainability of water projects

	Variables	Descriptor	Stakeholder participation in project Implementation	Sustainability of water projects	
Spearman's rho	Stakeholder participation in project Implementation	Coefficient	1.000	.373	
		P-value	.	.061	
	Sustainability of water projects	N	337	337	
		Coefficient	.373	1.000	
			P-value	.061	.
			N	337	337

There was a significant weak positive correlation between project implementation and sustainability of water projects, Spearman's rho(r) = 0.373, p=0.061, CL=95%. This meant that implementation of the water projects did not guarantee the sustainability of the water projects. Supporting these findings is a research by Mbae (2010) establishing that stakeholder involvement that contributed to the low performance and sustainability of beekeeping project.

4.7 Project monitoring and evaluation and sustainability of water projects

This section presents findings on the fourth objective of the study; to find out the influence of stakeholder in project monitoring and evaluation on sustainability of water projects in Kwanza Sub-county. The frequencies are shown on the table as well as the mean, standard deviations that were analysed and interpreted. The responses are as shown in table 4.15

Table 4.15: Project monitoring and evaluation and sustainability of water projects

Statement	SD	D	N	A	SA	Mean	SD
There is a committee constituted by community members to monitor water projects in my community	20.2%	24.4%	9.5%	24.9%	21%	3.02	1.46
I participate in routine tracking of water use from water projects in my community	13.5%	26.5%	0.0%	36.6%	23.3%	3.30	1.42
I participate community reflections regarding water project in my community	43%	25.7%	1.3%	14.6%	15.4%	2.34	1.52
I participate in assessing whether the water project are bringing the intended benefits to my community members	14.6%	19.6%	20.4%	24.7%	20.7%	3.17	1.35
We are often given feedback on water use and measures that we need to take to benefit more from the projects	10.6%	19.4%	15.4%	131%	23.6%	3.38	1.32
Mean of means						3.04	

Nearly half of the respondents at 173(45.9%) (SA+A) stated that there was a committee constituted by community members to monitor water projects in their community narrowly followed by slightly more than two fifths of them at 168(44.6%) (SD+D) who stated that there was no committee, as the least at 36(9.5%) were unclear whether the

committee was in existence or not. A committee was constituted by community members to monitor water projects in the community to a moderate extent (Mean=3.02, SD=1.464). Community participation in monitoring and evaluation Challa (2011) contends that monitoring enhances compliance with the required procedures and achievement of planned targets.

Most of the respondents at 226(60%)(SA+A) participated in routine tracking of water use from water projects in their community as two fifths of them at 151(40%)(SD+D) did not participate in routine tracking forming the minority. It was popular that respondents participated in routine tracking of water use from water projects in their community to a moderate extent (Mean=3.30, SD=1.422). It is evident that the community members were able to tracking the progress of a project against planned tasks to ensure that the project is moving towards the right direction and at the right speed to achieve its outlined objectives as asserted by Nyonje, Ndunge and Mulwa (2012).

More than two thirds of the respondents at 259(68.7%) (SD+D) did not participate in community reflections regarding water project in their community, nearly a third participated at 113(30%) (SA+A), as those unclear whether they participated in the reflections or not forming the minority at 5(1.3%). It was typical to a low extent that respondents participated in community reflections regarding water project in the community (Mean=2.34, SD=1.518). Chitonge (2014) observed that community reflection is critical for project monitoring, he noted that community reflections also enables the project participants to gain analytical skills into comprehending their own difficult situations and come up with solutions to them.

Nearly half of the respondents at 171(45.4%) (SA+A) participated in assessing whether the water project were bringing the intended benefits to their community members, those who did not participate followed narrowly at 129(34.2%) (SD+D) while one fifth of them at 77(20.4%) uncertain whether they participated in the assessment or not. It was commonplace that respondents participated in assessing whether the water project was bringing the intended benefits to the community members to a moderate extent (Mean=3.17, SD=1.352).

Most of the respondents at 206(54.6%) (SA+A) were often given feedback on water use and measures that they needed to take to benefit more from the projects, nearly a third at 113(30%) (SD+D) never gave feedback while the minority at nearly one fifth at 58(15.4%) were unsure whether they often gave feedback on the water source and measures needed to be taken or not. The community members were given feedback on water use and measures that they needed to take to benefit more from the projects to a moderate extent (Mean=3.38, SD=1.317).Overall, the respondents participated in monitoring and evaluation to a moderate extent (Mean of mean=3.04), this implied that they participated in assessing progress, identifying of challenges and crafting action plans for greater success.

4.7.2 Correlation between community participation in monitoring and evaluation and sustainability of water projects

The researcher did a Spearman's correlation to examine the association between stakeholder participation in monitoring and evaluation and sustainability of water projects. The results are as shown in Table 4.16

Table 4.16: Correlation between Monitoring and Evaluation and Sustainability of water projects

	Variables	Descriptor	Stakeholder participation in monitoring and evaluation	Sustainability of water projects
Spearman's rho	Stakeholder participation in monitoring and evaluation	Coefficient	1.000	.496**
		P-value	.	.010
		N	337	337
	Sustainability of water projects	Coefficient	.496**	1.000
		P-value	.010	.
		N	337	337

There was a significant moderate positive correlation between Monitoring and Evaluation and sustainability of water projects, Spearman's rho(r) = 0.496, $p=0.010$, CL=95%. This meant that monitoring and evaluation moderately influenced the sustainability of the water projects. The findings are supported by those of King'ori (2014) that participation in monitoring and evaluation is positively associated with project completion, $r=0.799$.

4.8 Sustainability of water projects

Presented here are findings in relation to the dependent variable of the study. The frequencies are shown on the table as well as the mean, standard deviations that were analysed and interpreted. The responses are as shown in table 4.17

Table 4.17: Sustainability of water projects

Statement	SD	D	N	A	SA	Mean	SD
Our water projects can continue existing even without external funding from the projects	9%	7.4%	9.3%	36.6%	37.7%	3.86	1.25
Our water projects are meeting the current needs of the people without compromising the opportunities of future generations	15.9%	6.9%	31.8%	18%	27.3%	3.34	1.36
Our water project has maximized the use of local resources in the implementation process	12.7%	12.2%	0.0%	52%	23.1%	3.85	0.91
Our water projects has established a number of linkages with other local organization and government line ministries	0.0%	0.0%	0.0%	39.3%	60.7%	4.61	0.49
We have adequate expertise and skill to successfully run/manage the project	0.0%	0.0%	0.0%	39.3%	60.7%	4.61	0.48
Mean of mean						4.05	

Majority of the respondents at 280(74.3%) (SA+A) stated that their water projects could continue existing even without external funding from the projects, nearly a fifth of them at 62(16.4%)(SD+D) differed as the least of them at 35(9.3%) were unclear whether the

water projects could continue existing even without external funding from the projects or not. It was commonplace to a great extent that respondents water projects could continue existing even without external funding from the projects (Mean=3.86, SD=1.251).

Nearly half of the respondents at 171(45.3%) (SA+A) stated that the water projects were meeting the current needs of the people without compromising the opportunities of future generations, nearly two thirds at 120(31.8%) (N) were uncertain whether they were meeting the current needs of the people without compromising the opportunities of future generations as the least at nearly a fifth at 86(22.8%) (SD+D) stating that the water projects were not meeting the current needs of the people without compromising the opportunities of future generations. It was typical that respondents water projects were meeting the current needs of the people without compromising the opportunities of future generations to a moderate extent (Mean=3.34, SD=1.367).

Majority of the respondents at 283(75.1%) (SA+A) stated that their water projects had maximized the use of local resources in the implementation process while less than a fifth at 94(24.9%)(SD+D) stated that it did not maximize the use of local resources in the implementation process forming the minority. It was popular that respondents water projects had maximized the use of local resources in the implementation process to a great extent (Mean=3.85, SD=0.918).

All the respondents at 377(100%) (SA+A) stated that their water projects had established a number of linkages with other local organization and government line ministries. It was commonplace that respondents had established a number of linkages with other local organization and government line ministries to a great extent (Mean=4.61, SD=0.489).

All the respondents at 377(100%) (SA+A) stated that they had adequate expertise and skill to successfully run/manage the project. It was commonplace that respondents had adequate expertise and skill to successfully run/manage the project to a great extent (Mean=4.61, SD=0.489). Overall, the respondents were engaged in the sustainability of the water projects in the community to a great extent (Mean of means=4.05).

4.9 Regressions Analysis

The researcher conducted a regression analysis and the findings were as shown in Table 4.18

	B	S.E.	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
Participation in formulation	.579	1.564	1	.711	1.783	.083	38.252
Participation in financing	1.582	1.898	1	.405	4.865	.118	200.855
Participation in implementation	2.526	1.916	1	.187	12.503	.293	534.303
Participation in monitoring and evaluation	-.533	1.826	1	.771	.587	.016	21.054
Constant	-13.868	7.682	1	.071	.000		

$$\ln\left(\frac{\pi}{1-\pi}\right) = Y = -13.868 + 0.579x_1 + 1.582x_2 + 2.526x_3 - 0.533x_4 + \varepsilon$$

β_0 is the constant

β_1x_1 is the coefficient of stakeholder participation in project formulation,

β_2x_2 is the coefficient of stakeholder participation in project financing,

β_3x_3 is the coefficient of stakeholder participation in project implementation,

β_4x_4 is the coefficient of stakeholders participation in project monitoring and evaluation.

Organizations that had stakeholder participation in formulation to a large extent were 1.783times more likely to realize sustainability compared to those that had stakeholder participation in formulation to a small extent. It was also established that organizations where stakeholders participated in project financing to a large extent were also 4.865times likely to realize project sustainability compared to where stakeholders participated in project financing to a small extent. Organizations where stakeholders participated in project implementation to a large extent were 12.503times more likely to achieve project sustainability compared to those where stakeholder participation was to a small extent. It was evident that organization where stakeholders participated in project monitoring and evaluation to a large extent were less likely (OR=0.587) to realize sustainability compared to where stakeholders participated to a small extent.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the researcher summarizes the findings, draws conclusions and recommendations. Contribution to body of knowledge and areas of further research are also discussed.

5.2 Summary of Findings

5.2.1 Community participation in project formulation on sustainability of water projects

With regard to the first objective, to examine the influence of community participation in project formulation on sustainability of water projects in Kwanza Sub-county. The study revealed that the respondents participated coming up with ideas for the water projects to a moderate extent (Mean=3.52, SD=1.378), they somewhat participated in the feasibility study for the water projects (Mean=3.03, SD=1.324). The stakeholders were also present and involved in problem analysis to a moderate extent (Mean=2.94, SD=1.277). The stakeholders also took part in developing frameworks for implement the water project to a moderate extent (Mean=3.22, SD=1.304) and had a say in the justifying the intention of implementing or executing water projects to moderate extent (Mean=2.97, SD=1.347). Overall, the respondents participated in project formulation to a moderate extent (Mean of means =3.14). There was a significant strong positive correlation between project formulation and sustainability of water projects, Spearman's rho(r) = 0.761, $p < 0.000$, CL=95%.

5.2.2 Community participation in project financing on the sustainability of water projects

In relation to the second objective, to assess the influence of community participation in project financing on the sustainability of water projects in Kwanza Sub-county. The study showed that stakeholders contributed money during the construction of a water project to a moderate extent (Mean=2.87, SD=1.528), contributed some material e.g. sand, stones during to a moderate extent (Mean=2.85, SD=1.423) and were some what part of the workforce during the construction of a water project (Mean=3.01, SD=1.434). Stakeholders gave ideas that were useful during the construction of a water project in their community to a moderate extent (Mean=2.95, SD=1.488). The respondents participated in project financing to a moderate extent (Mean of means=2.89). There was a significant strong positive correlation between project financing and sustainability of water projects, Spearman's rho(r) = 0.709, p<0.000, CL=95%.

5.2.3 Community participation in project implementation on sustainability of water projects

In line with the third objective, to determine the influence of community participation in project implementation on sustainability of water projects in Kwanza Sub-county. It was also established that the respondents had been part and parcel of the water projects to a great extent (Mean=4.18, SD=0.485), took part in ensuring that they were constructed according to specification and expectations to a great extent (Mean=3.98, SD=0.897). The stakeholders also participated in testing whether the water project was serving their community to a great extent (Mean=4.03, SD=0.815). It was also found out that the respondents gave feedback/raised issues when something was going wrong at the water

point to a great extent (Mean=4.03, SD=0.815) and monitored to ensure that the water points were used properly and that the water safe to a great extent (Mean=4.11, SD=0.687). The respondents participated in project implementation to a great extent (Mean of means=4.04). There was a significant weak positive correlation between project implementation and sustainability of water projects, Spearman's rho(r) = 0.373, p=0.061, CL=95%.

5.2.4 Community participation in project monitoring and evaluation on sustainability of water projects

In relation to finding out the influence of community participation in project monitoring and evaluation on sustainability of water projects in Kwanza Sub-county. The stakeholders formed committee of community members to monitor water projects in the community to a moderate extent (Mean=3.02, SD=1.464). The stakeholders participated in routine tracking of water use to a moderate extent (Mean=3.30, SD=1.422) and while participated in community reflections regarding water project in the community to a low extent (Mean=2.34, SD=1.518). The stakeholders participated in assessing whether the water project was bringing the intended benefits to the community members and were given feedback on water use and measures that they needed to take to benefit more from the projects to a moderate extent moderate extent (Mean=3.17, SD=1.352, Mean=3.38, SD=1.317) respectively. The stakeholders participated in monitoring and evaluation to a moderate extent (Mean of mean=3.04). There was a significant moderate positive correlation between monitoring and evaluation and sustainability of water projects, Spearman's rho(r) = 0.496, p=0.010, CL=95%.

5.3 Conclusions

The following conclusions were drawn based on the findings of the study:

5.3.1 Community participation in project formulation on sustainability

The researcher deduced that the respondents participated in project formulation to a moderate extent. It was also inferred that there is a significant strong positive correlation between project formulation and sustainability of water projects.

5.3.2 Community participation in project financing on the sustainability of water projects

It was also concluded that the respondents participated in project financing to a moderate extent. The researcher also deduced that there is a significant strong positive correlation between project financing and sustainability of water projects.

5.3.3 Community participation in project implementation on sustainability of water projects

It was deduced that the respondents participated in project implementation to a great extent. The researcher concluded that there is a significant weak positive correlation between project implementation and sustainability of water projects.

5.3.4 Community participation in project monitoring and evaluation on sustainability of water projects

It was also concluded that the respondents participated in monitoring and evaluation to a moderate extent. The researcher inferred that there is a significant moderate positive correlation between monitoring and evaluation and sustainability of water projects.

5.4 Recommendations

The following recommendations were made given the findings and conclusions of the study:

1. The government and other development agencies need to enhance stakeholder participation in project formulation, this would result into more sustainable water projects in Kwanza Sub-county.
2. The government and other development agencies need to strengthen stakeholder participation project financing, as this will enhance project ownership and result into more sustainable water projects in Kwanza Sub-county.
3. The government and other development partners should further adopt mechanism that for greater stakeholder engagement in project implementation, this would better outcomes in terms of sustainability of water projects in Kwanza Sub-county.
4. The government and other development partners need to encourage stakeholders in monitoring and evaluation processes for the water projects in Kwanza Sub-county. This would help them to identify gaps and challenges as well as the extent to which the project is impacting on their lives, this will enhance the sustainability of such projects.

5.5 Contribution to body of Knowledge

Objective

Contribution to body of knowledge

To examine the influence of stakeholder participation in project formulation on sustainability of water projects in Kwanza Sub-county. There was a significant strong positive correlation between Project formulation and Sustainability of water projects, Spearman's $\rho(r) = 0.761$, $p < 0.000$, CL=95%.

To assess the influence of stakeholder participation in project financing on the sustainability of water projects in Kwanza Sub-county. There was a significant strong positive correlation between project financing and sustainability of water projects, Spearman's $\rho(r) = 0.709$, $p < 0.000$, CL=95%.

To determine the influence of stakeholder participation in project implementation on sustainability of water projects in Kwanza Sub-county. There was a significant weak positive correlation between project implementation and sustainability of water projects, Spearman's $\rho(r) = 0.373$, $p = 0.061$, CL=95%.

To find out the influence of There was a significant moderate positive

stakeholder in project monitoring correlation between Monitoring and Evaluation and evaluation on sustainability of and sustainability of water projects, Spearman's water projects in Kwanza Sub- rho(r) = 0.496, p=0.010, CL=95%. county.

5.6 Areas for further study

The study established that community leadership played a role in ensuring stakeholder participation in the water projects. There is therefore need to establish the moderating effect of project leadership on the relationship between stakeholder participation and sustainability of water projects in Kwanza sub-county.

REFERENCES

APPENDICES

Appendix I: Questionnaire

<p>Dear Respondent my name is Diana Naker, I am a student at the University of Nairobi pursuing a master's degree in Project Planning and Management. As part of the requirements I am carrying out a research to establish the INFLUENCE OF COMMUNITY PARTICIPATION ON SUSTAINABILITY OF WATER PROJECTS IN KWANZA SUB-COUNTY, TRANS NZOIA COUNTY. Your answers or responses will remain confidential and will not be shared with anyone outside this study. Your name will not appear on the survey.</p>
SECTION A: DEMOGRAPHIC INFORMATION
1. State your age in completed years.....
2. State your gender a) Male b) Female
3. What is your level of education a) Post graduate b) Graduate c) Diploma d) KCSE e) KCPE f) No education
4. What is your occupation?
5. How many people do you have at your household?.....
6. Which water source mostly serves your household? a) Borehole b) Protected well c) Open well

(d) River, pond, lake or canal)
 (e) Tap
 (f) Other, (specify)-----

7. How long have you stayed in this community?

In the coming sections, you have been given statements with regard to your experience with community participation in water projects and how it affects the sustainability of such projects. Kindly pick a response that truly reflects on your opinion. **1 SD (Strongly Agree) 2 D (Disagree) 3 N (Neutral) 4 A (Agree) 5 SA (Strongly Disagree).**

	SECTION B: PROJECT FORMULATION	1 SD	2 D	3 N	4 A	5 SA
1	I was involved in the idea generation for the water projects					
2	I actively participated in the feasibility study for the water projects					
3	I was present and actively engaged in the problem identification on the issues of focus for the water projects					
4	I participated in designing the steps and deciding the resources or conditions required to implement the water project					
5	I had a say in the justifying the intention to implement or execute the water project					

SECTION C: PROJECT FINANCING		1	2	3	4	5
		SD	D	N	A	SA
1	I contributed some money during the construction of a water project					
2	I contributed some material e.g. sand, stones during the construction of a water project in my community					
3	I was part of the workforce during the construction of a water project in my community					
4	We sometimes contribute some money to finance the maintenance of a water project in my community					
5	I gave ideas that were useful during the construction of a water project in my community					
SECTION D: PROJECT IMPLEMENTATION		1	2	3	4	5
		SD	D	N	A	SA
1	I have been part and parcel of the water project in my community					
2	I took part in ensuring that the water project was constructed according to specification and expectations of the community members					
3	I participated in testing whether the water project is working for/serving my community					

4	I am give feedback/raise issues when something is going wrong at the water point					
5	I monitor to ensure that the water points are used properly and that the water is safe					
	SECTION E: MONITORING AND EVALUATION	1 SD	2 D	3 N	4 A	5 SA
1	There is a committee constituted by community members to monitor water projects in my community					
2	I participate in routine tracking of water use from water projects in my community					
3	I participate community reflections regarding water project in my community					
4	I participate in assessing whether the water project are bringing the intended benefits to my community members					
5	We are often given feedback on water use and measures that we need to take to benefit more from the projects					
	SECTION F: SUSTAINABILITY OF WATER PROJECTS	1 SD	2 D	3 N	4 A	5 SA
1	Our water projects can continue existing even without external funding from the projects					
2	Our water projects are meeting the current needs of the people without compromising the opportunities of future generations					

3	Our water project has maximized the use of local resources in the implementation process					
4	Our water projects has established a number of linkages with other local organization and government line ministries					
5	We have adequate expertise and skill to successfully run/manage the project					

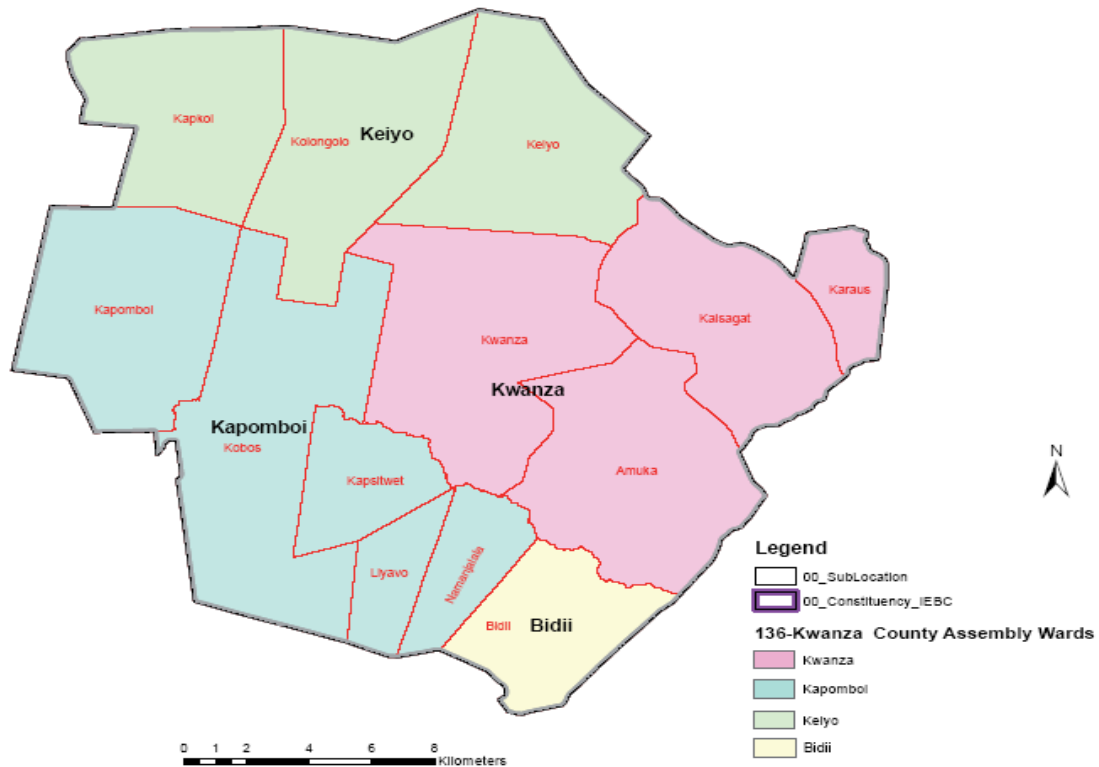
Appendix II: Sample Determination Table

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

Sekaran (2003)

Appendix III: Map of the Study Area-Kwanza Sub-county Map

IEBC KWANZA CONSTITUENCY COUNTY ASSEMBLY WARDS



Sub-county Population: 166,524

Sub-county Area in Sq. Km (Approx.): 511.90

Kapomboi Ward

- County Assembly Ward Population (Approx.): 56,082
- County Assembly Ward Description: Comprises Kapomboi, Kobos, Namanjalala, Liyavo and Kapsitwet sub-Locations of Trans Nzoia County

Kwanza Ward

- County Assembly Ward Population (Approx.): 55,647
- County Assembly Ward Description: Comprises Kwanza, Amuka, Kaisagat and Karaus Sub-Locations of Trans Nzoia County

Keiyo Ward

- County Assembly Ward Population (Approx.): 33,297
- County Assembly Ward Description: Comprises Kapkoi, Kolongolo and Keiyo Sub-Location of Trans Nzoia County

Bidii Ward

- County Assembly Ward Population (Approx.): 21,498
- County Assembly Ward Description: Comprises Bidii Sub-Locations