

**COMMUNITY PARTICIPATION AND SUSTAINABILITY OF WATER SOURCES IN
KIBAALE DISTRICT: A CASE STUDY OF KASAMBYA SUB COUNTY, UGANDA**

By

Andrew Kuteesa Ssenyonga

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DECLARATION

I, **Andrew Kuteesa Ssenyonga** hereby declare that this dissertation is my original work and has never been published or submitted for any other academic award/purposes to any other university or institution of higher learning before.

Andrew Kuteesa Ssenyonga

Signed:.....

APPROVAL

We hereby approve that this research was carried out with our supervision and has been submitted for the award of a master's degree with our Approval.

Signed:.....

Mr. Michael Kiwanuka

UMI Supervisor

.....

Dr. Sylvester Kugonza

Signed:.....

UMI Supervisor

DEDICATION

This research is dedicated to my dear wife Nabweteme Josephine, children; Angella Kuteesa, Pascal Kuteesa and Anna Maria Kuteesa. To my parents Mr. Basil Ssenyonga and Juliet Ssenyonga. Lastly but not least, to my dear sister Ms. Josephine Kusiima.

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I take this opportunity to recognize a number of people without whose contributions this book could not have been a reality.

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Any errors are entirely mine.

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LIST OF ABBREVIATIONS AND ACRONYMS

CBMS	-	Community Based Management System
DWSDCG	-	District Water and Sanitation Development Conditional Grant
EMESCO	-	EMESCO Foundation
FAL	-	Functional Adult Literacy
FY	-	Financial Year
LC	-	Local Council
MDGs	-	Millennium Development Goals
MMSPPM	-	Masters of Management Studies (Project Planning and Management)
MWE	-	Ministry of Water and Environment
NDP	–	National Development Plan
NGO	-	Non – Governmental Organization
NPA	–	National Planning Authority
O&M	-	Operational and Maintenance
RWS	-	Rural Water Strategy
SDA	-	Safali Day Allowance
UMI	-	Uganda Management Institute
UNICEF	-	United Children’s Fund
UWASNET	-	Uganda Water and Sanitation NGO Network
WATSUP	-	Water Atlas Up-date Project
WHO	-	World Health Organization
WUCs	-	Water Users Committees
WUGs	-	Water user Group

ABSTRACT

The study investigated the relationship between community participation and sustainability of water sources in Kibaale district, taking a case of Kasambya Sub County. The objectives of the study were to establish the relationship between community participation in planning, community participation in implementation and community participation in maintenance and sustainability of water sources in Kasambya Sub County. Data was collected using questionnaires, interviewee guides and documentary review guides. The study revealed that, community participation in planning and maintenance had a negligible positive correlation with sustainability of water sources and their relationships were statistically insignificant at 0.05 level of significance. Implying that community participation in planning and maintenance did not guarantee sustainability of water sources in Kibaale district. The study further established that community participation in implementation had a small degree positive correlation with sustainability of water sources and their relationship was statistically significant at 0.05 level of significance. Implying that community participation in implementation of water projects would to a small extent guarantee sustainability of water sources in Kibaale district.

The study recommended re-establishment and training of all water user committees for all water sources, filling vacant positions of all existing water user committees, enacting an ordinance as far as maintenance of water sources in Kibaale district are concerned and holding village and parish level elections to fill the existing local level power vacuum.

The study recommended the following areas for future research; to study the relationship between types of water sources and their sustainability and conduct a comparative study of community participation and sustainability of water sources with other sub counties in Kibaale districts.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This study investigated the relationship between community participation and sustainability of water sources in Kibaale District, taking a case of Kasambya Subcounty. Community participation was the independent variable while sustainability of water sources was the dependent variable.

This chapter presents the background to the study, statement of the problem, purpose of the study, objectives, research questions, hypothesis, conceptual framework, significance, and justification of the study, scope and operational definitions of the key concepts used in the study.

1.2 Background to the Study

Throughout the world, considerable resources are spent implementing community-based programs that are discontinued soon after initial funding ends (US Agency for International Development, 1988; Steckler & Goodman, 1989b; Bamberger & Cheema, 1990; Bossert, 1990).

In recent years, program sustainability has been an issue of growing concern, attention to the long-term viability of health intervention programs is likely to increase everywhere, as policy makers and funders become increasingly concerned with allocating scarce resources effectively and efficiently. The primary focus of many community based programs has traditionally been on determining program efficiency, while the long-term viability of potentially successful programs has been a 'latent' concern (Goodman and Steckler, 1989b), where considered at all.

Globally the use of improved sources of drinking-water is high, with 87% of the world population and 84% of the people in developing regions getting their drinking-water from such sources. However, about 884 million people in the world still do not get their drinking-water from improved sources, almost all of them in developing regions. Sub-Saharan Africa accounts for over a third of this number, and is lagging behind in progress towards the Millennium Development Goals (MDGs) target, with only 60% of the population using improved sources of drinking-water despite an increase of 11 percentage points since 1990 (Joint Report by WHO and UNICEF, 2010).

The Government of Uganda is implementing the strategy of Rural Water Supply (RWS) under the District Water and Sanitation Development Conditional Grant (DWSDCG), construction and rehabilitation of piped water systems in various parts of the country by Ministry of Water and Environment (MWE), rainwater harvesting, promotion of appropriate technology and feasibility study and detailed engineering design of piped water supply systems in water stressed areas.

The management of rural water facilities is the responsibility of water users through Water User Committees (WUCs). According to the National Water and Environment Sector Performance Report (2010), District Local Governments spend up to 12% of the DWSDCG for software activities such as training and supporting Water User Committees.

During the Financial Year 2009/10, 70% water points under communal management had actively functioning Water User Committees an increase from 68% for the previous year. This was attributed to the revitalization of the Community-Based Maintenance System (CBMS).

The sustainability of rural water supplies as measured by functionality rate and defined as the “percentage of improved water facilities found functional at time of spot check” was 80%, slightly less than the 83% reported in 2009.

According to the NGO Group Performance in the Ugandan Water and Sanitation Sector Report (2009), the sustainability of water sources is greatly affected by the sense of ownership felt by users towards their water sources. Many NGOs experience the frustrating fact that once a water source has been constructed by a specific institution, community members often view that institution as responsible for the operation and maintenance of that facility. This can lead to lack of sustainability of facilities and waste of precious financial resources, and can also affect trust relationships and communication between providers and beneficiaries.

According to the Water and Environment Sector Performance Report (2011), the national functionality rate of rural water supplies has stagnated in the range of 80% – 83% in the last 2-5 years, which is still lower than the target of 90% by 2015 indicating limited sustainability of rural water supply. Low levels of functionality of rural water facilities has remained an issue of concern to the rural water sub –sector and for Kibaale District was as low as 75%.

According to the National Water Policy (1999), the overall policy objectives of the Government for water resources management, water supply and sanitation respectively are as follows:

“To manage and develop the water resources of Uganda in an integrated and sustainable manner, so as to secure and provide water of adequate quantity and quality for all social and economic needs of the present and future generations with the full participation of all stakeholders”.

To provide “sustainable provision of safe water within easy reach and hygienic sanitation facilities, based on management responsibility and ownership by the users, to 77% of the population in rural areas and 100% of the urban population by the year 2015 with an 80%-90% effective use and sustainability of facilities” (Medium Term Budget Paper, 2006), which was more ambitious than the Millennium Development Goal (MDG), which aims to halve the percentage of people without access to safe water by 2015 in Uganda.

The National Water Policy (1999, pp 20) “promotes an integrated approach to managing the water resources in ways that are sustainable and most beneficial to the people of Uganda”. The approach is based on the continuing recognition of the social value of water, while at the same time giving much more attention to its economic value. The policy emphasizes active involvement of end users of water sources in planning and implementation of these projects as a way of promoting a sense of ownership and ensuring sustainability of water points.

According to the WaterAid Uganda Annual report (2009), it was reported that both the well served and poorly served communities demonstrated an ability and willingness to contribute funds towards O&M for minor repairs.

In Kibaale District the functionality rate of water sources stands at only 75 percent, far below the national average of 83 percent (MWE, 2010), which is also much below the MDGs target of 90 percent. This has greatly affected safe water coverage despite huge investments in the water sector with the aim of achieving the MDG target of 72% safe water coverage by 2015 while the NPA (2010) projected target is 89.3% by Financial Year 2014/15. This scenario is most likely to increase water related diseases such diarrhea, cholera, dysentery, and intestinal worms which affect the health of the people.

This study intended to establish the relationship between the community participation in planning, implementation and Maintenance of water sources and their sustainability in Kasambya Sub county of Kibaale district.

1.3 Statement of the Problem

Community participation in planning, implementation and maintenance of development projects is believed to guarantee sustainability of development projects (Steckler & Goodman, 1989b). The belief is that once communities are involved in management of projects concerning their wellbeing, they tend to own those interventions which ensure sustainability.

The Ministry of Water and Environment revitalized Community Based Maintenance System (CBMS) for rural water projects, through involving water users in planning and implementation of water projects in their area of jurisdiction and establishing and training Water User Committees (WUCs) in Uganda (MWE, 2007), in order to promote ownership of water sources by water users. For every water point constructed, water users are supposed to be involved in planning and implementation of water projects and a well trained water user committee (WUC) must be put in place. It is anticipated that these committees would help in managing the water points on behalf of the users through setting by-laws which govern their water sources. Despite all the above, sustainability of water sources in Uganda in general and Kibaale district in particular remains a challenge. The WATSUP database (2010) indicates that the functionality rate of water sources stands at only 75 percent in Kibaale district, below the national average of 83 percent which is also much below the MDGs target of 90 percent. This greatly affects safe water coverage despite huge investments in water sector with the aim of achieving the MDG target of 72% safe water coverage by 2015. The use of unsafe water is most likely to increase water related diseases such as diarrhea, cholera, dysentery, and intestinal worms which affect the health of the people. This study intended to establish the relationship between the community participation in planning, implementation and Maintenance of water sources and their sustainability in Kasambya Sub county of Kibaale district. In order to order to ensure sustainable use of safe water in Kibaale District.

1.4 Purpose of the Study

The purpose of the study was to establish the relationship between Community participation and sustainability of water sources in Kibaale district taking a case of Kasambya Sub county, .

1.5 Objectives of the Study

- i. To establish the relationship between community participation in planning and sustainability of water sources in Kasambya Sub County.
- ii. To establish the relationship between community participation in implementation and sustainability of water sources in Kasambya Sub County.
- iii. To establish the relationship between community participation in maintenance and sustainability of water sources in Kasambya Sub County.

1.6 Research Questions

- i. What is the relationship between community participation in planning and sustainability of water sources in Kasambya Sub County?
- ii. What is the relationship between community participation in implementation and sustainability of water sources in Kasambya Sub County?
- iii. What is the relationship between community participation in maintenance and sustainability of water sources in Kasambya Sub County?

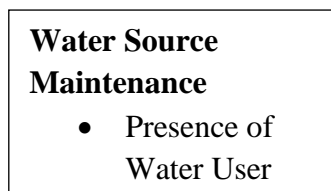
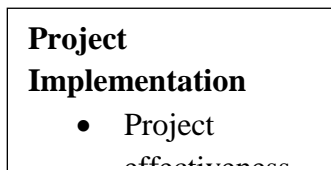
1.7 Hypotheses of the Study

- i. There is a positive significant relationship between community participation in planning - and sustainability of water sources.
- ii. There is a positive significant relationship between community participation in implementation of water projects and sustainability of water sources.
- iii. There is a positive significant relationship between community participation in maintenance of water projects and sustainability of water sources.

1.8 The Conceptual Framework

Independent Variable

Community Participation



Dependent Variable

Sustainability of water sources

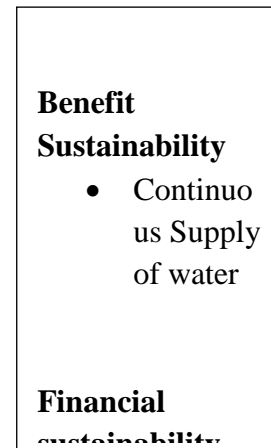


Figure 1: The relationship between community participation and sustainability of water

Source: Adopted from Mona C. Shediak –Rizkallah and Lee R. Bone (1998) model of sustainability

The dimensions of independent and dependent variables as shown in the conceptual framework were modified from Mona C. Shediak –Rizkallah and Lee Bone (1998) model of sustainability.

Project planning refers to the way the project is designed, formulated and the period when the output will be delivered. These are preliminary activities before the project is implemented and at this stage the issues of project sustainability should be considered. It is assumed that better project planning leads to project success and sustainability (Gwokyalya, 2010).

While project implementation includes the effectiveness of a project, sources of funding that enable activities to be implemented and stakeholder involvement in implementing the project, these were considered in the study since most projects are messed up at this stage while some are

terminated at this stage, proper project implementation contribute greatly to sustainability of water projects.

While as water source maintenance includes formation, composition and training of Water User Committees, setting by laws, payments of user fees this stage is important in ensuring sustainability of the projects.

On sustainability of water sources factors considered included, benefit sustainability that is to say continued supply of clean water and financial sustainability continued availability of funds for O&M so as to provide clean water were considered as key indicators for sustainable water supply.

1.9 Significance of the Study

This study attempted to build on the existing material and made further analysis. In this regard, it focused on the relationship between community participation in planning, implementing and Maintenance of water projects and sustainability of water sources in Kibaale a case study of Kasambya Sub county, specifically;

The study informed Kasambya Sub county Local Governments, Kibaale District in general and other development partners on the relationship between community participation in planning, implementing and maintenance of water projects and sustainability of water sources in rural setting.

The study provided useful information to policy makers in the formulation of appropriate policies and programs to promote sustainability of water projects in rural areas.

The study contributed to the literature on community participation and sustainability of water sources in rural areas.

1.10 Justification for the Study

Promotion of the concept of community participation in planning, implementation and maintenance of water sources as a way of ensuring sustainability of water sources in order to be able to provide clean water in a sustainable manner was still new in developing countries. For this reason relatively little was written on the subject, most of the materials available on the subject were presented in management and administrative reports, which made it less useful for practical reference and use. Most of studies previously conducted were in developed countries and some dimensions were not considered such as involvement of users in maintenance of deliverables of the projects after they have been phased out. This study adds community participation in maintenance of water sources to planning and implementation as suggested by Shediak – Rizkallah MC, Bone LR (1998) model of sustainability and it was conducted in a developing country Uganda, Kibaale District a case study Kasambya sub county where sustainability of water sources is a big challenge.

The Government of Uganda and other development partners invested huge sums of money in rural water development, however functionality rate which is a measure of sustainability remained very low at national level with only 81 percent and in Kibaale District 75 percent of improved water sources were functional. This hindered the achievement of millennium development goals and National Development Plan objectives of attaining universal access to safe water. The above motivated me to conduct a study to establish the relationship between community participation in planning, implementation and maintenance and sustainability of water sources in Kibaale district case study Kasambya sub county.

1.11 Scope of the study

This section gives the geographical, time and content scope for the study; it highlights the area of study, timeframe and subject matter.

1.11.1 Geographical Scope:

The study was conducted in Kasambya sub-county in Bugangaizi West County of Kibaale District.

1.11.2 Time Span:

The study focused on the period between 2000 and 2012. This is the period when the concept of community involvement in management of water sources was over emphasized (MWE, 2007)

1.11.3 Content Scope:

The content of the study included sustainability of water sources, community participation in planning, implementation and maintenance of water projects

1.12 Operational Definitions of Key Concepts

For the purpose of this study:

Functionality of water sources: Is defined as the percentage of improved water sources found purposeful at time Interview.

Water User Group (WUG): Is a set of individuals or households who use a specific water source.

Water User Committee: Is defined as the executive organ of the Water User Group.

Sustainability of water sources: Is when a water source is able to provide clean water for a long time without breaking down.

Women in key positions on WUCs: A woman working as a chairperson, vice chairperson, or treasurer on WUCs.

Community participation: Members of the public ‘taking part in any of the processes of planning, implementation and maintenance of projects in their locality

Improved Water source: Any protected water point such as a spring, swallow well or borehole

Participation in Planning: Involvement of community members in project negotiations and determining project duration

Participation in Implementation: Involvement of community members in ensuring project effectiveness, determining project financing and stakeholder involvement in ensuring deliverables are achieved.

Participation in Maintenance: Involvement of community members in maintenance of water sources through formation and training of WUCs, collection of user fees, enacting by-laws and enforcing them and repairing the water sources in case of breakdown.

Project Planning: refers to the way the project is designed, formulated and the period when the output will be delivered.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The purpose of the study was to establish the relationship between Community participation and sustainability of water sources in Kibaale district, taking a case of Kasambya Sub county. This chapter presents the literature review related to community participation and sustainability of water sources. In line with the objectives of the study, the review focuses on community participation in project planning, implementation and maintenance of water projects examining what were researched on and how each affects the sustainability of water sources. The chapter is structured under theoretical review, conceptual review and the literature review.

2.2 Theoretical Review

In this section the theories which underpin this study are reviewed.

2.2.1 Arnstein's ladder of participation

Perhaps the seminal theoretical work on the subject of community participation was by Arnstein (1969). The particular importance of Arnstein's work originates from the explicit recognition that there are different levels of participation, from manipulation or therapy of citizens, through to consultation, and to what might be viewed as genuine participation, i.e. the levels of partnership and citizen control (see figure 2).

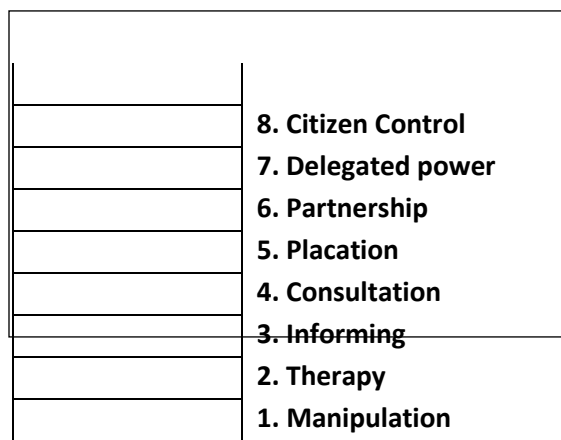


Figure 2: A ladder of participation (Arnstein, 1969)

Source: A ladder of participation (Arnstein, 1969)

The limitations of Arnstein's framework was obvious. Each of the steps represented a very broad category, within which there were likely to be a wide range of experiences. For example, at the level of 'informing' there could be significant differences in the type and quality of the information being conveyed. Realistically therefore, levels of participation were likely to reflect a more complex continuum than a simple series of steps.

The use of a ladder also implies that more control is always better than less control. However, increased control may not always be desired by the community and increased control without the necessary support may result in failure.

2.2.2 A ladder of citizen empowerment

Since Arnstein, increasingly complex theories of participation have been advanced and new terminology added. In particular, there has been a shift towards understanding participation in terms of the empowerment of individuals and communities. This has stemmed from the growing prominence of the idea of the citizen as consumer, where choice among alternatives is seen as means of access to power. Under this model, people are expected to be responsible for themselves and should, therefore, be active in public service decision-making. In this context, Burns et al (1994) modified Arnstein's ladder of participation and proposed a ladder of citizen empowerment power (figure 3).

	CITIZEN CONTROL
	12. Independent control
	11. Entrusted control
	CITIZEN PARTICIPATION
	10. Delegated control
	9. Partnership
	8. Limited decentralized decision-making
	7. Effective advisory boards
	6. Genuine consultation
	5. High quality information
	CITIZEN NON-PARTICIPATION
	4. Customer care
	3. Poor information
	2. Cynical consultation
	1. Civic hype

Figure 3: A ladder of citizen empowerment (Burns et al, 1994)

Source: A ladder of citizen empowerment (Burns et al, 1994)

This is more elaborate than Arnstein's ladder, with a further, more qualitative breakdown of some of the different levels. For example, a distinction is drawn between 'cynical' and 'genuine' consultation, and between 'entrusted' and 'independent' citizen control. The phenomena of 'civic hype', increasingly recognized during the 1990s (see, for example, Harvey, 1989), is incorporated at the bottom rung of the ladder. This essentially treats community participation as a marketing exercise, in which the desired end result is 'sold' to the community.

2.2.3 A continuum of involvement

As a development of this ladder concept of participation Wilcox (1999) identifies five interconnected levels of community participation.

Information
Consultation
Deciding together

Figure 4: A ladder of participation (Wilcox, 1999)

Source: A ladder of participation (Wilcox, 1999)

Wilcox's work has risen from the UK regeneration context and reflects a philosophical progression in participation. That is the different 'levels' of participation are acceptable in differing context and settings, this progression recognizes that power is not always transferred in apparently participative processes, but that the processes still have value. As opposed to the common interpretation of Arnstein, that bring the thought that it is only acceptable to be striving towards citizen control. Within some contexts this move in philosophy has been further developed to describe levels of involvement as a continuum. This is well illustrated by the Skinner (1995) also looked at what individuals and communities were actually involved in within participative partnerships as a tool to categorize participation. Within an effective participative structure, roles and responsibilities will be clear and transparent. Skinner suggests that a community will adopt five roles if fully participating within a regeneration program. Within these five roles community members will act; as beneficiaries of the program and users of services, representatives of local opinion, the source of general community activity, the source for the delivery of regeneration programs and potential long term partners in regeneration.

Through analysis of the exchange of power, and observation of Skinner's five roles, it is possible to make an assessment of the level of community participation within any given programme.

Other analyses of participation suggest a more richly woven tapestry. For example Windle and Chibulka (1981) propose a three dimensional assessment based on Arnstein's ladder and using the ladder as an indicator of involvement levels, but exploring two further axes. Firstly a 'functional dimension' in which different stages in policy cycle are identified including; Program evaluation, Service Giving, Governing, Planning, Enabling and Authorizing.

Secondly they identify a 'participant dimension', which in the context they were reviewing included communities, citizens, employees and consumers. Windle and Chibulka's work suggests that the picture of participation is a complex one.

The analysis suggests that to develop or assess community participation we need to look at not only the level of involvement, but also what actions people are participating in and who is participating, and thus by implication who is not participating.

The theories discussed above notwithstanding, this study focused on the theory of Ladder of citizen empowerment (Burns et al 1994) from which the dimensions of independent variables were derived. In one way or the other, the ideas from Arnstein and Wilcox theory of community participation were used as indicators of community participation in the study. The theory was preferred because it was in line with the Government of Uganda Policy of water users' empowerment to own and management all rural water sources in the country.

2.3 Conceptual Review

2.3.1 Community Participation in Planning and Sustainability of Water Sources

According to Levey and Loomba (1973 p. 273) defines planning as a process of analyzing and understanding a system, formulating its goals and objectives, assessing its capabilities, designing alternative courses of action or plans for purposes of achieving these goals and objectives evaluating the effectiveness of these plans, choosing the preferred plan, initiating necessary actions for its implementation and engaging in continuous surveillance of the system in order to arrive at the optimal relationship between the plan and the system.

Project planning/Design is among the major stages of factors suggested by Shediak –Rizkallah MC, Bone LR (1998) model of sustainability that may potentially affect the sustainability of projects. According to the model, this phase determines whether project deliverables will be sustained or not.

This model has been used by Mathew *et al*, (2006); Scheirer, (2005) and Wong, (2004); among others in their studies on sustainability of public health programs. These researchers demonstrated that the most essential strategies for sustainability after de-funding were within

project planning/design stage and more specifically in the way the project is negotiated and duration set for the project. Projects where communities actively participated at planning/design stage were more likely to be sustainable in the long run than those where communities were less or not participative.

2.3.2 Project negotiation and Sustainability of Water Sources

According to Bossert (1990), a project that will foster sustainability needs to be mapped out at the negotiation stage that is at planning/design stage. He argues that projects imposed by funding agencies are less likely to be sustained than those which are a result of ‘mutually respectful negotiation processes between funders and beneficiaries. A similar perspective is offered by Bermejo and Bekui (1993) and Shea et al., (1992) who assert that; projects that have a participatory approach in setting goals, targets and timeframes are more likely to achieve sustainability. This is because they encourage community participation and ownership than those with pre-specified objectives and timeframes.

Further still, Nancy (2006) in her study to assess factors and strategies facilitating or inhibiting program sustainability, supported the above views when she found that the project negotiation process that focuses on aligning services with organizational goals and selecting acceptable and affordable services presents strategies that are key in supporting sustainability of health services.

2.3.3 Project Duration and Sustainability of Water Sources

In wide-ranging number of projects, the short- term period of governments and funding agencies, due to a crisis mode of operation, short budget cycles and internal political pressure, has negatively affected the process of sustainability (Bamberger and Cheema, 1990). In the study of Lafond (1995), a cross-case analysis of the development of health systems in several developing countries, finds that two features of traditional aid system exert a negative effect on sustainability: its inward focus and its short term investment cycles. Donor agencies are

accountable to institutions which demand swift and visible evidence of their investments. These requirements conflict with long term needs for the recipient communities.

Available researches show that short grant periods for establishing new programs hamper institutionalization. Steckler and Goodman (1989b) found that a grant period of 3 years was too short to achieve institutionalization of the new health promotion programs, they suggested agencies may want to consider supporting worthy programs up to 5 years to enhance institutionalization prospects. In support of the above, Scheirer's (1990) study of the Fluoride Mouth Rinse program in schools shows that the number of years in operation is strongly related to the likelihood that the program continues.

2.4 Community Participation in Implementation and Sustainability of Water Sources

Project implementation is the operational phase in which all work concerning the project is performed. This stage is believed to be one of the most important phases that predict project sustainability. During this phase sustainability strategies are put in place that can stand the test of time. According to Shediak-Rizkallah and Bone (1998) project implementation includes project effectiveness, project financing, involvement of stakeholders and training component.

2.4.1 Project Effectiveness and Sustainability of Water Sources

When community members are fully involved in implementation, projects tend to be more effective. Although successful program implementation does not guarantee sustainability, a project is worth institutionalizing if it has been shown to be effective (Steckler and Goodman, 1989). It is observed that community based programs are difficult to evaluate and programs may be sustained with no real evidence of impact or regardless of the direction of the evidence. This was observed by Bossert (1990, p1019), it was the reputation of effectiveness and not objective evidence that was important for sustainability. Other researchers have similarly maintained that

high visibility in community, through the dissemination of information on project activities and early evaluation of results is essential to program continuity (Bracht and Kingsbury, 1990).

2.4.2 Project Financing and sustainability of water sources

Financing is probably the most prominent factor in sustainability. In international aid programs the financial sustainability of health projects beyond external donor support is typically dependent on one of the two sources of national funding: host country government support or beneficiary support through cost – recovery mechanisms (Bossert, 1990). According to Bossert, the availability of national funds after the end of external funding was related to efforts at gaining alternative sources of financial support during the life of the project and gradual independence from external support such as progressive absorption of recurrent costs into governmental budget.

There has been increased reliance on community financing as a funding source for health programs in the last three decades as a result of declining government resources and global recession of the 1980s (Abel- smith and Dua, 1988; Gerter and vander Gaag, 1990, Haws et al (1992), proposed user fees and other community contributions for financial sustainability of health projects.

An aspect of financial sustainability that is often overlooked is that there is a supply side and a demand side. The availability of external resources illustrates the familiar supply side of sustainability. Focus on the demand side of sustainability shifts the attention away from donor to the recipient's behavior. Beneficiaries' willingness and ability to pay for services as a central issue for the demand side also underscores the need for services to achieve a high level of quality; in turn, demand for services attracts monetary resources (Ashford and Haws, 1992). Paradoxically, excessive outside funding (the supply side) can inhibit sustainability, as often

happens when a program requires recurrent funds for continuation that exceed local resources (the demand side) (Mburu and Boema, 1989).

2.4.3 Involvement of stakeholders and sustainability of water sources

Key stakeholder involvement in the implementation of project activities was identified by Scheirer (2005) as one of the key factors for project success. She says that for any intervention to become sustainable there is need to involve the key stakeholders because they are not only important resources for success but are also affected by the project results.

Olsen (1998) corroborates the above views and says that in order to achieve sustainability different actors are needed who are organized in such a way that they can be relied upon to sustain services overtime to interact with clients and communities and to deal with problems and new challenges as they arise.

In support of the above Wong (2004) also says that client and staff involvement in service delivery plus partnership between organizations are influential in achieving sustainability.

Medeirol (1999) in agreement with these views argues that involvement of stakeholders especially those who are directly affected by the project is likely to encourage consideration of diverse issues of sustainability.

Altman (1995) also argues that sustaining programs in community requires community collaboration from beginning with professionals or volunteers that represent those communities through whom adequate community mobilization and empowerment can be done. This contributes to continued existence of services when funding ends.

2.5 Community Participation in Maintenance and Sustainability of Water Sources

In international aid programs the financial sustainability of health projects beyond external donor support is typically dependent on one of the two sources of national funding: host country government support or beneficiary support through cost – recovery mechanisms (Bossert, 1990). According to Bossert, the availability of national funds after the end of external funding is related to efforts at gaining alternative sources of financial support during the life of the project and gradual independence from external support such as progressive absorption of recurrent costs into governmental budget.

There has been increased reliance on community financing as a funding source for health programs in the last three decades as a result of declining government resources and global recession of the 1980s (Abel- smith and Dua, 1988; Gerter and vander Gaag, 1990, Haws et al (1992), proposed user fees and other community contribution for financial sustainability of health projects.

2.5.1 Water User Committees and Sustainability of Water Sources

According to Water and Sanitation Sector – District Implementation Manual – Version 1 – 31st March 2007 (pg10), for each and every improved water source put in place there must be a well trained water user committee which is an executive arm of the Water Users Group with the following roles and responsibilities; demanding and planning for improved water and sanitation services, contributing funds towards construction and maintenance of water facilities and responsible for operation and maintenance, including the collection of revenue. They are also mandated to enact and enforce by-laws governing their water sources to ensure full functionality of the water sources.

According to The Water Act Chap (152) section 50, the concept of community participation in planning, implementation and maintenance of water sources is well described and the roles of

water user group explained as follows; to collectively plan and manage the point source water supply system in their area, collect revenue from persons using the water supply system for the maintenance of the system and responsible for promoting sanitation and hygiene in the area. These provisions aim at ensuring sustainability of water projects as a way of achieving the Millennium Development Goals of attaining 100% safe water coverage by 2015.

According to Uganda National Water and Environment Sector Performance Report (2010), 70% of water points under communal management had actively functioning Water User Committees; an increase from 68% previous year. This was attributed to the revitalization of the Community-Based Maintenance System (CBMS).

2.5.2 Training Component for Water Users Committees and Sustainability of Water Sources

Projects with training components are more likely to be sustained than those without; those trained can continue to provide benefits, train others and form a constituency in support of the program (Bossert, 1990).

The management of rural water facilities is the responsibility of water users through Water User Committees (WUCs). According to Water and Environment Sector Performance Report (2010), District Local Governments spend up to 12% of the DWSDCG for software activities such as training and supporting Water User Committees.

The Government of Uganda is implementing the strategy of Rural Water Supply (RWS) under the District Water and Sanitation Development Conditional Grant (DWSDCG), construction and rehabilitation of piped water systems in various parts of the country by Ministry of Water and Environment (MWE), rainwater harvesting, promotion of appropriate technology and feasibility study and detailed engineering design of piped water supply systems in water stressed areas.

The management of rural water facilities is the responsibility of water users through Water User Committees (WUCs).

2.5.3 Composition of Water User Committees and Sustainability of Water Sources

The Water Sector Gender Strategy (2003) provides stakeholders with operational guidelines on how gender principles would be mainstreamed within the water sector. The strategy aims to develop empowering approaches that would enhance gender equity, participation and access & control to resources in the water sector leading to poverty alleviation through providing sustainable safe water. The strategy promotes women to be elected to key positions on water user Committees. Some studies conducted revealed that water sources with many women on water user committees were more likely to be functional than those with many men.

According to Water Sector Report (2011), the percentage of women in key positions in small town water supplies had slightly increased from 37% in FY 2009/10 to 39% in FY 2010/11.

Data from software reports from 38 districts indicate that 81% of water sources with Water Source Committees had women holding key positions.

In terms of gender, the golden indicator for women's participation in decision making in the rural water and sanitation is "the percentage of Water and Sanitation Committees with at least one woman holding a key position".

In 2010, 85% of committees had women holding key positions, an increase of 14 percent from 2009. It is assumed that since women are major users of water they can perform better than men if they are holding key positions on WUCs such as Chairperson, Vice, Treasurer or Secretary ensuring sustainability of water sources.

2.5.4 Payment of User Fees and Sustainability of Water Sources

It is assumed that if water users collect funds regularly for maintaining their water sources, then these water sources would be used sustainably.

According to the WaterAid Uganda Annual report (2009), it was reported that both the well served and poorly served (with improved water sources) communities demonstrated an ability and willingness to contribute funds towards O&M for minor repairs. The amount collected ranged from 200 to 500 Uganda shillings and the frequency of collection varied from a monthly to half yearly contribution. This finding is contrary to O&M studies that have always portrayed communities as unwilling to participate.

Some people were not willing to pay O&M funds while others were unable to pay.” Denying access to water was a common tool used to put pressure on those able but refusing to pay. However this was not always rigorously enforced. The elderly and the disabled were exempted from paying and those who were unwilling to pay continued to use unsafe water from the existing unprotected water sources. Some WUCs/WSCs had passed by-laws for O&M however they could not be implemented due to lack of cooperation from the local leaders.

2.6 Summary of the literature review

In conclusion therefore, literature reviewed indicates that community participation in planning, implementation and management was very crucial in ensuring sustainability of projects. According to Shediak – Rizkallah MC, Bone LR (1998) model of sustainability and Mathew *et al* 2006, Scheirer (2005) and Wong (2004), involvement of beneficiaries in planning, implementation and management of interventions was cited as among the determinants of whether the project would be sustained or not. This model does not consider involvement of beneficiaries in maintenance of the deliverables after the project phase- out.

Literature available suggests that beneficiaries should be involved in project negotiation, determining project duration, project effectiveness, project financing and stakeholder involvement since they are very crucial in determining whether the project would be sustainable or not.

However all studies were conducted in developed countries and some dimensions were not considered such as involvement of users in maintenance of deliverables of the projects after they have been phased out.

This study adds community participation in maintenance of water sources to planning and implementation as suggested by Shediak – Rizkallah MC, Bone LR (1998) model of sustainability and it was conducted in a developing country Uganda, Kibaale District a case study Kasambya sub county.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The purpose of the study was to establish the relationship between Community participation and sustainability of water sources in Kasambya Sub county, Kibaale district. This chapter presents the research design, study population, sample size, sample selection, sampling techniques and procedures, data collection methods and instruments, pretesting procedures, data collection and analysis arrangement

3.2 Research Design

The research design of this study was a case study design that adopted a cross-sectional design. Both quantitative and qualitative approaches were used. A case study strategy was preferred to enable a deeper understanding of the subject under study. The triangulation of approaches was aimed at complementing each other (Amin, 2005).

3.3 Study Population

The study population was Kasambya S/C and included civil servants (12), Local leaders (44), users of water sources (60 water users) who were beneficiaries of water projects and opinion leaders (4) in Kibaale District, totaling to 120 access population Kibaale District Development Plan (2010/11-2014/15)

3.4 Sample Size and Selection

The sample size was determined at 60 using statistical tables of Morgan & Krejcie, (1970) as cited in Amin (2005).

The number of respondents was selected across the population categories as shown in table 1 below:

Table 1: The table below shows Categories of Respondents and sample size selection

Category	Access Population	Sample size	Percent	Sampling technique
Civil Servants (Implementations)	12	06	50%	Purposive sampling
Local Leaders (Decision Makers)	44	22	50%	Simple random sampling
Users (Members of Water User Committee)	60	30	50%	Simple random sampling
Opinion Leaders	4	2	50%	Purposive sampling
Total	120	60	50%	

Source: Kibaale District Development Plan (2010/11 – 2014/15)

The researcher stratified the accessible population by category (civil servants, local leaders, users and opinion leaders) and then used simple random sampling to select respondents from local leaders and water users' categories and purposive selection from civil servants and opinion leaders' categories.

3.5 Sampling Techniques and procedures

Selection of interviewee was done by simple random sampling from local leaders and water users' categories and purposive sampling from civil servants and opinion leaders' categories and a total of 60 respondents were selected and interviewed.

The sampling frames for local leaders and users categories were developed and each member of the access population given a unique number. Then these numbers were written on small pieces of papers folded and mixed together, and then one paper was selected one at a time without

replacement until all required sample numbers were got, while for civil servants and opinion leaders' categories were purposively selected.

3.6 Data Collection Methods

The study utilized triangulation of data collection methods to improve data validity. Both primary and secondary data sources were accessed through; interviews and review of available documents.

3.6.1 Questionnaire survey

This data collection method employed closed questions to generate responses from Water users and local leaders. A total of 52 respondents were interviewed using this method. It was a preferred method because it saves time, easy to quantify and analyze responses generated (Mugenda, 2003).

2.6.2 Interviews

In this data collection method respondents were asked questions using the interview guide and responses recorded. A total of 8 key informants were interviewed using this method.

2.6.3 Documentary review

Secondary data was collected through analyzing water sector documents specifically the 5 Year District Development Plan for the period of 2010/11 – 2014/15 to gain a clear understanding of the planning process, implementation and maintenance of water sources.

3.7 Data Collection Instruments

3.7.1 Questionnaires

A structured questionnaire was used for data collection from Local leaders and water users; this was the most appropriate instrument because of literacy levels of our local leaders. The questionnaire used a 5- point Likert scale ranging from 5 (Strongly Agree) to 1 (Strongly Disagree). The higher the number the greater the influence on sustainability of water projects. A

Likert-scale provided consistent responses and allowed respondents to provide feedback that was slightly more expansive than simple close ended question, but much easier to quantify than completed open ended responses (Patrick, 2007).

3.7.2 Interview guide

Semi structured interview guide was used for 8 key informants who included the 6 civil servants and 2 opinion leaders to stimulate them into detailed discussions of community participation and sustainability of water projects. The guide helped to standardize the interview situations and to obtain data required to meet specific objectives of the study.

3.7.3 Documentary review guide

The researcher used a check list to ensure that all the required information was collected from water sector department and the Kibaale District Planning Unit at district level. This information included financial reports, strategic plans, implementation plans and annual reports.

3.8 Data Quality Assurance

Two methods were used for data quality assurance;

3.8.1 Validity

The content validity was tested using three experts in the study area from water community department. The experts helped to make judgment on the validity of the items in the questionnaire. The expert judgment was tallied and a content validity index of 90% obtained. The same experts also made judgment on the interview guide which they found 95% valid and recommended a few changes to make it more perfect. Accordingly, the questionnaires and the interview guides were amended to accommodate the proposals made by water and community department experts.

3.8.2 Reliability

After the questionnaire was adjusted, it was pretested on 5 (five) interviewee in Bwamiramira Sub county, Buyanja County Kibaale District with the same characteristics as the actual study participants to ensure reliability of data collection instruments and the Cronbach's Alpha Reliability Coefficient was tested using the statistical Package for Social Scientists (SPSS). For this study the Cronbach's Alpha Reliability Coefficient based on standardized items was 0.759, indicating high internal consistent of the test. Hence data generated from the study was reliable see results table 2 below.

Table 2: A table showing Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
0.748	0.759	39

3.9 Procedure of Data Collection

The researcher obtained a letter from Uganda Management Institute (UMI) seeking for authority to collect data from Kibaale District (Appendix 1). Sampling frame was got from the District water office and Planning Unit and updated. Three research assistants were recruited and trained on effective communication, data collection and verification of data collection tools for completeness. The research assistants were dispatched with the list of selected respondents to collect data.

The researcher administered the interview guide and documentary review himself in order to minimize the risk of misquoting and misinterpretation.

3.10 Data Analysis

3.10.1 Quantitative data analysis

Quantitative data analysis was done in stages; first data manual editing, checking questionnaire for completeness, and serializing them. Secondly data was entered into a computer using Statistical Package for Social Scientists and tabulations was done to check for errors and inconsistencies in the data.

Uni-variate analysis was done on all variables and different frequency tables produced and then descriptive analysis was conducted to establish the central tendencies using the median given that ordinal scale measurement was used to measure the variables and dispersion was measured using frequencies.

3.10.2 Qualitative data analysis

Qualitative data analysis was done through summarizing findings under different themes according to the objectives of the study. The qualitative responses were compared with those got from quantitative responses so as to compare and triangulate responses.

3.11 Measurements of Variables

An ordinal scale was used to measure the variables. This scale provided for variables which generate responses that could be ranked. In this study 5- point Likert –scale was used, the level of agreement was ranked (strongly agree reflects more agreement than just agree just like strongly disagree compared with disagree) and the neutral point as Not Sure.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

The purpose of the study was to establish the relationship between community participation and sustainability of water sources in Kibaale District a case study of Kasambya Sub county. This chapter covers the presentation, analysis and interpretation of results. The chapter presents the response rate,

4.2 Response Rate

The response rate was analyzed basing on the categorization of respondents into; local leaders, water users, Civil servants and opinion leaders using the frequencies and percentages. The response rate is shown in table 3 below:

Table 3: Response Rate

Category	Sample size	Response Rate	Percent
Local Leaders (Decision Makers)	22	22	100%
Users (Members of Water User Committee)	30	30	100%
Civil Servants (Implementers)	6	6	100%
Opinion Leader	2	2	100%
Total	60	60	100%

Source: Primary data collected

The researcher targeted 52 respondents for quantitative data collection and 8 respondents for qualitative data collection totaling to 60 respondents and realized 52 (100 %) and 8 (100%) respectively. This was very good for the study as non-response errors were eliminated from the study which increased the validity of the study results.

4.3 Demographic Characteristics of Respondents

The demographic characteristics were observed and findings are presented, analyzed and below.

4.3.1 Distribution of Respondents by gender

The gender of respondents was investigated by the study because gender may affect community participation in planning, implementation and maintenance hence influencing sustainability of water sources. Findings are presented in table 4 below:

Table 4: Distribution of Respondents by Gender

		Frequency	Percent
Valid	Female	19	31.7
	Male	41	68.3
	Total	60	100.0

Source: Primary data collected

From table 4 above, out of the 60 respondents, 41 were male representing 68.3% and 19 were female representing 31.7%.

Although the males dominate political leadership at all levels and indeed dominated the study sample, the study was representative in terms of gender.

4.3.2 Distribution of Respondents by Age

The age of respondents was investigated by the study because age may affect community participation in planning, implementation and maintenance hence influencing sustainability of water sources. Findings are presented in table 5 below:

Table 5: Distribution of Respondents by Age

		Frequency	Percent
Valid	20-30 Years	13	21.7
	31-40 Years	23	38.3
	40 and above Years	24	40.0
	Total	60	100.0

Source: Primary data collected

From table 5 above, the respondents aged; 20-30 years were 13 (21.7 %), 31-40 years were 23 (38.3 %) and above 40 years were 24 (40.0 %). This indicates that majority of the respondents were above the youthful age (above 30 years of age) and a few young respondents 21.7 % were interviewed. Most people in leadership at local level are usually above youthful age; hence this study was representative of the population studied in terms of age of the respondent.

4.3.3 Distribution of Respondents by Level of Education

The highest level of education respondents was investigated by the study because highest level of education may affect community participation in planning, implementation and maintenance hence influencing sustainability of water sources. Findings are presented in table 7 below:

Table 6: Distribution of Respondents by the Highest Level of Education

		Frequency	Percent
Valid	No Formal Education	2	3.3
	Primary level	30	50.0
	Secondary level	12	20.0
	Certificate	8	13.3
	Diploma	7	11.7
	Bachelors Degree	1	1.7
	Total	60	100.0

Source: Primary data collected

In the table 6 above, the results show that 30 (50.0 %) of the respondents had attained primary education, 12 (20.0 %) had secondary education, 7 (11.7 %) had diplomas and 2 (3.3 %) and 1 (1.7 %) No formal education and a bachelor degree respectively. This means that majority of the respondents had attained qualifications less than secondary education. Respondents with primary education or no formal education were more in numbers 32 (53.3 %). This implies that the number of respondents with secondary education and above was less than those with primary or no formal education. This also means that the research findings could have been affected by level of education of the respondents.

4.4 Presentation, Analysis and Interpretation of Empirical Results

The empirical results were presented objective by objective. Each objective was analyzed using descriptive statistics to develop the indices from the row data (Kothari, 2007) by organizing, summarizing and describing measures of a sample (Louis and Michael, 1998). The quantitative results were presented and analyzed based on frequencies, median and linear regression model and Pearson correlation coefficient was used to determine the relationship between community

participation in planning, implementation and maintenance and sustainability of water sources in Kibaale District.

4.4.1 Descriptive statistics on sustainability of water sources

Sustainability of water sources was investigated in terms of benefit and financial sustainability, under benefit sustainability continuous water supply was studied while under financial sustainability, mobilization of adequate financial resources, its efficient use and reliability of financial resources were studied the findings are presented in table 7 below.

Table 7: Descriptive Statistics on Sustainability of water sources

Item Statistics							
	SA	A	NS	D	SD	Median	N
a) Benefit Sustainability							
Supply of water							
There is always water supply from improved water sources	15 (28.8%)	30 (57.7%)	0 (0.0%)	6 (11.5%)	1 (1.9%)	4	52
Community members are aware of their roles and responsibility ensuring sustainability of water sources	9 (17.3%)	26 (50.0%)	2 (3.8%)	11 (21.2%)	4 (7.7%)	4	52
Community members receive necessary support from district technical staff concerning maintenance of water sources	2 (3.8%)	3 (5.8%)	3 (5.8%)	24 (46.2%)	20 (38.5%)	2	52
Technical staff available are enough to meet future mechanical needs of water sources	2 (3.8%)	7 (13.5%)	3 (5.8%)	22 (42.3%)	18 (34.6%)	2	52
b) Financial Sustainability							
Mobilization of adequate financial resources							
Community members contribute funds for maintenance of water sources	1 (1.9%)	24 (46.2%)	3 (5.8%)	9 (17.3%)	15 (28.8%)	3	52

Item Statistics							
	SA	A	NS	D	SD	Median	N
Available funds in water user groups is enough to maintain water sources	0 (0.0%)	4 (7.7%)	1 (1.9%)	29 (55.8%)	18 (34.6%)	2	52
Efficient use of financial resources							
All water sources projects are implemented by the district/sub county staff	1 (1.9%)	20 (38.5%)	15 (28.8%)	9 (17.3%)	7 (13.5%)	3	52
There is transparency in the way user fees are utilized	3 (5.8%)	21 (40.4%)	9 (17.3%)	11 (21.2%)	8 (15.4%)	3	52
Reliability of financial resources							
There is uninterrupted supply of water from our improved water sources	8 (15.4%)	17 (32.7%)	2 (3.8%)	16 (30.8%)	9 (17.3%)	3	52
In case of breakdown repairs are done immediately	2 (3.8%)	22 (42.3%)	3 (5.8%)	16 (30.8%)	9 (17.3%)	3	52
Observed Frequency fo	43 (8.3%)	174 (33.5%)	41 (7.9%)	153 (29.3%)	109 (21.0%)		520
Expected Frequency fe	4.3	17.4	4.1	15.3	10.9		52

Source: Primary data collected

The data in table 7 (a) shows that 45 (86.5 %) of respondents were in agreement that improved water sources always supplied water to users (Median score =4) and 35 (67.3%) of respondents were in agreement that community members were aware of their roles and responsibilities in ensuring sustainability of their improved water sources (Median score=4), however 44 (84.6%) of respondents reported that community members were not receiving necessary support from district technical staff concerning maintenance of their water sources (Median score =2) and 40 (76.9%) of respondents reported that technical staff available were not enough to meet future mechanical needs (Median score=2).

The data in table 7 (b) shows that only 25 (48.1%) of respondents reported that community members were contributing funds for maintenance of water sources, while 24 (46.2%) reported

that they were not contributing (Median score=3) and 47 (90.3%) of respondents were in disagreement that available funds were enough to maintain water sources in case of breakdown (Median score=2) and this was reported as the major reason why breakdowns were not repaired immediately (Median score=3), hence implying interrupted water supply to water users (median score=3).

The overall percentage indicated that only 41.8% either strongly agreed or agreed while 50.3% strongly disagreed or disagreed that water sources were sustainable in Kibaale district and the remaining 4.1% were not sure.

This implies that water sources were generally highly un-sustainable because the medians for most items were below score 4 (Agree) and the overall percentage indicated 50.3% of respondents were in agreement that water sources were not sustainable in Kibaale district.

4.4.2 Community participation in planning and sustainability of water sources

The study intended to answer a research question “*What relationship existed between community participation in planning and sustainability of water sources in Kasambya Sub County*”. In the next subsections the researcher presents descriptive and inferential analysis on community participation in planning for water projects.

4.4.2.1 Descriptive statistics on community participation in planning for water projects

Community participation in project negotiations and project duration determination were investigated by the study because project negotiations and project duration may affect community ownership of water sources hence affecting their sustainability. Findings are presented in table 8 below:

Table 8: Descriptive Statistics on Community Participation in Planning for water projects

Item Statistics							
	SA	A	NS	D	SD	Median	N
a) Project negotiations							
Participation in identifying water needs	24 (46.2%)	24 (46.2%)	0 (0%)	4 (7.7%)	0 (0%)	4	52
Participate in determining the type of water sources	10 (19.2%)	22 (42.3%)	1 (1.9%)	18 (34.6%)	1 (1.9%)	4	52
Participate in determining location of water sources	14 (26.9%)	27 (51.9%)	0 (0%)	9 (17.3%)	2 (3.8%)	4	52
Participate in determining resources to be needed to construct water sources	8 (15.4%)	24 (46.3%)	3 (5.8%)	16 (30.8%)	1 (1.9%)	4	52
b) Project duration							
Participate in determining water project duration	0 (0.0%)	10 (19.2%)	10 (19.2%)	17 (32.7%)	15 (28.8%)	2	52
Implementers of water projects agree with community members on duration of projects	2 (3.8%)	13 (25.0%)	8 (15.4%)	14 (26.9%)	15 (28.8%)	2	52
Observed frequency, fo	58 (18.6%)	120 (38.5%)	22 (7.0%)	78 (25.0%)	34 (10.9%)		312
Expected frequency, fe	9.67	20.00	3.67	13.00	5.67		52

Source: Primary data collected

4.4.2.1.1 Project negotiations

The data in table 8 (a) shows that 48 (92.3 %) of respondents were in agreement that community members participated in identifying water needs in their areas of jurisdiction (Median score=4), 41 (78.8 %) participated in selecting location of water sources (Median score=4), 32 (61.5 %) type of water sources to be constructed (median score=4) and 32 (61.5 %) resources needed to construct water sources (Median score=4)

The results imply that community members were highly participating in planning for water projects at negotiation stage and were involved in identifying their water needs, involved in

selecting water locations and type of water sources as well as resources needed to construct water sources.

4.4.2.1.2 Project duration

The data in table 8 (b) shows that community members were neither participating in determining the duration of water projects to be implemented (Median score=2), nor were they consulted on the same by implementers (Median score=2).

According to the interview results, duration of the projects were basically determined by the donors and usually influenced by procurement process as well as release of Rural Water Grant from the Ministry of Finance, Planning and Economic Development. “*Community members were at the receiving end*” one of parish chief respondent commented.

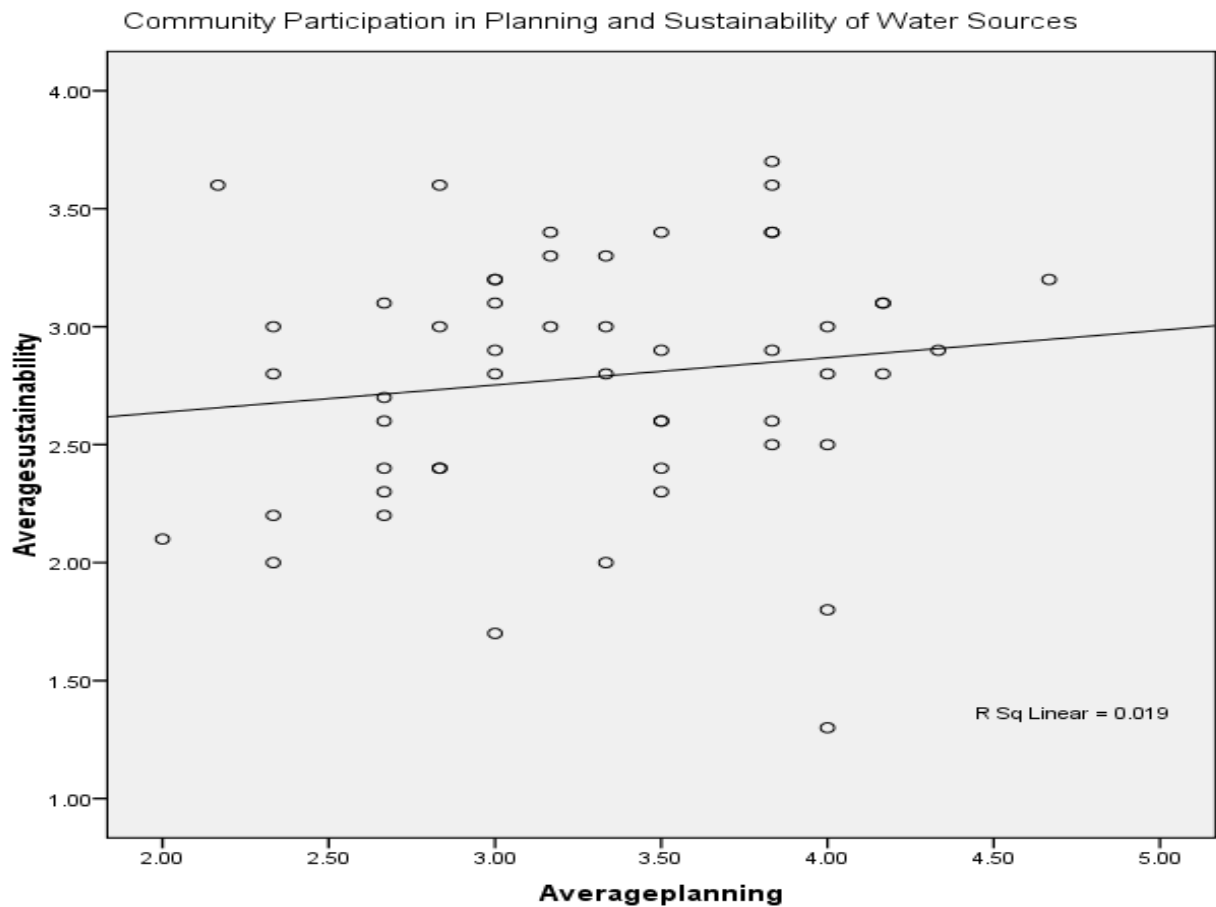
The overall percentage indicated that 57.1% either strongly agreed or agreed while 35.9% strongly disagreed or disagreed that community participation in planning affected sustainability of water sources and the remaining 7.0% were not sure.

4.4.2.2 Inferential statistics on community participation in planning for water projects

In order to answer the research question of “*What is the relationship between community participation in planning and sustainability of water sources in Kibaale District?*” A Linear Regression Model was generated to establish the relationship between community participation in planning for water projects and their sustainability. Before running the model, the mean was computed using transform-compute procedure in SSPS for all questions on community participation in planning (a new variable created = Averageplanning) and sustainability of water sources (a new variable created = Averagesustainability)

4.4.2.2.1 Correlation results on community participation in planning and sustainability of water sources

The linearity between community participation in planning and sustainability of water sources in Kibaale District was estimated through a scatter plot. The scatter plot is presented in the diagram below.



Source: Primary data collected from field

Figure 5: Estimated regression line between community participation in planning and sustainability of water sources

The linear curve is sloping down wards from right to the left was generated, implying that there is a positive relationship between community participation in planning and sustainability of

water sources. However, the strength of this relationship can be measured through Pearson Correlation Coefficient (R) as presented in table 9 below.

Table 9: Regression model summary of sustainability of water sources on community participation in planning

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.139 ^a	0.019	0.000	0.52738

a. Predictors: (Constant), Average planning

b. Dependent Variable: Average sustainability

Table 9 displays R, R square and the standard error. R was the correlation between the observed and predicted values of the dependent variable. The correlation between community participation in planning and sustainability of water sources was only 13.9% indicating a weak positive correlation, meaning that an increase in community participation in planning would lead to negligible chances of water source sustainability in Kibaale District.

There was an averagely weak relationship between community participation in planning and sustainability of water sources since the absolute value of R was significantly small.

The proportion of variation in sustainability of water sources explained by the regression was 0.019 ($R^2 = 0.019$) meaning that community participation in planning for water sources had an effect of only 1.9% on sustainability of water sources. In order to test the hypothesis that, “*there is a significant positive relationship between community participation in planning for water projects and sustainability of water sources*” the coefficient of the model is presented in the table 10 below.

Table 10: Coefficient results for community participation in planning and Items on the sustainability of water sources

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.406	.390		6.162	.000
	Average planning	.116	.117	.139	.993	.325

a. Dependent Variable: Average sustainability

The above table 10 explains the relationship between sustainability of water sources represented by a figure of $2.406 + 0.116$ influence on the community participation in planning. This meant that sustainability of water sources was directly proportional to community participation in planning. However the standardized coefficient of 0.139 was statistically insignificant ($p=0.325$) at 0.05 level of significance.

Hence the hypothesis that *“There is a significant positive relationship between community participation in planning for water projects and sustainability of water sources”* is rejected and concludes that, there is insignificant positive relationship between community participation in planning for water projects and sustainability of water sources in Kibaale District.

4.4.3 Community participation in implementation and sustainability of water sources

Another research question the study intended to answer was *“What relationship existed between community participation in implementation and sustainability of water sources in Kibaale District”*. In the next subsection the researcher presents descriptive and inferential analysis of the findings on community participation in implementation of water projects.

4.4.3.1 Descriptive statistics on community participation in implementation of water projects

Effectiveness of water projects in solving users water needs, community participation in project financing and involvement of stakeholders were investigated by the study because effectiveness of projects, community participation in project financing and stakeholders involvement may affect community ownership of water sources hence affecting their sustainability. Descriptive findings are presented in table 11 below:

Table 11: Descriptive statistics on community participation in implementation of water projects

Item Statistics							
	SA	A	NS	D	SD	Median	N
a) Effectiveness of water projects							
Implementers Acts on the views of the community members on how best to improve services	16 (30.8%)	28 (53.8%)	2 (3.8%)	5 (9.6%)	1 (1.9%)	4	52
Community members benefit a lot from water projects implemented	33 (66.5%)	15 (28.8%)	0(0%)	3 (5.8%)	1 (1.9%)	5	52
Community members are satisfied with services offered from water projects implemented	13 (25.0%)	23 (44.2%)	0 (0%)	13 (25.0%)	3 (%)	4	52
b) Water project financing							
Community contribution towards construction of water sources (Cash and Kind)	18 (34.6%)	30 (57.7%)	1 (1.9%)	1 (1.9%)	2 (3.8%)	4	52
The is water user fees paid towards maintenance of water sources	2 (3.8%)	27 (51.9%)	0 (0%)	15 (28.8%)	8 (15.4%)		52
Water user should have some financial contribution towards construction of water sources	14 (26.9%)	33 (63.5%)	1 (1.9%)	2 (3.8%)	2 (3.8%)	4	52
c) Involvement of stakeholders in implementation of water projects							

Item Statistics							
	SA	A	NS	D	SD	Median	N
Implementers of water projects work closely with local council when implementing the projects	21 (40.4%)	27 (51.9%)	1 (1.9%)	3 (5.8%)	0 (0.0%)	4	52
Implementers have strong links with water users	3 (5.8%)	28 (53.8%)	7 (13.5%)	12 (23.1%)	2 (3.8%)	4	52
Local leaders actively support the delivery of water projects	25 (48.1%)	22 (42.3%)	1 (1.9%)	4 (7.7%)	0 (0.0%)	4	52
Observed frequency, fo	145 (31.0%)	233 (49.8%)	13 (2.8%)	58 (12.4%)	19 (4.1%)		
Expected frequency, fe	16.11	25.89	1.44	6.44	2.11	0	52

Source: Primary data collected

4.4.3.1.1 Effectiveness of water projects

The data in table 11 (a) shows that, water projects implemented were very effective in solving water needs of the community members since 48 (92.3 %) of respondents were in agreement that water users benefited a lot from water projects implemented (Median score=5) and 36 (69.2 %) of respondents were in agreement that water users were satisfied with services offered from water projects implemented (Median score=4), 44 (84.6 %) of respondents were in agreement that implementers of water projects acted on the views of the community members on how best to improve services (Median score=4).

The results imply that water projects were very effective in solving water needs for the community since they reported that they were benefiting a lot from water projects implemented and were satisfied with water projects. More so community members participated in ensuring that the projects are effective through advising implementers on how best to improve services in the water sector.

4.4.3.1.2 Water project financing

The data in table 11 (b) shows that, 48 (92.3%) of respondents were in agreement that community members contributed cash or locally available materials like sand, stones and bricks towards construction of water sources (Median score=4) and 47 (90.4%) of respondents suggested that all water users should have some financial contribution towards construction and maintenance of water sources (Median score=4).

The results imply that community members contributed towards construction of water sources and users were aware of their responsibilities of contributing towards construction of water sources.

The above findings were collaborated with the information got from the Ag. District Water Officer, it was found out that for every water source to be constructed or rehabilitated the beneficiary communities would deposit to the district collection account funds as co-financing as follows; borehole – Ugx. 200,000, shallow well, Ferro-cement tank and borehole rehabilitation – Ugx. 100,000/=, spring protection – Ugx. 60,000/= in order to enhance ownership of these water sources.

4.4.3.1.3 Involvement of stakeholders in implementation of water projects

The data in table 11 (c) shows that, 48 (92.3%) of respondents were in agreement that implementers of water projects worked closely with local councils when implementing the projects (Median score=4) and 47 (90.4%) were in agreement that local leaders actively supported the delivery of water projects (Median Score=4) while 31 (59.6%) reported a strong link of implementers and water users during implementation of water projects (Median score=4).

The results above indicate that there was high local leaders involvement as shown by high median score of above 4 (Agree).

The results were collaborated with interview results where respondents reported that water supply was demand driven, users had to make formal applications for water sources to the sub county chief and technical staff would be sent to the communities where water sources were demanded to make surveys and feasibility studies for which type of water sources would be cost effective. Stakeholders such as local leaders were of great importance in the entire process of requesting for the sources, identification of the location as well as local material mobilization.

The overall percentage indicated that 80.8% either strongly agreed or agreed while 16.5% strongly disagreed or disagreed that community participation in implementation affected sustainability of water sources and the remaining 2.8% were not sure.

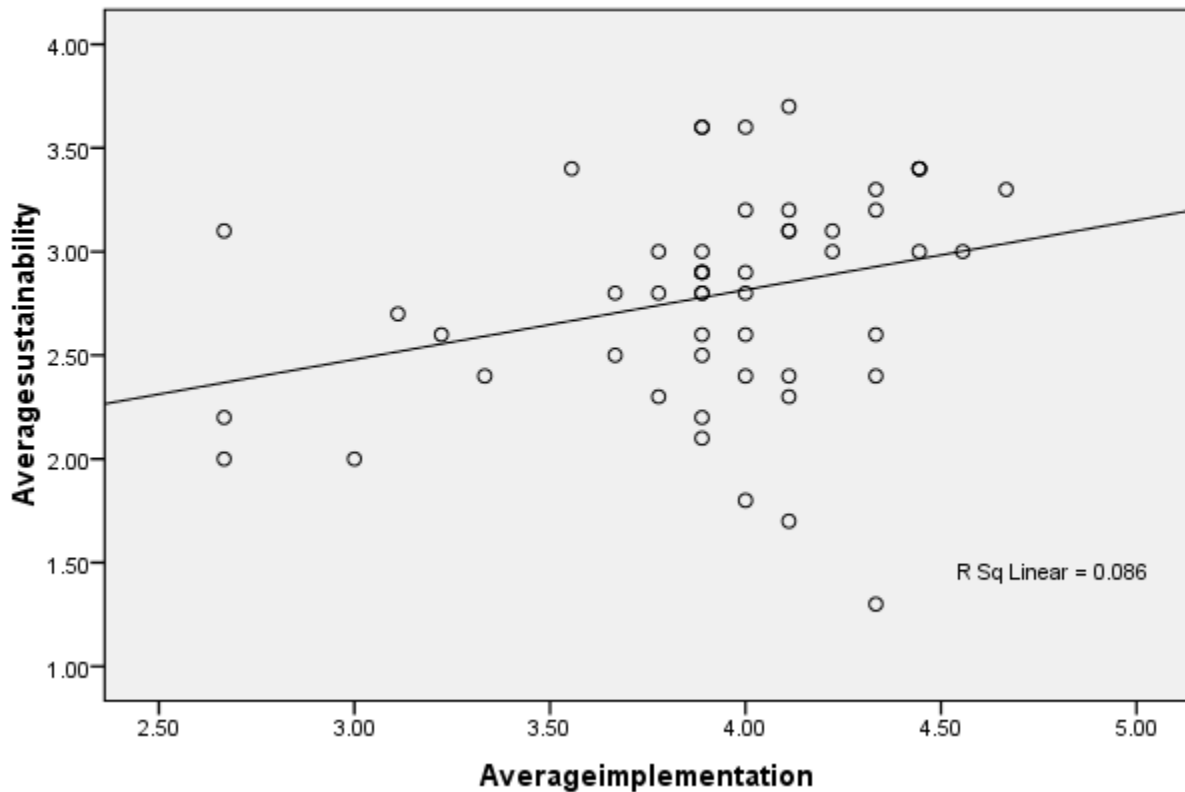
4.4.3.2 Inferential statistics on community participation in implementation for water projects

In order to answer the research question of “*What is the relationship between community participation in implementation and sustainability of water sources in Kibaale District?*” A Linear Regression Model was generated to establish the relationship between community participation in implementation of water projects and their sustainability. Before running the model, the mean was computed using transform-compute procedure in SSPS for all questions on community participation in implementation (a new variable created = Averageimplementation) and sustainability of water sources (a new variable created = Averagesustainability)

4.4.3.2.1 Correlation results on community participation in implementation and sustainability of water sources

The linearity between community participation in implementation and sustainability of water sources in Kibaale District was estimated through a scatter plot. The scatter plot is presented in the diagram below.

Community Participation in Implementation and Sustainability of water Sources



Source: Primary data collected from field

Figure 6: Estimated regression line between community participation in implementation and sustainability of water sources

The linear curve is sloping down wards from right to the left. This implies that there is a positive relationship between community participation in implementation and sustainability of water sources. However, the strength of this relationship can be measured through correlation coefficient (R) as presented in the table 12 below.

Table 12: Regression model summary of sustainability of water sources on community participation in implementation of water projects

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.293 ^a	0.086	0.067	0.50925

a. Predictors: (Constant), Average implementation

The table 12 displays R, R square and the standard error. R was the correlation between the observed and predicted values of the dependent variable. The correlation between community participation in implementation of water projects and sustainability of water sources was 29.3% indicating a moderate positive correlation, meaning that an increase in community participation in implementation would lead to water source sustainability to some extent.

The proportion of variation in sustainability of water sources explained by the regression was 0.086. R squared had a value of 0.086 meaning that community participation in implementation of water sources had an effect of 8.6% on sustainability of water sources in Kibaale district.

Table 13: Coefficient results for community participation in implementation and Items on the sustainability of water sources

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.473	.611		2.411	.020
	Average implementation	.336	.155	.293	2.164	.035

a. Dependent Variable: Average sustainability

The above table 13 explains the relationship between sustainability of water sources represented by a figure of $1.473 + 0.336$ influence on the community participation in implementation. This

meant that sustainability of water sources was directly proportional to community participation in implementation. The standardized coefficient of 0.293 ($p=0.035$) was statistically significant at 0.05 level of significance.

Hence the hypothesis that *“There is a significant positive relationship between community participation in implementation of water projects and sustainability of water sources”* is accepted, meaning that community participation in implementation of water sources influences sustainability of water sources in Kibaale district.

4.4.4 Community participation in maintenance and sustainability of water sources

The last but not least research question the study intended to answer was *“What is the relationship between community participation in maintenance and sustainability of water sources in Kibaale District”*. In the next subsection the researcher presents descriptive and inferential analysis of the findings on community participation in maintenance of water sources.

4.4.4.1 Descriptive statistics on community participation in maintenance of water sources

Presence, training, composition of water user committees and payment of user fees were investigated by the study because presence, training, composition of water user committees and payment of user fees may affect sustainability of water sources. Findings are presented in table 14 below:

Table 14: Descriptive statistics on community participation in maintenance of water sources

Item Statistics							
	SA	A	NS	D	SD	Median	N
a) Presence of Water User Committees							
Improved water sources having WUCs	25 (48.1%)	22 (42.3%)	1 (1.9%)	2 (3.8%)	2 (3.8%)	4	52
WUCs selected from among water users	29 (55.8%)	16 (50.0%)	2 (3.8%)	3 (5.8%)	2 (2.8%)	5	52
Water User committees are very active	8 (15.4%)	26 (50.0%)	4 (7.7%)	12 (23.1%)	2 (3.8%)	4	52

Item Statistics							
	SA	A	NS	D	SD	Median	N
b) Training of Water User Committees							
WUCs trained well on their roles and Responsibilities	7 (13.5%)	15 (28.8%)	5 (9.6%)	18 (34.6%)	7 (13.5%)	3	52
WUCs set by laws governing their improved water sources	11 (21.2%)	22 (42.3%)	5 (9.6%)	11 (21.2%)	3 (5.8%)	4	52
WUCs implement/enforce by-laws	5 (9.6%)	19 (36.5%)	3 (5.8%)	20 (38.5%)	5 (9.6%)	3	52
Some community members trained to handle repair and maintenance of water sources	5 (9.6%)	14 (26.9%)	3 (5.8%)	15 (28.8%)	15 (28.8%)	2	52
c) Composition of Water User Committee							
Women allowed freely to be selected on WUCs	20 (38.5%)	25 (48.1%)	3 (5.8%)	3 (5.8%)	1 (1.9%)	4	52
Youth allowed freely to be selected on WUCs	10 (19.2%)	31 (59.6%)	3 (5.8%)	4 (7.7%)	4 (7.7%)	4	52
WUCs with more women on the committees work better than others	21 (40.4%)	21 (40.4%)	4 (7.7%)	4 (7.7%)	2 (3.8%)	4	52
Women should be encouraged to be on water user committees	30 (57.7%)	18 (34.6%)	1 (1.9%)	3 (5.8%)	0 (0%)	5	52
d) Payment of User Fees							
Community members pay user fees for using improved water sources	2 (%)	24 (46.2%)	3 (5.8%)	9 (17.3%)	14 (26.9%)	3.5	52
All water users should pay user fees for improved water sources	24 (46.2%)	22 (42.3%)	1 (1.9%)	2 (3.8%)	3 (5.8%)	4	52
User fees should be used to maintain improved water sources	9 (17.3%)	36 (69.2%)	1 (1.9%)	3 (5.8%)	3 (5.8%)	4	52
Observed Frequency fo (%)	206 (28.3%)	311 (42.7%)	39 (5.4%)	109 (15.0%)	63 (8.7%)		728
Expected Frequency	14.71	22.21	2.79	7.79	4.50		52

Source: Primary data collected

4.4.4.1.1 Presence of Water User Committees

The data in table 14 (a) shows that, 47 (90.4 %) of respondents were in agreement that most improved water sources had Water User Committees (Median score=4) and 45 (86.5 %) reported

that they were selected from among water users (Median score=5), and 34 (65.4%) were in agreement that the committees were active in doing their work of managing and implementing by-laws of their water sources (Median score=4).

The results imply that most of the water sources had active water committees which were selected from among water users.

4.4.4.1.2 Training of Water User Committees

The data in table 14 (b) shows that, only 22 (42.3%) of respondents were in agreement that WUCs were well trained on their roles and responsibilities (Median score=3), and 33 (63.5%) were in agreement that WUCs set by-laws governing their improved water sources (Median score=4). However only 24 (46.2 %) of respondents were in agreement that WUCs implemented/enforced by-laws (Median score=3) and only 19 (36.5%) of respondents were in agreement that community members were trained to handle repair and maintenance of water sources (Median score=2).

The interview results revealed that not all water source committees put in place were well trained, due to budgetary constraints and some donor conditions which do not allow software activities and left to local authorities as their co-financing. According to the documentary review of the 5-year District Development Plan 2010/11 – 2014/15, the district planned to construct 141 shallow wells, 49 boreholes and rehabilitate 88 boreholes, however did not provide for establishment and training of water committees.

More so though WUCs set by-laws to govern their water sources, they did not implement them due to weak and in some instances non – availability of LC 1 Chairpersons, since Local Council one elections are long overdue. A good number of chairpersons migrated to other places, others

died, while others lost interest in the leaders; this affected their performance as far as enforcing by laws are concerned.

The interview results further revealed that, Water Pump Mechanics (WPM) were identified, trained and equipped with tool boxes but they work as volunteers who are supposed to be facilitated by the Water User Committees when they repair the water sources. They are faced with a challenge of lack of spare parts to repair water sources especially mostly for boreholes. This initiative did not solve the problem of water source breakdown; institutionalizing the pump mechanics into local government structures is therefore recommended.

4.4.4.1.3 Composition of Water User Committee

The data in table 14 (c) shows that, 45 (86.5%) and 41 (78.8%) of respondents were in agreement that women and youth were allowed freely to be selected on WUCs (Median score=4) respectively and 42 (80.8%) of respondents were of the opinion that WUCs with more women on the committees would work better than others (Median score=4) and 48 (92.3%) recommended that women should be encouraged to be on water user committees (Median score=5).

The above was confirmed by key informants, who reported that the guidelines for formation of water user committees were emphasizing that women were to constitute one third of the committee and at least 2 youth on the committee and recommended that women should be encouraged to join the management water sources since they were key in collecting and using water in homes.

4.4.4.1.4 Payment of user fees

The data in table 14 (d) shows that, further shows that 26 (50.0%) of respondents were in agreement that community members were paying user fees for improved water sources (Median score =3.5) and 46 (88.5%) respondents were of the opinion that all water users should pay user

fees for improved water sources (Median score=4) and 45 (86.5%) of respondents recommend that the fees should be used to maintain their water sources (Median score=4).

Key informants revealed that users do not pay user fees on regular basis, but they do it only when there is need “*Crisis management*”, despite the fact that community members were encouraged to pay user fees.

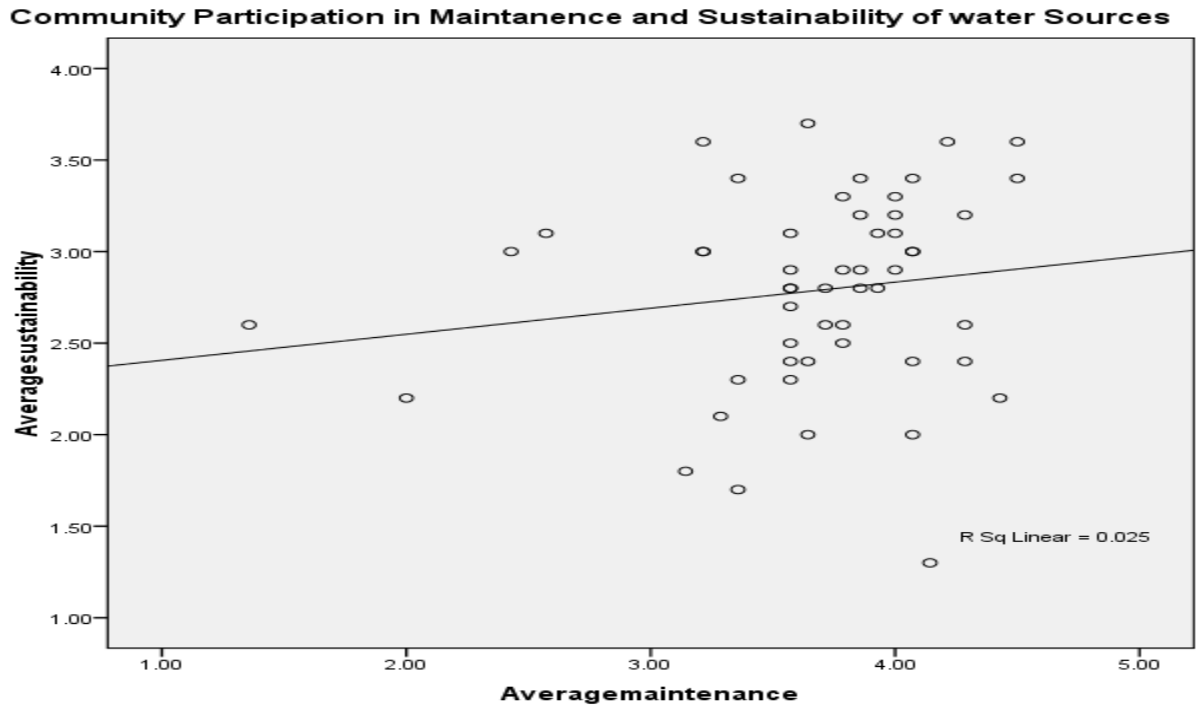
The overall percentage indicated that 71.0% either strongly agreed or agreed while 23.6% strongly disagreed or disagreed that community participation in maintenance affected sustainability of water sources and the remaining 5.4% were not sure.

4.4.3.2 Inferential statistics on community participation in maintenance of water projects

In order to answer the research question of “*What is the relationship between community participation in maintenance and sustainability of water sources in Kibaale District?*” A Linear Regression Model was generated to establish the relationship between community participation in maintenance and sustainability of water sources. Before running the model, the mean was computed using transform-compute procedure in SSPS for all questions on community participation in implementation (a new variable created = Averagemaintenance) and sustainability of water sources (a new variable created = Averagesustainability)

4.4.3.2.1 Correlation results on community participation in maintenance and sustainability of water sources

The linearity between community participation in maintenance and sustainability of water sources in Kibaale district was estimated through a scatter plot. The scatter plot is presented in the diagram below.



Source: Primary data collected from field

Figure 7: Estimated regression line between community participation in maintenance and sustainability of water sources

The linear curve is sloping down wards from right to the left, implying that there is a positive relationship between community participation in maintenance and sustainability of water sources. However, the strength of this relationship can be measured through correlation coefficient (R) as presented in the table 15 below.

Table 15: Regression model summary of sustainability of water sources on community participation in maintenance of water projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.158 ^a	0.025	0.006	0.52585

a. Predictors: (Constant), Average maintenance

Table 15 displays R, R square and the standard error. R was the correlation between the observed and predicted values of the dependent variable. The correlation between community participation in water source maintenance and sustainability of water sources was only 15.8% indicating a weak positive correlation meaning that community participation in maintenance of water sources insignificantly influences water source sustainability in Kibaale District.

The proportion of variation in sustainability of water sources explained by the regression was 0.025 (R^2), implying that community participation in maintenance of water sources had an effect of only 2.5% on sustainability of water sources.

Table 16: Coefficient results for community participation in implementation and items on the sustainability of water sources

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	
1	(Constant)	2.264	.467		4.846
	Average maintenance	.142	.126	.158	1.133
					.000
					.263

a. Dependent Variable: Average sustainability

Table 16 above explains the relationship between community participation in maintenance represented by a figure of 2.264 + 0.142 influence on the sustainability of water sources. This meant that sustainability of water sources was directly proportional to community participation in maintenance. The standardized coefficient of community participation in maintenance (Beta=0.158, p=0.263) was statistically insignificant at 0.05 level of significant.

Hence the hypothesis that *“There is a significant positive relationship between community participation in maintenance of water projects and sustainability of water sources”* is rejected. Meaning that community participation in maintenance of water sources did not influence sustainability of water sources in Kibaale District.

CHAPTER FIVE

SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of the study was to establish the relationship between Community participation and sustainability of water sources in Kibaale district. This chapter presents the summary, discussion, conclusions and recommendations of the study.

5.2 Summary of Findings

The study investigated the relationship between community participation and sustainability of water sources in Kibaale District, taking a case study of Kasambya Sub County. The objectives of the study were to establish the relationship between community participation in planning, community participation in implementation and community participation in maintenance and sustainability of water sources in Kasambya Sub County. The major findings of the study are highlighted objective by objective in the paragraphs below.

5.2.1 Community Participation in Planning and Sustainability of Water sources

Community members were highly participating in planning for water projects at negotiation stage, communities were involved in identifying their water needs, involved in selecting water locations and type of water sources as well as resources needed to construct water sources. However they were neither participating in determining the duration of water projects to be implemented. There was a weak positive correlation (13.9%) between community participation in planning and sustainability of water sources; hence community participation in planning was less related to water source sustainability in Kibaale District.

5.2.3 Community Participation in Implementation and Sustainability of Water sources

Water projects were very effective in solving water needs for the communities since it was reported that community members benefited a lot from water projects implemented and were satisfied with them. More so community members participated in ensuring that the projects are effective through advising implementers on how best to improve services in the water sector.

Community members contributed towards construction of water sources and users were aware of their responsibilities in contributing towards construction of water sources. There was a moderate positive correlation (29.3%) between community participation in implementation and sustainability of water sources in Kibaale district, implying that community participation in implementation of water projects to same extent was related to water source sustainability.

Community participation in implementation of water sources had a statistically significant positive effect on sustainability of water sources in Kibaale district.

5.2.3 Community Participation in Maintenance and Sustainability of Water sources

Most of the water sources had active water committees which were selected among water users, most of water user committees put in place were not trained, WUCs set by-laws to govern their water sources which were not effectively implemented.

Though Water Pump Mechanics (WPM) were identified among users, trained and equipped with tool boxes, they worked as volunteers who were supposed to be facilitated by the Water User Committees when they did repairs for the water sources, they were faced with a challenge of lack of spare parts to repair water sources mostly for boreholes. This initiative did not fully solve the problem of water source breakdown.

Women and youth were allowed freely to be selected on WUCs and respondents were of opinion that WUCs with more women on the committees would work better than others, community

members were not paying user fees for improved water sources regularly though respondents were of the opinion that all water users should pay user fees for improved water sources and use to maintain their water sources.

There was a weak positive correlation (15.8%) between community participation in maintenance and sustainability of water sources, meaning that community participation in maintenance was less related to water source sustainability in Kibaale district.

5.3 Discussion

The discussion of the study findings are presented objective by objective as below;

5.3.1 Community participation in planning and sustainability of water sources

Community members highly participated in planning for water projects at negotiation stage, through identifying their water needs, involvement in selecting water locations and type of water sources as well as resources needed to construct water sources, this was in line with Bossert (1990), Barnejo and Bekui (1993) and shea et al. (1992) who observed that sustainability needs to be mapped out at the negotiation stage that is at planning/design stage. They argued that projects with participatory approach in setting goals, targets and timeframes were more likely to be sustained. However communities were neither participating in determining the duration of water projects to be implemented, nor being consulted on the same by implementers, duration of the projects were determined by the donors and usually influenced by procurement process as well as time of release of grants from the centre, usually all projects were implemented within one Financial Year. Bamberger and Cheema, (1990) observed that short term period of governments and other funding agencies due to a crisis mode of operation and short budget cycles affected the process of sustainability and Steckler and Goodman (1989b) suggested a period of 5 years to enhance institutionalization process of the program. According to Mathew et al, (2006), Scheirer, (2005), and Wong, (2004) in their studies on sustainability of public health

programs emphasized full participation of communities at planning/design stage which was not the case in Kasambya sub county, hence putting sustainability of water sources at a stake.

Community participation in planning for water projects was statistically insignificant in ensuring sustainability of water sources in Kibaale district. This implies that involvement of communities at planning stage was necessary but not a sufficient condition for sustainability of water sources in Kibaale District as proposed by the Shediak –Rizkallah MC, Bone LR (1998) model of sustainability.

5.3.2 Community participation in implementation and sustainability of water sources

Community members participated in implementation of water projects through project financing by contributing little funds and some cases locally available materials. This was in line with the recommendations of Abel Smith and Dua (1988); Gerter and Vander Gaag (1990) and Haws et al., (1992) who proposed user fees and other community contributions for financial sustainability and promotion of sense of ownership.

Stakeholders were involved in implementation of water sources as suggested by Sheirer (2005) as one of the key factors for project success and sustainability. Stakeholders involvement was further emphasized by Wong (2004); Medeirol (1999); Altman (1995) and Olsen (1998) and suggested that it was one way of promoting sense of ownership of development interventions put in place.

Water projects were very effective in solving water problems in communities through providing clean safe water for domestic use and shorten the distance to the water sources and time spent while collecting water. According to Goodman and Steckler, (1989b), a project is worth institutionalizing if it has been proved to be effective.

Community participation in implementation was statistically significant in ensuring sustainability of water sources in Kibaale District. This means that sustainability of water sources is influenced by community participation in implementation of water sources.

5.3.3 Community Participation in Maintenance and Sustainability of water sources

Most of water sources had active water committees which were selected among water users, however not all water user committees put in place were trained, due to budgetary constraints and some donor conditions which did not allow software activities and left them to local authorities as their co-financing. This was against the Government of Uganda Water and Sanitation policy (2007) where it is emphasized that every water point put in place should have a well trained Water User Committees. Absence of well trained water user committees affected functionality of many water sources hence rendering them unsustainable this was very common with Boreholes. Water Pump Mechanics (WPM) were identified among users, trained and equipped with tool boxes, they worked as volunteers who were supposed to be facilitated by the Water User Committees when they repaired the water sources, they were faced with a challenge of lack of adequate spare parts to repair water sources mostly for boreholes. This initiative did not fully solve the problem of water source breakdown.

This was in agreement with Bossert (1990), who said that projects with training components are more likely to be sustained than those without; he further suggested that those trained could continue to provide benefits, train others and form a constituency in support of the program.

More so though WUCs set by-laws to govern their water sources, did not implement them due to weak and in some instances non – availability of LC 1 Chairpersons, since Local Council one elections were long overdue, a good number of chairpersons migrated to other places, others died, while other lost interest in the leadership, this affected WUCs performance as far as

enforcing by-laws are concerned. Community members were not paying user fees for improved water sources regularly, community members were of the opinion that all water users should pay user fees for improved water sources and recommended the fees to be used to maintain their water sources. One key informant revealed that users do not pay user fees on regular basis, but they used to do it only when there is need “*Crisis management*” despite the fact that they were always encouraged to contribute towards maintenance of water sources. This finding was in agreement with the WaterAid Uganda Annual report (2009), which reported that both the well served and poorly served with improved water sources communities demonstrated ability and willingness to contribute funds towards O&M for minor repairs.

In terms of gender, the golden indicator for women’s participation in decision making in the rural water and sanitation is “the percentage of Water and Sanitation Committees with at least one woman holding a key position”. The study revealed that women and youth were allowed freely to be selected on WUCs to improve efficiency and effectiveness of these water user committees.

Community members were not fully participating in the maintenance of water sources, since they were not regularly contributing user fees for maintenance, did not have functional user committees, and did not enforce by-laws. The above was not in line with MWE (2010), which emphasizes that for each and every improved water source put in place there must be a well trained water user committee which is an executive arm of the Water Users Group with the following roles and responsibilities; demanding and planning for improved water and sanitation services, contribute a cash towards construction of water facilities, responsible for operation and maintenance, including the collection of revenue, they are also mandated to enact and enforce by-laws governing their water sources to ensure full functionality of their water sources.

According to inferential statistics, the community participation in maintenance of water sources was statistically insignificant in ensuring sustainability of water sources in Kibaale District.

5.4 Conclusions

5.4.1 Community participation in planning and sustainability of water sources

There is a negligible positive correlation (13.9%) between community participation in planning and sustainability of water sources in Kibaale district. Despite of community members highly participating in planning for water projects at negotiation stage, through identifying their water needs, involved in selecting water locations and type of water sources as well as resources needed to construct water sources. Community participation in planning was statistically insignificant in ensuring sustainability of water sources in Kibaale District. This implies that community participation in planning for water projects did not ensures sustainability of water sources in Kibaale district.

5.4.2 Community participation in implementation and sustainability of water sources

There is a moderate positive correlation (29.3%) between community participation in implementation and sustainability of water sources in Kibaale district. There was high participation of community members in implementation of water projects in the district, as indicated by the high local leaders' involvement especially at village level. Community members contributed funds towards construction of water sources and users were aware of their responsibilities in contributing towards construction of water sources. Community participation in implementation was statistically significant in ensuring sustainability of water sources in Kibaale District. This implies that community participation in implementation of water projects ensures sustainability of water sources.

5.4.3 Community participation in maintenance and sustainability of water sources

There is a negligible positive correlation (15.8%) between community participation in maintenance and sustainability of water sources in Kibaale district. Community members were not fully participating in the maintenance of water sources, which could have affected sustainability of water sources in Kibaale district as explained below.

Though most of the water sources had active water committees which were selected among the water users, not all of them were well trained. This affected the efficiency and effectiveness of these WUCs in enforcing by-laws and mobilizing their fellow water users as far as maintenance of water sources was concerned. Water pump mechanics were not motivated since they worked as volunteers on top of that, lacked adequate spare parts to repair water sources mostly for boreholes. Community participation in maintenance of water sources was statistically insignificant in ensuring sustainability of water sources in Kibaale district. This implies that community participation in maintenance of water projects did not guarantee sustainability of water sources in Kibaale district

5.5 Recommendations

In order to enhance full community participation and water source sustainability in Kibaale district, the following should be done;

5.5.1 Community participation in Planning and Sustainability of water sources

- The Central Government should organized Village and Parish level elections as a matter of urgency to provide framework for planning for water sources and enforcing by-laws established by water user committees.
- Implementers should involve community members in determining water project duration.

5.5.2 Community Participation in Implementation and Sustainability of Water Sources

- The community members should contribute towards construction of water sources to promote ownership of these sources.

5.5.3 Community Participation in Maintenance and Sustainability of Water Sources

- The District should establish water user committees to all water sources which never had them and train them on their roles and responsibilities fill vacant position of all existing water user committees and conduct refresher training to all of them, develop an ordinance as far as maintenance of water sources in Kibaale District is concerned.
- The Ministry of public service should lift a ban on recruitment in local governments to fill the vacant posts in local governments especially for Parish Chiefs, Health Assistants Assistant Community Development Officers, County Water Officers who are very crucial in mobilizing communities for water source planning, implementation and maintenance.

5.6 Limitations

Poor road network to access the respondents made data collection a bit very difficult, some of Chairpersons LC 1 had migrated to other places, leaving the posts vacant since it had taken long time without electing LC 1 chairperson elections.

5.7 Contributions of the study

The study contributes to the academia in understanding the relationship between community participation and sustainability of water sources. In particular, community participation in planning and maintenance was found to be less related to sustainability of water sources while community participation in implementation was found to be moderately related to sustainability of water sources in Kibaale District.

The policy makers in the ministry of Water and Environment, District and Sub county Local Governments, have for long focused on community participation in planning, implementation and maintenance of water sources to ensure sustainability of water sources, However, this study showed that only community participation in implementation was found to be moderately related to sustainability of water sources while Community participation in planning and maintenance were less related to sustainability of water sources. Hence calling for refocusing of community based management of rural water sources.

Kibaale District Local Government could improve on some areas in water sources planning, implementation and maintenance to enhance water source sustainability. The main areas of intervention at this level include; establishing water user committees to all those water sources which never had them and train them on their roles and responsibilities, fill vacant position of all existing water user committees and conduct refresher training to all of them, develop an ordinance as far as maintenance of water sources in Kibaale District is concerned.

5.8 Areas recommended for future research

The study recommended the following areas for future research;

- The relationship between different types of water sources and their sustainability.
- Conduct a comparative study of community participation and sustainability of water sources with other sub counties in Kibaale District.

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Appendix 1: Uganda Management Institute's Communication Authorizing Data Collection

Appendix 2: Workplan and Timeframe

Activity	Duration (days /weeks/months)	Dates
Proposal writing and defense	15 days	November 2012
Data collection	6 days	November 2012
Data entry, processing and analysis	5 days	December 2012
Report writing	10 days	December 2012
Defense of thesis, final report adjustments, printing and binding	1	January & February 2013
Graduation	1	March 2013

Appendix 3: The Budget

Activity	Item	Quantity	Unit Cost	Total Cost
Proposal writing and defense	Printing	8	5,000	40,000
	Transport	2	50,000	100,000
	Meals **	8	10,000	80,000
	Internet and communication	3	25,000	75,000
Sub Total				295,000
Data collection	Printing and photocopying Questionnaires	100	1,000	100,000
	Transport	6	30,000	180,000
	SDA data collectors	12	30,000	360,000
	SDA Guide	5	10,000	50,000
Sub Total				690,000
Data entry, processing and analysis	SDA data entrants	2	50,000	100,000
				100,000
				-
Report writing	Printing and photocopying Draft report	6	10,000	60,000
	Meals	7	5,000	35,000
	Transport	2	50,000	100,000
Sub Total				195,000
Defense of thesis	Transport	2	50,000	100,000
	Printing and binding of final report	6	20,000	120,000
Sub Total				220,000
Grand Total				1,500,000

Appendix 4: The Questionnaire

QUESTIONNAIRE (WATER USERS AND LOCAL LEADERS)

20th December 2012

Dear, Respondent

RE: ACADEMIC RESEARCH ON COMMUNITY PARTICIPATION AND SUSTAINABILITY OF WATER SOURCES IN KIBAALE DISTRICT: CASE STUDY KASAMBYA SUB COUNTY

I am pleased to inform you that you are one of the selected individual who were randomly selected to respond to this questionnaire. The data collected using this questionnaire will be used to compile an academic research report to be presented to Uganda Management Institute for award of a Masters in Management Studies (Project Planning and Management) degree.

You are cordially requested to spare some time and fill this simple questionnaire. The information obtained through this questionnaire shall be used for aforementioned purpose and will be taken with utmost confidentiality. For this reason, I do not seek to know the name or identity of any respondent.

Yours Sincerely

Kuteesa Andrew Ssenyonga
RESEARCHER

LOCATION:

Parish: Village:

Category of Respondents (circle):

1.	LC I Chairperson
2.	Water Users

SECTION A: BACKGROUND INFORMATION

In this section please circle the category that best describes you

A1. Sex:

1. Male
2. Female

A2. Age:

1. Below 20 Years
2. 20-30 Years
3. 31 -40 Years
4. Above 40 years

A3. Marital Status:

1. Never Married
2. Married
3. Widowed
4. Divorced/Separated

A4. Highest Level of Education:

1. No formal Education
2. Primary level
3. Secondary level
4. Certificate
5. Diploma
6. Bachelors Degree
7. Masters Degree
8. PHD
9. Others (Specify)

SECTION B: INDEPENDENT VARIABLES**a) COMMUNITY PARTICIPATION IN WATER PROJECT PLANNING**

For this section, indicate your perceptions by ticking the most applicable choice applicable to your situation and experience. The choices are: 5= Strongly Agree, 4=Agree, 3=Not Sure, 2= Disagree, 1= Strongly Disagree.

SN	Statement	5	4	3	2	1
i)	Project Negotiations					
1	Community members participate in identifying water needs.					
2	Community member participate in determining type of water source to be constructed.					
3	Community members participate in determining the location of water sources to be constructed.					
4	Community members participate in determining resources needed to construct water sources.					
ii)	Project Duration	5	4	3	2	1
5	Community members participate in determining water project duration					
6	Implementers of water projects agree with us on the duration of water projects					

b. COMMUNITY PARTICIPATION IN IMPLEMENTATION OF WATER PROJECTS

In this section, indicate your perceptions by ticking the most applicable choice applicable to your situation and experience. The choices are: 5= Strongly Agree, 4=Agree, 3=Not Sure, 2= Disagree, 1= Strongly Disagree.

i)	Project effectiveness	5	4	3	2	1
7	Government and other donors who implement water projects act on the views we give them about how best the services should be improved.					
8	Community members benefit a lot from water projects implemented in our areas					
9	Community members are satisfied with services offered from water projects implemented					
ii)	Project Financing	5	4	3	2	1
10	There is community contribution towards construction of water sources (Cash or Kind)					
11	There is water user fees paid towards maintenance of water sources					
12	In my view, water users should have some financial contribution towards construction of water sources					
iii)	Involvement of stakeholders	5	4	3	2	1
13	Government and other donors who implement water projects work closely with the local councils as they implement their water projects					
14	Government and other donors who implement water projects have strong link with water users					
15	Local leaders actively support the delivery of water projects					

c. COMMUNITY PARTICIPATION IN MAINTENANCE OF WATER PROJECTS

In this section, indicate your perceptions by ticking the most applicable choice applicable to your situation and experience. The choices are: 5= Strongly Agree, 4=Agree, 3=Not Sure, 2= Disagree, 1= Strongly Disagree.

i)	Presence of Water User Committees	5	4	3	2	1
16	Your improved water sources have water user committees					
17	Water user committees were selected among water users					
18	Water user committees are very active					
ii)	Training of Water User Committees	5	4	3	2	1
19	Water User Committee members were trained well on their roles and responsibilities.					
20	Water User Committee set by – laws governing your improved water sources					
21	Water User Committee implement/enforce by-laws					
22	Some community members have been trained to handle repair and maintenance of our water sources					
iii)	Composition of Water User Committee	5	4	3	2	1
23	Women were allowed freely to be selected on water user committees					
24	Youth allowed freely to be selected on water user committees					
25	In my own view water User committees with more women in key					

i)	Presence of Water User Committees	5	4	3	2	1
	positions (chairperson, vice, secretary, treasure) work better than others					
26	Women should be encouraged to be on water user committees					
iv)	Payment of User fees	5	4	3	2	1
27	Community members pay user fees for using improved water sources					
28	In my own view, all water users should pay user fees for maintenance of water sources					
29	In my own view all user fees should be used to maintain our improved water sources.					

SECTION C: DEPENDENT VARIABLE (SUSTAINABILITY)

a) BENEFITS SUSTAINABILITY

In this section, indicate your perceptions by ticking the most applicable choice applicable to your situation and experience. The choices are: 5= Strongly Agree, 4=Agree, 3=Not Sure, 2= Disagree, 1= Strongly Disagree.

i)	Supply of water	5	4	3	2	1
30	There is always water supply from our improved water source					
31	Community members are aware of their roles and responsibility in ensuring sustainability of water sources					
32	Community member receive necessary support from district technical staff concerning maintenance of our water source					
33	In my view the technical staff available are enough to meet our future mechanical needs of our water sources					

b) FINANCIAL SUSTAINABILITY

In this section, indicate your perceptions by ticking the most applicable choice applicable to your situation and experience. The choices are: 5= Strongly Agree, 4=Agree, 3=Not Sure, 2= Disagree, 1= Strongly Disagree.

i)	Mobilization of adequate financial resources	5	4	3	2	1
34	Community members contribute funds for maintenance of water source					
35	In my view the available funds in our water user group is enough to maintain our water source					
ii)	Efficient use of financial resources	5	4	3	2	1
36	All water projects are implemented by the district/sub county staff					
37	There is transparency and accountability in the way user fees are utilized.					
iii)	Reliability of financial resources	5	4	3	2	1
38	There is uninterrupted supply of water from our improved water sources.					
39	In case of breakdown repairs are done immediately					

THANK YOU FOR YOUR RESPONSE

Appendix 5: Interview Guide (Civil Servants, Local and Opinion leaders)

13th December 2012

Dear, Respondent

RE: ACADEMIC RESEARCH ON COMMUNITY PARTICIPATION AND SUSTAINABILITY OF WATER SOURCES IN KIBAALE DISTRICT: CASE STUDY KASAMBYA SUB COUNTY

I am pleased to inform you that you are one of the selected individual who were randomly selected to respond to this questionnaire. The data collected using this questionnaire will be used to compile an academic research report to be presented to Uganda Management Institute for award of a Masters in Management Studies (Project Planning and Management) degree.

You are cordially requested to spare some time and fill this simple questionnaire. The information obtained through this questionnaire shall be used for aforementioned purpose and will be taken with utmost confidentiality. For this reason, I do not seek to know the name or identity of any respondent.

Yours Sincerely

Kuteesa Andrew Ssenyonga
RESEARCHER

Position:

SECTION A: BACKGROUND INFORMATION

In this section please circle the category that best describes you

A1. Sex:

1. Male
2. Female

A2. Age:

1. Below 20 Years
2. 20-30 Years
3. 31 -40 Years
4. Above 40 years

A3. Marital Status:

1. Never Married
2. Married
3. Widowed
4. Divorced/Separated

A4. Highest Level of Education:

1. No formal Education
2. Primary level
3. Secondary level
4. Certificate
5. Diploma
6. Bachelors Degree
7. Masters Degree
8. PHD
9. Others (Specify)

General Questions

1. How do you generate funds for water projects?
2. Were you involved in the project planning and design?
3. How did you participate in the project planning/design of water projects and what were your roles?
4. How does supply of logistics affect the implementation of activities at your site?
5. How do you perceive the continuity of water projects after program phase out?
6. What measures exist in your community that can lead to continuity of water projects in case donor and government stop funding maintenance of water sources?
7. Which other factors do you think affect sustainability of water projects?
8. What suggestions do you have that may favour sustainability of water projects?

Thanks a lot for your cooperation

Appendix 6: Documentary Review Checklist

13th December 2012

Dear, Respondent

RE: ACADEMIC RESEARCH ON COMMUNITY PARTICIPATION AND SUSTAINABILITY OF WATER SOURCES IN KIBAALE DISTRICT: CASE STUDY KASAMBYA SUB COUNTY

I am pleased to inform you that you are one of the selected individual who were randomly selected to respond to this questionnaire. The data collected using this questionnaire will be used to compile an academic research report to be presented to Uganda Management Institute for award of a Masters in Management Studies (Project Planning and Management) degree.

You are cordially requested to spare some time and fill this simple questionnaire. The information obtained through this questionnaire shall be used for aforementioned purpose and will be taken with utmost confidentiality. For this reason, I do not seek to know the name or identity of any respondent.

Yours Sincerely

**Kuteesa Andrew Ssenyonga
RESEARCHER**

Position:

1. Budget for water sector for the period 2000 to 2012 for Kasambya Sub county
2. Budget for O&M period 2000 to 2012 for Kasambya Sub county
3. Budget for establishing and training of WUCs for Kasambya Sub county
4. List of all water sources constructed in Kasambya sub county since 2000
5. List of all water sources functional and non functional by category in Kasambya Sub county
6. List of water sources with functional and non functional water user committee in Kasambya Sub county

Thanks a lot for your cooperation