

**DETERMINANTS OF SUSTAINABILITY OF DONOR FUNDED  
WATER PROJECTS: A CASE OF WATER RESOURCES USERS  
ASSOCIATIONS IN BUNGOMA COUNTY KENYA**

**BY**

**APELI WESONGA CHRISTINE**

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**DECLARATION**

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

**Signature**.....

.....

**Apeli Wesonga Christine**

**Date**

(L50/70164/2013)

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

**Signature**.....

.....

**Mr. Vincent Marani [Lecturer],**

**Date**

Department of Extra-Mural studies,

University of Nairobi

## **DEDICATION**

This report is dedicated to my dear late father Abel Mumanga. He was my very first teacher. His endless love, continuous encouragement, support and desire to see me excel to greater heights in academic excellence has taken me this far.

This research report is also dedicated to my brothers; Alex and Patrick who encouraged me so much during this study and even supported me financially. It is also dedicated to my sons; Clyde and Brice for their warm and tender company always being by my side propelled me to work hard and excel in this academic journey. .

Finally, it is dedicated to my dear husband Calistus Wekesa for giving me intellectual and moral support throughout this study.

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## ABSTRACT

Access to safe and sufficient water is essential for the sustenance of human well being and is a basic human need. Meeting basic human needs is an equity requirement. Statistics reveal that about 17 millions Kenyans, 43% of the population, do not access to safe drinking water. In quest to meeting the United Nations Millennium Development Goal of halving the proportion of the population without sustainable access to safe drinking water and basic sanitation by 2015, the Government of Kenya and other development agencies have partnered with the community with a common goal of enhancing access to safe and adequate water supply. Despite the numerous projects in Bungoma County, access to water has remained a big issue in this area. In this regard, the study purposed to investigate the determinants of sustainability of donor funded water projects in the area with a focus on capacity development process, institutional and management development, financial factors and community participation. However, there is limited information on this subject as limited studies' have been carried out in Bungoma County. The study targeted a population size of 3,200 WRUA committee members and 5 stakeholders. Descriptive survey design was employed to gather information from a sample size of 320 respondents. Representative sample units were selected using purposive and systematic random sampling. Questionnaires and interview guide were used to collect data from the sampled stakeholders. Raw data was organized, edited, coded and analyzed for descriptive and inferential statistics using computer software, Statistical Package for Social Sciences and presented using frequency distribution and percentages WRUA had clear design process which spelled out sustainability as objective to be attained by 58.2% of the respondents agreed to little extent, though the managers did carry out baseline survey on little extent on community problem identification. On the level of trainers' technical skills among committee members, a majority of the respondents, 82.6% indicated fairly good skills and 37.4% of the respondents asserted to great extent on the level of WRUA collaboration with other agencies on sustainability of water projects. An overwhelming 85.6% reported that funding resources of water projects were hugely dependent on government or donor agencies, 79.9% of community respondents indicated that their project goals and objectives on income from the projects were clear. Majority of the respondents cited to some extent by 56.5% that the community was involved in the management's decision in implementation and operations issues of the water projects although 33.4% cited to have involved community in Monitoring and Evaluation of water projects of WRUA in Bungoma County, however, this is low. The study recommends that institutions should utilize various development processes to influence, educate and modify the behavior and attitudes of a target population, project implementers should be trained adequately on financial management, Effective project financial management strategies should be adopted to enhance accountability and transparency among community members on management issues and steer away conflict and increase participation in Monitoring and Evaluation. The study findings will benefit the Government, water project financiers and water users in realizing long term goals of new and existing water projects.

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## **ACRONYM AND ABBREVIATIONS**

**ADB** - African Development Bank

**NGO** -Non Governmental Organization

**CBO** -Community Based Organizations

**WB** -World Bank

**CP** -Community participation

**CPMs** - country programme managers

**IFAD** - International Fund for Agricultural Development

**NERCORMP** - North Eastern Region Community Resource Management Project for Upland Areas

**NORAD** -Norwegian Agency for Development Co-operation

**NWP** - National Water Policy

**TANGO** - Technical Assistance to Non-Governmental Organizations, Inc.

**TASAF** - Tanzania Social Action Fund

**USAID** - United States Agency for International Development

**UNDP** - United Nations Development Program

**URT** - United Republic of Tanzania

**WASH** - Water and Sanitation for Health

**WRUA** - Water Resources Users Associations

**WRMA** - Water Resource Management Authority

**O & M** -Operation and Maintenance

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the study**

Sustainability is the continuation of benefit flows to the local community without the help of the initiators who stimulated those benefits in the first place. Several projects stall after the withdrawal of the donor. Donors play a significant role in the social development process in all regions of the world. They are particularly critical in circumstances where State funds are limited, political situations are fluid, natural disasters resulting from both predictable and unpredictable environmental circumstances occur, ethical strife is rampant and the level of per capital income severely restricts the ability to purchase needed goods and services- social, education and economic.

In Central America donor funded projects were more sustained because of the strength of the institution implementing the projects. The other factors that contributed to sustainability of the projects were; their activities were fully integrated into established administrative; gained significant funding from the national sources and also there was a strong capacity building component. In India NERCORMP reported a significant degree of success in social mobilization and institutional capacity-building at the community level (Tango International, 2009).The case study attributed much of this success to an emphasis on participatory group formation and a project design reflecting community priorities. Moreover, projects were implemented with significant local contributions of labour, materials and, in some cases; cash (Tango International, 2009).

In South Africa, Sustainability has undergone major research by natural scientists and environmentalists in order to propound the issue of wise use of resources, both renewable and Inon-renewable, so that they are made available in right quantities to future generations Lyson et al. (2001); Treurnicht (2000). Much of this has been in the field of sustainable development. Joaquine (1994) did a study on development sustainability through community participation in which he associated project failure with weak institutional linkages, scarcity of resources and low workforce motivation. Dempster (1998) and David et al (2006) define sustainability as the ability of an activity

or system to persist. For the purpose of this research, sustainability is defined as the ability of donor aided programs to create systems that continue to connect and impact on the beneficiaries even after the programs are wound up.

In Malawi Detailed analysis of sustainability issues reveals inconsistent formation, training, support and development of water point committees. Many committees were found to be ill-equipped for the tasks they were assigned: that is operation and maintenance of water points and collection and deployment of maintenance funds. Slymaker & Newborne, (2004). In Uganda, Busiinge (2008) notes that donors need to carefully plan involvement of project beneficiaries' in design and implementation of community development projects. He adds that this will go a long way to achieve project ownership by the beneficiaries and the local government. He further suggests that in the event that NGO and Government co-financing is achieved, the continuity of project might be achieved.

In Kenya, Okun (2009) in his study of; Factors affecting Sustainability of Donor funded projects in arid and semi-arid areas in Kenya; observes that, there is need to educate and empower the local community on the sustainability of projects to ensure that they able to articulate the goals and objectives of the project and push them forward after withdrawal of donor funding. He adds that, the beneficiaries must be consulted during project conception, preparation and implementation process. Adhiambo (2002) in her work; Factors Affecting Effectiveness of Donor funded Development projects in Kibera; notes that there is need to encourage more involvement especially the community in the project planning and implementation in order to increase the probability of sustainability of the projects. Kitonga (2011) in his study factors affecting sustainability of donor funded rural water projects in Kitui, recommended that community preparedness to participate in and manage donor funded projects capacity building is key. Mureeithi (2012) in his work on Influence of Community Capacity Building on Performance of Water Resources Users Association in Water Catchment Management in Tharaka – Nithi observes that there is need for WRUAs to be capacity build not only in training but on skills of networking, information and knowledge management. The WRUAs support in

technical, infrastructure, equipment and human in early stages of WRUA operation in order to make them self-sustaining.

Sustainability of water projects in Kenya is questionable. Many water projects stall immediately after the donors' withdrawal. Water being a basic necessity to human beings there is need to establish the reasons why such projects. Institutional Development, financial factors, community participations are major determinants of such sustainability. WRUA is an association of water users, riparian land owners, or other stakeholders who have formally and voluntarily associated for the purposes of cooperatively sharing, managing and conserving a common water resource (Water Act, 2002). The objectives of WRUAs are conserving the water catchments; to increase the availability of water resources; to increase the usage of the water for economic and social improvements and to develop sustainable responsive institutions. The activities they engage in include; Exchange of information and ideas on the water resource use; discuss potential projects and developments that may affect water usage with a view to obtain the consent of other WRUA members and the public; monitor water availability and use and lobby for resources to improve availability, reliability, quality or other aspects of the water resources.

Membership includes Riparian land owners, Water abstractors, Non-consumptive (from informal institution) and observer members (mainly from formal institutions). For example identification of stakeholders within the common water resource including civic, Religious & opinion leaders as well as Institutions within the area; Organize, plan and mobilize a public baraza with the assistance from Provincial Administration; initial sensitization is done during the baraza; Interim committee is elected with the guidance of social officer in conjunction with Water Resource Management Authority (WRMA) (Gender, Zone and membership category representation) and regular meetings are held to develop a constitution from WDC draft constitution with the assistance from WRMA.

In relation to implementation of projects, sustainability is the probability that a project shall continue long after the outside support is withdrawn. Consequently, while thinking of project sustainability, three things must be born in mind; the community,

project results and external assistance. A project is sustainable if the community/beneficiaries are capable on their own without the assistance of outside development partners, to continue producing results for their benefit for as long as their problem still exists. There have been several projects funded by donors such as the World Bank, DFID, CIDA, and USAID among others, to help alleviate poverty in Kenya. Most of these projects have been designed for various communities living in Kenya. Urban and rural communities have been the centre of focus for many donor funded projects. The question that this paper seeks to answer why these projects are not sustainable and their impact not felt after donor withdrawal?

## **1.2 Statement of the Problem**

Globally, billions of shillings have been spent in communities to enhance the living situation of the people. However, one of the most critical obstacles is the extent to which the projects are able to persist despite the exit of donors, while the beneficiaries reap dividends; appreciate their participation and ownership role in the project. Apparently, it is sustainability that makes the difference between success and failure of community-based projects. Various factors such as technical, financial, institutional, economic, and social factors contribute to the failure to sustain the projects if not considered well in the project management cycle. Sustainability of projects funded by foreign aid is achieved when the continuation of benefit flows to the local community without the continued support of the projects or organizations that stimulated those benefits in the first place. Sustainability resembles a concern for what happens after a project terminates. However in reality, sustainability of development projects is increasingly limited and completely dependent on donors' funds and the implementing agency's continuity to support those projects. In the context of dependency, sustainability of projects tends to be at risk as soon as the donor decides to phase out or even at earlier stages (Water Resources Management Authority report on performance of Water Resources Users Association, 2015). Therefore the problem of the study was to explore the determinants of sustainability of donor funded projects; whereby the researcher focused on Capacity



Development, Institutional Development, Financial factors and Community Participation as the key themes.

According to Ababa (2013), development aid to Kenya stood at \$770m in 2005 and has been steadily rising since 2002, supporting several projects all geared towards development. Some of the projects have, however, been successful. However, little evidence is available on the true impact of funded programs on the lives of the poor in Kenya. One of the most critical obstacles is the extent to which the projects are able to persist despite the exit of donors, while the beneficiaries reap dividends, and appreciate their participation and ownership role in the project. Apparently, little evidence indicates that, it is sustainability that makes the difference between success and failure of community-based projects.

### **1.3 Purpose of the study**

The purpose of the study was to explore Determinants of Sustainability of Donor funded Water Projects of Water Resources Users Associations in Bungoma County.

### **1.4 Objectives of the Study**

The study was guided by the following objectives:

1. To establish how Capacity Development process determines sustainability of donor funded water projects in Bungoma County.
2. To assess how institutional and management capacity determine sustainability of donor funded water projects in Bungoma County.
3. To establish how financial factors determine the sustainability of donor funded water projects in Bungoma County.
4. To assess how Community Participation determines sustainability of donor funded water projects in Bungoma County.

### **1.5 Research questions**

The study sought to answer the following questions:

1. How does Capacity Development process determine sustainability of donor funded water projects?
2. How does institutional and management capacity determine sustainability of donor funded water projects?
3. How do financial factors determine sustainability of donor funded water projects?
4. How does Community Participation determine sustainability of donor funded water projects?

### **1.6 Significance of the Study**

Understanding determinants of sustainability of water projects will help water projects to continue supporting livelihoods of the communities even after withdrawal of the donor. This study is important because it will help the donors to gain insight on how well they can manage their development projects. It will also help the Government of Kenya to offer assistance to the donors as they implement development projects and finally future researchers and academicians will also gain from this study as it will provide them with reference information for further studies.

### **1.7 Limitation of the Study**

The major limitation was that the study coincided with the heavy rainfall which was expected in the region during the time of research period. This hindered the researcher from reaching as many areas as possible. The research instrument was administered in the morning and mid afternoons to avoid conventional rainfall which is mainly received in the afternoons.

## **1.8 Delimitations of the Study**

The study was basically concerned with determinants of sustainability of donor funded projects. It was restricted to respondents of Water Resources Users Associations and key stakeholders that work with them. The study was carried out in Bungoma County only. It was restricted to descriptive survey as a method of data collection.

## **1.9 Assumptions of the Study**

The study assumed that all respondents were honest and that the information given could be depended upon to make conclusions and deduction for the future. It also assumed that the sample selected was representative and hence the findings can be generalized to represent the entire target population.

## **1.10 Definition of significant terms**

### **Determinants of donor funded water projects**

Factors that influence the continuation of benefit flows to the local community without the help of the initiators who stimulated those benefits in the first place.

### **Donor funded projects**

These are projects that aim to create decentralized institutions for the poor that become a sustainable component of local governance systems. The projects have in common the initial investment in institution building and direct transfer of resources to the local level, where communities have a considerable degree of freedom as to the specific livelihood activities in which they invest.

### **Water Resources Users Associations**

These are community based groups that are registered with Attorney General Office and it has responsibility of collectively conserving water resources and actively participating in livelihood activities.

**Sustainability**

Refers to the continuation of benefit flows to the local community without the help of the initiators who stimulated those benefits in the first place

**Capacity Development**

Refers to training of the communities in Water Resources Users Associations groups in activities to be implemented

**Institutional Development**

Training of Water Resources Users Associations and other support organizations and key stakeholders that work with them

**Financial and levels of funding**

This are different thresh holds of funding given to the Water Resources Users Associations to implement projects.

**Community Participation**

Refers to actual involvement of the project beneficiaries into the activities being implemented

**1.11 Organization of the Study**

This research report is organized such that the preliminary pages contain; Declaration, Dedication, acknowledgement, abstract, abbreviations and acronyms. Chapter one contains; background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, definition of terms and organization of the study. Chapter two contains; literature review and theoretical review, conceptual framework. Chapter three contains; research methodology and data analysis techniques. Chapter four (Data analysis, presentations and interpretations) contains; introduction, questionnaire return rate, demographic characteristics of the respondents, capacity development on Sustainability, institutional development on sustainability, financial factors and sustainability and community participation on sustainability of donor funded water projects. Chapter five (Summary, conclusion and recommendation) contains; introduction, summary of the study, conclusions, recommendations and suggestions for further studies.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter reviews literature on themes related to sustainability and donor funded projects. These are: Capacity Development, Institutional Development, Financial factors and Community Participation. It also contains the theoretical and conceptual frameworks.

#### **2.2 Capacity Development process on Sustainability of Donor Funded Water Projects**

Institutions utilize various development processes to influence, educate and modify the behavior and attitudes of a target population. Such processes are used by all sectors, (Yacoob and Roark, 1990). Development processes are addressed here in the following categories; design process, communication and operations and maintenance. Capacity building is an essential step in preparing the community for sustainable development. Project design begins with the inception of the project, in that the communities are involved both directly and indirectly. The objectives of the project should be clearly stated and the underlying assumptions. Inputs, outputs and organizational strategies must be detailed. Sustainability issues should be explicitly addressed and stated as development goals. Organizations can build the capacity and the experience of the community on how to manage community-based projects after donors exit. Such trainings can also be done by government, universities, research centers, and other private organizations. Community members need more knowledge and skills to cooperate and assist in setting priorities so that they can deal with the project for sustainability purposes. The authors contend that capacity building is an empowering tool that enables the community to manage challenges on their own, rather than depending on the help of the organizations or donor.

Mwangi (2005) and Ravallion (2005) expressed that, a community development project starts with the identification of a need or the realization that there is a need. This allows sharing of the vision through need assessment, followed by group discussion analysis. Kerote (2007) stated that this will not only confirm the

need for change, but also clarify the scope of the problem at hand and the resource-based available. Project identification and costing lays squarely with the PMCs and the beneficiaries after identifying the project then the PMCs cost the project by preparing Bill of Quantities (BQ).

Okumus (2001) pointed out that factors that can be identified as common for strategy implementation are strategy development, environmental uncertainty, organizational structure, culture, leadership, operational planning, resource allocation, people, communication and control. These are the factors that influence strategy implementation. Although formulating a consistent strategy is a difficult task for any management team, making that strategy work, that is, implementing it is even more difficult (Hrebiniak, 2006). Dess et al (2005) assert that strategic management includes multiple stakeholders or community participation in decision making. This means that managers must incorporate the demands of many stakeholders when making decisions. The concept of strategic management has become popular in the public sector and is now being used as a standard tool for the public manager to create value and to shape the organization. All managers in the public sector must now maintain a strategic management perspective and assess how their actions impact the overall attainment of organizational objectives. To enhance community participation in tendering and supplies, several measures are put in place to facilitate smooth and transparent implementation of projects. These measures include: registration of contractors/suppliers and artisans, provision of information on tendering and supplies guidelines, and formation of a subcommittee for vetting and recommending suppliers (Achoka, 2013). This is also to ensure that the CDF money remains in the constituency. Communities may be engaged to use and coordinate their resources of personnel, time, money, goods, and services in a broad range of structures and strategies. Additionally, people- and community-based organizations often participate at different levels.

The community-led development approach is one of two basic models adopted by IFAD programmes throughout Asia and the Pacific. The other is a market-led approach, which guides programmes that focus primarily on agricultural production and

microfinance. Under the community-led approach, institutional capacity-building and social mobilizations are emphasized as a means through which vulnerable communities can achieve sustainable improvements in livelihood security. Based on previous internal evaluations and interviews with IFAD CPMs, the review found that the community-led approach is most appropriate in areas that are isolated from commercial centres, lack access to agricultural and other markets, and are characterized by distinct ethnic majorities, weak institutions and strong community cohesiveness (TANGO International, 2008a). The 2006 corporate evaluation of IFAD's regional strategy determined that, on the whole, programs have "generally been quite successful in social mobilization, promoting participation and contributing to building grass-roots institutions throughout the region" (IFAD, 2006b). It gave programmes in the region special credit for establishing a strong record of collaboration with NGOs, especially in South Asia. It noted that, throughout the region, NGOs working in partnership with IFAD have played a particularly useful role in social mobilization, training, rural finance, policy and advocacy, and direct supervision (IFAD, 2006b).

Communities with strong traditional institutions are typically better able to internalize new approaches and technologies. In order to build on these successes, the corporate evaluation recommended that those IFAD-supported projects focusing on social mobilization and capacity-building of community-based institutions give special consideration to three specific issues. First, it called for improved identification and capacity assessment of institutions at the local level. Of particular relevance to sustainability, it noted that villages with strong traditional institutions are typically better able to internalize new approaches and technologies. Hence, they are often better equipped to participate in relatively intense project activities in the short-term, as well as to sustain effective practices over the longer term. On a similar note, the evaluation highlighted the importance of developing a coherent strategy to ensure the convergence of newly formed community institutions, traditional power structures and governmental institutions. Such a strategy is vital in ensuring that different institutions operating at the

community level take complementary actions that lead to sustainable improvements in the lives of poor rural people (IFAD, 2006b).

In particular, local organizations can facilitate collective action by helping people make decisions and by providing a communication channel with the external environment. Often local organizations are valuable as channels of information with regard to the local community's needs. Moreover, because they share the local context with the target community, local organizations have an important role to play in planning and implementing project activities. And as vehicles for distributing benefits, they can support project equity objectives (Hisham, 2012). To add on this, 'beneficiaries' capacity building, especially on technical, financial and management aspects is important for the sustainability of water projects" (NWP, 2002). The community should be empowered with technical and managerial skills to enable them to own and manage their water project through establishing water user groups (URT, 2005).

The most obvious indicator of sustainability is the ongoing operation and maintenance of the system. Operation and maintenance is an integrating process which draws on community participation, health, education, financing, and management as well as the technical skills required to repair WRUS project facilities. Systems which are successfully operated and maintained are, in fact, being sustained since all of the foregoing processes must be successfully in place for this to happen. Studies of the sector often list O & M as the second biggest problem area after inadequate resources.

### **2.3 Institutional and management capacity on sustainability of donor funded water projects**

Attainment of any form of project sustainability is not an endeavor of a single day, but a life- long process (Wanjohi, 2010). Community based projects are complex and require multifaceted management skills (Weinberg, 2008). For project sustainability to be achieved the institutions and management involved in project implementation from the community to the national or international levels need to be empowered in terms of information, skills and resources (human and capital) for smooth running of activities for



sustainability of projects. The World Bank (2008) defines empowerment as the process of enhancing the capacity of individuals or groups to make choices and to transform those choices into desired actions and outcomes. Central to this process are actions which both build individual and collective assets, and improve the efficiency and fairness of the management and institutional context which govern the use of these assets.

According to McDade (2004), good management ensures that sufficient local resources and capacity exist to continue the project in the absence of outside resources. Espinosa, et al. (2007) opines that task familiarity is important in the community based projects and this is usually linked to performance which in turn is linked to sustainability. Good management goes beyond mere skills (Kirksch, 2000) to technical and expertise required to successfully implementing the project (Little, 1993). This study argues that institutional and management capacity is a recipe to effective project implementation as it encourages participation and involvement of the community in all the processes of project implementation, hence people feeling empowered. Empowered people have freedom of choice and action, which in turn enables them to better influence the course of their lives and the decisions which affect them.

The failure of many development projects can often be attributed to a narrow view of institutional development when defined in terms of individual skills and organizational characteristics. Often missed are important dimensions at the policy levels, or in supporting processes and the frameworks in which they operate. If not all levels and dimensions of institutional development are addressed, the potential of sustainable development might not be realized to its fullest extent Hisham (2012). It is important to keep in mind that institutional development consists of, but goes beyond, human resources and organizational development. It also involves change in and transformation of social systems. According to Hisham (2012), development embraces three levels: individual actors, organizations, and social systems, and consists of a broad range of activities at each of these levels. It should also be emphasized that the concepts of institution and organization are related, but not identical. Institutions refer mostly to the system level and the norms, values and regulations which guide and constrain the

behavior of individuals and organizations in a society, the rules of the game; while organizations are the actors -or players- within a system. An institution may be made up of many organizations, and ruled by a set of joint formal and informal norms and regulations.

Projects that build links with different organizations are more likely to be sustainable. They support and learn from each other, and are able to exploit others' agendas, for example, for new funding opportunities. It has also been found to be essential for the long-term survival of community-based programs. Many researchers including (Bamberger & Cheema, 1990; Lefebvre, 1990; Lerner, 1995) have found that creating conducive environment for collaboration contributes to a program's continuation and that these collaborations need to include all relevant community leaders and agencies and active community participation at all levels.

NERCORMP in India also reported a significant degree of success in social mobilization and institutional capacity-building at the community level (Tango International, 2009). The case study attributed much of this success to an emphasis on participatory group formation and a project design reflecting community priorities. Moreover, projects were implemented with significant local contributions of labour, materials and, in some cases; cash (Tango International, 2009). Although this approach meant minimal tangible 'progress' during early years, it has led to the establishment of community-based groups with a high potential for sustainability. In accordance with the project goal to "improve the livelihoods of vulnerable groups in a sustainable manner", the project specifically emphasized the empowerment of women. The case study determined that NERCORMP represented a significant and innovative break from previous projects in target communities by providing technically appropriate, culturally sensitive and institutionally effective alternatives to traditionally top-down development schemes (Tango International, 2009).

Programs and projects which integrate with and build on local management structures, have better prospects for promoting project sustainability (Mulwa, 2010). The capacity of local agencies to manage (or absorb) new structures, systems, ideas and funds is often not adequately assessed, and over-optimistic assumptions are often made. Getting the management structure right requires an adequate institutional analysis during the project formulation phase and this requires specific knowledge, skills and field time.

Adequate and effective staffing is also an important factor for sustaining community-based projects. Glaser (1981) discusses the need to involve staff in decision making; Bossert (1990) discusses the need for staff to be committed to project goals, and utilizing indigenous staff in community based projects. The lack of adequately trained personnel is a major detractor from sustaining community-based projects while providing adequate staff training for effective project delivery, supports project longevity (Bamberger & Cheema, 1990). Professionals can play a number of different roles in projects, all of which require trust and good working relationships with local people and other professionals. In order to establish good rapport professionals need time, resources and authority to invest in a project. Flexibility is critical in the way professionals interpret their own and others' roles and in the activities they and the projects undertake. Women participation in project activities; sub-projects and community institutions in 2008 were found to be low compared to their past activities (in 2000) and actual needs as well as the role performed by them in productive, and community management. However, no more activities were performed by women institutions during this period other than the previous women specific activities (sub-projects) funded by the women societies, utilizing the funds allocated for women. Moreover, women contribution in decision making process was also examined, but found to be negligible, due to men domination of the leading and decision making position in the community organizations. This study depicted that despite the withdrawal of the foreign assistance; the project existed and performed some activities including institutional, human, production, environmental capacity buildings and women participation in project activities. Oakley and Marsden (2007) who posited that stakeholders' support brings together individuals, families, or communities who assume responsibility for their own welfare and develop a capacity to

contribute to their own and the community's development. In the context of development, community participation refers to an active process whereby beneficiaries influence the direction and execution of development projects rather than merely receive a share of project benefits. In their support, the community participates in the community projects and therefore saves the projects resources which can later be channeled to produce more benefits to the project.

## **2.4 Financial Factors and Sustainability of Donor Funded Water Projects**

One of the key rudiments in project sustainability is the availability resources that are required for community-based projects. This means, selecting resources that should be available for the projected future, minimizing the possibility of project failure once it is up and running, due to inadequate essential materials. In many cases, this will mean identifying secondary sources of those materials that can be pressed into action. Inadequate funding detracts from a project's ability to be sustained (Bamberger & Cheema, 1990). However, there are many ways that funding can be linked to a project's ability to be sustained. Holder and Moore (2000) support developing local resources for enhanced sustainability emphasizing the importance of adequate local capacities to generate funds after external funding ceases.

Bossert (1990) asserts that planning for future funding needs to be in place early and needs to be continually developed during the life of the project; while LaFond (1995) discusses the need for longer initial funding periods to allow time for sustainability to be nurtured. As a result, projects have constantly to re-invent themselves so that they qualify again for set-up funding. Some projects are trapped in this cycle; this is not only time-consuming but hinders the natural development of the project. This is where generating increasing levels of income through trading may help some community projects break from this cycle of funding dependency

Assessing financial sustainability depends on the capacity to meet financial commitments in the short, medium and long-run; manage unforeseen financial shocks, any adverse changes and general economic conditions; and encounter arising risks

(Queensland Government, 2011). If funds are sufficient during the financing period, but insufficient afterwards to maintain the benefits for the rest of project's planned life, then the project's financial sustainability is at risk (Ministry of Finance of the Czech Republic, 2011). Financial sustainability of a project can be measured if we analyze the 'with donor funding' situation vis-à-vis the 'after donor funding ceases to flow' situation.

Accordingly, the financial sustainability of a project depends on whether or not the concerned institutions are able to pay the financial subsidies that may be needed for the project to survive. Unless these institutions re-generate funds in a sustainable and transparent manner, their continuity into existence is highly doubted. The financial performance of the institution managing the project after the donor phases out must also be sufficient to attract capital to the project and the forecasted cash flow must be sufficient to finance the project (ADB, 1993). Internal and external financial environments. Economic viability of a project depends on its financial viability, that is; sustainability of the project's financial returns. It is of great significance to account for the economic sustainability of a project. Economic sustainability refers to the project's ability to survive in the wider context (ADB, 1993). Even when a project is intended to influence only one particular community, if it hopes to have a sustainable impact, it cannot afford to ignore the broader context in which that community is embedded. In designing interventions, it is unwise to assume that an individual or community is somehow isolated from markets, policies, or other external influences.

The internal and external environments, in which the local community's activities operate, interact to determine the financial sustainability of the target members of that community. The external factors could non-exclusively include the ability or inability to benefit from current national growth, as well as laws and regulations in place; status of available surrounding infrastructure and services; types of industries in the area; and financial shocks, as well as other external risks (ADB, 1993). On the other hand, internal factors could include the nature of available resources and local community's assets; local community's demographic factors; quality of the organizational resources; continuity or discontinuity, as well as skills, of personnel in organizational structures;

capacity to absorb financial shocks with some degree of flexibility and take advantage of opportunities; having the necessary systems in place to operate efficiently, including appropriate technological resources, maintenance...etc.; access to market; existence of local financial measures that sustain risk management; existence of clear definitions of roles and responsibilities for avoidance of institutional conflicts (ADB, 1993) ;and degree of linkages with well-established institutions including private sector companies and/or civil society organizations. Unless such factors are taken into account, economic benefits will not be sustained (Queensland Government, 2011).

Projects often fail to induce sustainable processes as a result of financial factors. Project planners sometimes design projects as though the availability of donors' funds and host country resources were unlimited. In some development projects, high-cost subsidized goods and services are used without generating the ability to cover the cost of maintaining and/or replacing them. Thus, the possibility that these goods and services will continue to be provided after outside funding ends is reduced or eliminated (ADB 1999). In the cases where donors hand over project activities to the relevant line ministry of the host government; this creates huge financial burdens on the latter's budget. For most partner countries, funds required to continue to operate the project in most cases do not continue to be covered through government budgetary reallocation (ADB, 1993).

According to Hisham (2012), the introduction of donor-paid direct financial incentives from the donor's funds allows the local community to participate in project activities only as long as the donor pays; a trend which has proved its failure over the years. Moreover, the type of incentive system adopted by the project is not selected based on an assessment of the suitable organizational or contextual incentives or the common local disincentives for adoption of project activities for example; but rather it is the incentive system typically followed by donor headquarters –another major obstacle facing the sustainability of many development projects.

## **2.5 Community Participation on Sustainability of Donor Funded Water Projects**

Community involvement is an important factor for the sustainability of projects as it is the genuine involvement of local people as active participants and equal partners whose concerns and experience are intrinsic to the project's success. Community awareness and involvement in project planning and implementation are important elements in the sustainability of a project. Many scholars suggest encouraging active community participation at all levels of project design and implementation (Bamberger & Cheema, 1990) for sustaining those programs.

Locally initiated programs may be more sustainable (LaFond, 1995), so it might be necessary to develop some level of local institutional building (Bossert, 1990). Involving all relevant community leaders and agencies facilitates sustaining programs (Goodman & Steckler, 1989; Shediak-Rizkallah & Bone, 1998). The level of community support determines whether a project becomes established, how quickly and successfully it consolidates, and how it responds and adapts to meet changing needs. It is therefore important that involving local communities" starts at the identification phase, when decisions are being made about what type of project is required to address their priority need. Sustainability cannot be achieved without their involvement and support and thus, stakeholder analysis is paramount to be able to identify the key actors who should be involved in every stage of project management cycle. Stakeholders, both men and women, should actively participate, hence having the opportunity to influence the direction and detail of design and implementation. Allocating adequate time and resources for participatory analysis and responding to demand-led approaches are important ways to improve participation.

Bamberger & Cheema (1990) asserts that community participation is one of the major contributing factors for sustained community project because without the community, the project cannot stand on its own. While other factors that can be seen to make the community development project sustainable include, planning, programme operations, fact finding and research, budget allocation and analysis, public relation,

human commitment, team work, location etc, all these come from the implementing organization.

According to UNDP, community development fell out in the late 1960s and early 1970s; primarily because of the wide spread disenchantment with the top down bureaucratic approach to development and its failure to distribute benefits. During this era community came to be associated with coerced labour, although it was then called voluntary.

Community responsibilities in water project to include providing required contribution, owning the projects, participating in project security, participating in the implementation of the project activities, monitoring of project activities, receiving and discussing reports, and attending meetings in order to give suggestions and ideas to improve project performance TASAF(2005). Participation to development have been proliferating in third world countries since 1980`s, and they are now accepted components of projects design among mainstream donor agencies. The advocates and practitioners of the concept proclaim that people`s empowerment, local knowledge and community ownership are indispensable ingredients of project success and sustainability. Under label such as `people`s participation`, public involvement `, community participation`, social mobilization`, self help development`, and `grassroots development`, projects have been initiated on smallholder crop and livestock development, irrigation and water supply alike Bastian and Bastian (1996).

In the study “An Assessment of Community Participation in Water Supply and Sanitation Services: The Case of Yombo Dovya and Barabara ya Mwinyi, Water Community Projects, Temeke, Tanzania” Mwakila (2008) had the objectives of Community Participation in the context of water project as sharing project cost, increasing projects efficiency, increasing project effectiveness, and increasing community empowerment. “Water supply facilities provided without the active participation of the beneficiaries in planning and management are often not properly operated and maintained and hence are unsustainable” (NWP, 2002). Ownership of the facilities including water wells is neither perceived to be, nor legally vested in user communities. These factors



lead to a lack of commitment to maintenance of the facilities by the users. Communities should be empowered to initiate, own and manage their water schemes including water wells. In order to ensure that communities become legal owners of water supply schemes the following should be undertaken: Legal registration of water user entities should be instituted to ensure that communities are the legal owners of their water supply schemes including water wells; Roles, responsibilities, rights and limits of authority of water user entities should be clearly defined and Communities should be facilitated in acquiring technical and management skills (NWP, 2002, Kasiaka, 2004).

Community acceptance and project ownership promote project support by all stakeholders involved in the project, hence reducing community resistance in participation in project activities. Chappel (2005) indicates that community support increases project efficiency, which impacts positively on project sustainability. Further, Akerlund (2005) highlighted that community support increases project effectiveness as it helps to ensure that the project achieves its objectives and that benefits go to the intended groups. This paper contends that the minds and ideas of community members is the greatest resource of a community. While embracing community acceptance and project ownership, projects are geared towards sustainability.

It is estimated that 35% of improved rural water supplies in sub-Saharan Africa are non-operational and this scenario is no exception in Kenya (Ababa, 2013). Chambers (1983) points out that empowerment allows people to have access to productive resources which enable them to increase their earning and obtain goods and services that they need, and to participate in the decisions that affect them. Participatory methods can be used to guarantee the inclusion of all the stakeholders, the establishment of agreements between them, and the provision of appropriate information at each level and for different purposes. Information is a key ingredient for accountability because it is only when people know what resources are available, how they are being channelled, and how decisions are being made, that they can hold project's staff to account. When primary stakeholders can hold other stakeholders accountable, power shifts to them. Thus, the objective of improving accountability and empowerment are strongly related to each

other (Cornwall et al. 2000). Participation provides an opportunity to establish new habits of control, reporting and shared responsibility in development interventions. The peoples participation also helps for an improved understanding of the role of the several stakeholders involved and the limitation of technical and financial resources that exist to address the problems of the poor (Mulwa, 2010).

Where project ownership is exclusive, those in control are less likely to respond positively to the needs and ideas of the wider group. This can have a long-term impact on project sustainability. However, income generating activities need individual ownership. For example, the livelihood project for reformed street youth by Ex-street children organization (ECCO) in Kenya. From the descriptive analysis done, it was found that income generating activities cannot sustain itself because of the communal ownership; therefore, it is recommended that, the focus should be on individual ownership if viability and sustainability is to be achieved in community development projects (ECCO, 2010). Research shows that donor-led and top-down projects generally fail to bring sustainable benefits because they do not lead to stakeholder ownership and commitment. Genuine participation and ownership is not being adequately addressed if the main strategy consists of simply running workshops or briefings to let them know what you are doing.

DAC (2001) agree but add that project monitoring and evaluation involves measuring, assessing recording and analyzing the project information on a continuous basis and communication the same to those concerned. Crawford and Bryce (2003) argue that monitoring is an ongoing process of data capture and analysis's for primarily project control with an internally driven emphasis on efficiency of project. The authors define efficiency of project. The authors define efficiency in this context as doing the right thing that is efficient conversion of inputs to outputs within budget and schedule and wise use of human, financial and natural capital. This definition emphasizes the fact that monitoring is geared mainly to project control. Evaluations are systematic and independent. They are an assessment of an ongoing or completed project including its design, implementation and results. Evaluation assess the relevance, efficiency of implementation,

effectiveness, impact and suitability of the project, Uitto, (2003); OECD, (2002) should be credible and objective, IFAD, (2004).

Rogers, as cited by Uitto (2000) identifies advantages of the theory based framework to monitoring and evaluation to include being able to attribute projects outcomes to specific projects or activities and identify unanticipated and undesired programme or project consequences. Theory based evaluations enable the evaluator to tell why and how the programme is working, Weiss, (2003): and Birkmayer and Weiss, (2000). Monitoring and evaluation are intimately linked to project management functions and as a result there is a lot of confusion in trying to make them work on projects Crawford and Bryce, (2003) Monitoring and Evaluation are distinct but complementary, Passia, (2004). Casley and Kumar (1986) as quoted by Crawford and Bryce (2003) disapprove the use the acronym M&E (Monitoring and evaluation) as it suggest that we are looking at a single function without making a clear distinction between the two. Monitoring ensures that implementation is moving according to plans and if not, the project manager takes corrective action.

Monitoring enhances project management decision making during the implementation thereby increasing the chances of good project performance Crawford and Bryce, (2003): and Gyorkos, (2003). It also facilitates transparency and accountability of the resources to the stakeholders including donors, project beneficiaries and the wider community in which the project is implemented. Monitoring tracks and documents resources use throughout the implementation of the project, Passia (2004): Uitto, (2004). Evaluation assesses project effectiveness in achieving its goals in determining the relevance and sustainability of an ongoing project, McCoy, (2005). It compares the project impact with what was set to be achieved in the project plan, Qhapiro (2000). Evaluations are mainly of two types depending on when they take place. These are formative and summative evaluations. Formative Evaluation is concerned more with efficient use of resources to produce outputs and focuses on strengths, weakness, and challenges of the project and whether the continued project will be able to deliver the project objectives or it needs redesigning, Passia, (2004).

## **2.6 Project Sustainability**

From a sociological and anthropological standpoint, projects are primarily social interventions within a given social system, arousing social processes which change at least to some extent the social structures and institutions of this system and the social behavior of its members (Meyer, 2002). Therefore, development practitioners should ensure that the social systems adapt to the changing social trends in the community-based projects to enhance project sustainability. According to Ingle (2005), for a project to achieve sustainability, it needs to be implemented through a strategic approach. The strategic approach incorporates four main elements, future orientation: assuming things will change, and planning to maximize benefits which can be derived during and from that change; external emphasis: recognizing the diversity of the project environment and the many dimensions which impact on project outcomes, including technology, politics, society, and economics; environmental fit: planning for a continual fit between the project and its environment, including mission, objectives, strategies, structures, and resources; and process orientation: planning and management priorities evolve in an iterative cycle of conscious and deliberate learning from experience as the reality changes.

Project sustainability is a major challenge not only in Kenya, but also in many developing countries. Most projects implemented at huge amounts often tend to experience difficulties with sustainability. Donors such as the World Bank, DFID, USAID and other bilateral aid agencies have been expressing concerns on project sustainability, while the trend with implementation of projects is showing significant improvement, post-implementation sustainability is rather disappointing with very few projects being sustained.

Despite huge amounts of money spent on implementation of projects in Kenya, poor sustainability is depriving them from the returns expected of these investments. Several factors are responsible for poor project sustainability. Some factors are simple and others are quite complex. Some are within the control of the project management,

while others come as external threats. This paper articulates the dilemma of project sustainability from different perspectives in the subsequent sections.

Foreign development assistance in Kenya has been a move towards addressing the underlying causes of poverty. A recent manifestation is the move towards sustainability, which stresses community mobilization, education, and cost-recovery (Thematic Group, 2005). Converse to this, majority of community development projects in Kenya faces challenges of sustainability. In Kenya, (NETWAS International, 2009) notes that provision of water and sanitation services through projects is one thing and maintaining the services is quite another. Evaluations and assessments done a few years after commissioning of various WASH (Water, Sanitation and Hygiene) projects in developing countries, of which Kenya form part, come with the dismal report that the project is „dead“, or it is performing far below par.

Despite the Kenyan government effort of setting ambitious targets to provide access to safe drinking water and basic sanitation facilities to 85% of the population by 2015 and 100 % by 2025 in line with MDGs, the country still faces considerable challenges in reaching the water and sanitation Millennium Development Goals (USAID/Kenya). According to the Joint Monitoring Programmes 2012 progress report, access to safe water supplies throughout Kenya is 59 percent with access in rural areas remaining as low as 47 percent. A few water projects that have become sustainable, is due to the strategies integrated before the projects were completed which included, effective mobilization of communities through sensitization and training to achieve ownership; collaboration with various stakeholders (the government, local leaders, politicians and the target communities) in the project sites that ensured actual implementation of projects and continuity of those projects when implementing agencies pulled out of the area; application of appropriate technologies; gender considerations that empowered women to handle community projects; Environmental impact considerations into a project; sensitivity to socio-cultural factors in the communities; capacity building for communities and effective monitoring and evaluation. Other factors include effective networking with all stakeholders.

## **2.7 Literature Review and Knowledge Gap**

The researcher did an intensive review of literature related to sustainability of donor funded projects. From the literature reviewed, a number of gaps emerged which further informed the direction the study took. One, from Tango International (2008) study, while social mobilization and capacity-building of local organizations in the Lao People's Democratic Republic have led to success in formulating village development plans ,the case study found that many local institutions need to significantly improve documentation of intervention priorities, timelines of activities, resource requirements, assignment of responsibilities and performance-monitoring measures. The Viet Nam case study highlighted the importance of developing systems to ensure that newly established institutions are held accountable to the interests of the entire community, rather than working solely for the benefit of influential groups. Since beneficiaries' capacity building, especially on technical, financial and management aspects is important for the sustainability of water projects (NWP, 2002), the community should be empowered with technical and managerial skills to enable them to own and manage their water project through establishing water user groups (URT, 2002). In this context, the study will examine whether training is offered to WRUAs to build up their capacities.

In a study by Hisham (2012) on Financial and Institutional Sustainability of Development Projects: The Case of the Green Corridor Project and the Case of the High Dam Lake Area Project to establish the adequacy of funds to cover expenditures, the High Dam Lake Area project provided the needed capital to be used by the agricultural cooperative and community development association for provision of revolving loans to settlers, encouraging numerous income generating activities. Making use of the idea of revolving funds is financially sustainable in itself. The project management provided those local institutions' staff members with the needed training on how to revolve those funds and generate profit beyond ceasing of external funding. A training of trainers was also provided to allow the staff to train the applicants for loans to submit reliable feasibility studies. In this study, the researcher will evaluate financial issues that affect sustainability of WRUAs for instance; Funding levels/amount and Risk Management.

In the study “An Assessment of Community Participation in Water Supply and Sanitation Services: The Case of Yombo Dovy and Barabara ya Mwinyi, Water Community Projects, Temeke, Tanzania” Mwakila (2008) had the objectives of Community Participation in the context of water project as sharing project cost, increasing projects efficiency, increasing project effectiveness, and increasing community empowerment. Water supply facilities provided without the active participation of the beneficiaries in planning and management are often not properly operated and maintained and hence are unsustainable. The researcher investigates Community Participation with key interest in beneficiaries of water and sanitation services and how they affect sustainability of the water projects.

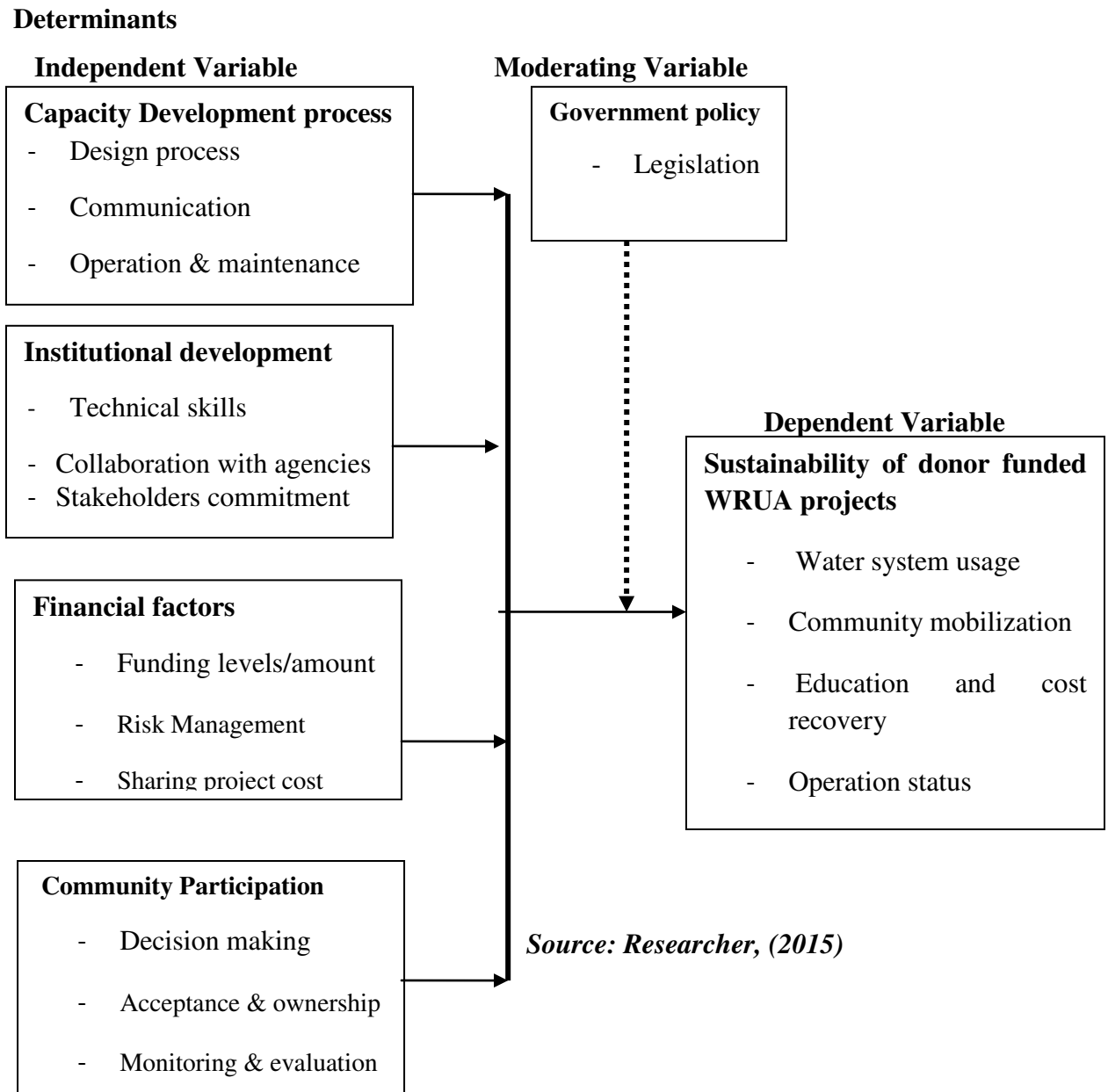
## **2.8 Theoretical Framework**

The study was grounded on the theory of resilience that was put forth by Holling (1973). The theory explains that a system has the ability to absorb disturbance and still retain its basic function and structure. And as humans seek persistence, it connects with sustainable development which has the objective of creating and maintaining prosperous social, economic and ecological systems Folke et al (2002). This is in line with the study since persistence shifts policy from those that aspire to control change in systems assumed to be stable to managing the capacity of socio-ecological systems to cope with, adapt to, and shape change. The theory is further supported by utilitarian theory by Bentham and Stuart (1843) that holds that the proper course of action is one that maximizes utility thus maximizing benefits and reducing suffering/negatives. This is true for donor funded projects if stakeholders ensure that programs are sustainable long after their completion. Borrowing from the theory of resilience, the study sought to assess how institutional and management capacity determine sustainability of donor funded water projects in Bungoma County, how financial factors determine the sustainability of donor funded water projects in Bungoma County and how Community Participation determines sustainability of donor funded water projects in Bungoma County after donor withdrawal.

## 2.9 Conceptual Framework

This study was guided by the following conceptual framework, which is used to explain the interrelationship between variables. A conceptual framework is a scheme of variables a researcher operationalizes in order to achieve the set objectives. Oso and Onen, (2000).

**Figure 1: Conceptual Framework**



**Figure 2.1 of conceptual framework shows relationships between variables**



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents the methodology that the study followed. It explains the research design; study area; population; sample size, sampling techniques and procedure; data collection instruments; methods of testing the validity of research instruments; the research procedure that was followed; and the data management and analysis techniques that were used in conducting the study.

#### **3.2 Research Design**

Research design refers to an arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. Kothari (2009) defines research design as the conceptual structure within which research is conducted; it constitutes the blue print for the measurement and collection, analysis of the data. Kothari (2009) observes that a descriptive design is a study that is concerned with describing the characteristics of a particular group, individual or situation. This study used a descriptive design, this was ideal because it gave information on the ways things are.

#### **3.3 Target population**

Population is a larger group from which a sample is selected. The target population is the population which the researcher wants to generalize the results Mugenda and Mugenda (2013). The target population of the study was comprised of 200 from 16 WRUAs totaling to 3200 WRUA chairpersons and members and 5 key informants who are officials from the National Ministry of Water Services, Kenya Forest Service, Ministry of Agriculture and Livestock, Bungoma County Ministry of Water and Water Resources Management Authority (WRMA). Hence there was a total target population of 3205.

### **3.4 Sample Size and Sampling**

This section describes the sample size and the sampling procedure that was employed for this study.

#### **3.4.1 Sample Size**

A sample is a smaller group obtained from the accessible population who will act as respondents/ interviewers. To determine sample size the researcher used 10% of the target population according to Mugenda (1999) the sample size was 10% of 3205 which is 320.

#### **3.4.2 Sampling Procedure**

Sampling is a process of selecting a number of individuals for a study in such a way that individuals selected represent the larger group from which they are selected. The main purpose is to secure a representative group which will enable the researcher to gain information about their population Mugenda and Mugenda (1999). The study used both purposive and systematic random sampling. Purposive sampling ensured that all the 16 WRUAs chairpersons and 5 key informants participated in the study and provided information concerning the subject of the study. Systematic random sampling was used to select each tenth subject of the 300 members 320.

### **3.5 Research Instruments**

The study used questionnaires and interviews schedules as the research instruments. According to Oso & Onen (2008) Instruments are tools to collect data. Gee (1993) defines questionnaire as a set of questions to be answered by respondents without the personal aid of an investigator. The questionnaire items were both structured and closed ended because Mugenda and Mugenda (2003) observes that they are easier to administer, analyze and are economical to use in terms of time and money. The unstructured or open ended questions were also used because they permit a greater depth of response by giving the respondents the freedom to use their own words in response. The interview schedule helped the researcher to get the required information from WRUA chairpersons and key informants on organization of their groups and how they

function. Oso & Onen (2008) defines interview schedule as a person to person verbal communication where one person or groups of persons ask the other questions intended to illicit information. The study used structured interview guide to obtain information from the respondents.

### **3.5.1 Piloting**

Piloting is pre-testing or ‘trying out of a particular research instruments,’ Mugenda (2003). A pilot test disregards all unnecessary, difficult or ambiguous questions and establishes those responses that can be interpreted in terms of information required. A pilot test was conducted to ten numbers of Water Resources Users Association officials and members who did not participate in the actual research from the neighboring Busia County.

### **3.5.2 Validity of the Research instruments**

It is a degree to which results obtained from the data analysis actually represents the phenomenon under study. This study used content validity. According to Kothari (2004) content validity is the extent to which a measuring instrument provides adequate coverage of the topic under study. The researcher used independent judges from the University of Nairobi teaching staff including the supervisor to check and validate the interview schedule and questionnaires that were used in the research study to obtain suggestions for modification.

### **3.5.3 Reliability of the Research instruments**

This refers to the accuracy and precision of a measuring procedure. A measure is reliable to the degree that it produces consistent results. According to Mugenda & Mugenda, (2003) a questionnaire is in most cases a reliable tool to collect data such that there is uniformity in the questions. The researcher administered questionnaires to ten Water Resource Users Association members and officials who were not in the sample twice before commencement of data collection from the sampled respondents. After two weeks the researcher administered the same questionnaires to the ten Water Resource

Users Association officials and members again. The reliability was ascertained by correlating the two questionnaires using Karl Pearson's coefficient formula.

$$r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{n(\sum x^2) - (\sum x)^2} \sqrt{n(\sum y^2) - (\sum y)^2}}$$

The scores were similar; r was organized meaning that the results were consistent in the two weeks period. This was done to test understanding, difficulty of questions and willingness of respondents to respond.

### **3.6 Data Collection Procedure**

An introduction official letter was drafted by the university to the researcher to present to the Water Resources Users Associations to allow the researcher access the premise and conduct the interview. The researcher carried it during data collection, presenting it before the in-charge person requesting to be given permission to conduct research. The researcher then proceeded to collect data after permission was granted. During data collection, every randomly selected Water Resource Users Association member or official was requested to have a face to face interview.

### **3.7 Data Analysis and Interpretation**

The study employed Statistical Package for Social Science as a package to summarize and organize the data that was collected. There was cross checking of the questionnaire to ensure that the questions were well answered. Coding of answered questions was done and organization of the whole information done before the analysis of the data. Qualitative data was first divided into themes and sub themes before being analysed. In the analysis of collected data, Statistical Package for Social Science was used. Frequency and percentages were used in the analysis and presented in a tabular form to enhance interpretation of the data. The frequencies and percentages were used to assess the determinants of sustainability of water projects in Bungoma County.

### **3.8 Ethical Consideration**

Ethics was an integral part of this research study right from planning stage to the actual conducting of the study. The researcher observed confidentiality especially from the information given on questionnaires. The respondents' information was not passed on to the third party. The respondents' names were not written on the questionnaires. The researcher did personal introduction before the respondents' and explained her mission and then sought for consent from the respondents' before administering the questionnaire.

### 3.9 Operational definition of variables

Objective	Type of variable	Indicators	Source	Scale of measurement	Statistical Test	Significance Level
To establish how Capacity Development process determine sustainability of donor funded Water projects	<b>Independent:</b> Capacity Development process	- Design process;  -Communication  - Operation and maintenance	WRUA projects	Nominal	Frequencies, cross tabulation	0.05
	<b>Dependent:</b> Sustainability of donor funded WRUA projects	- Organizational structure - Community control - Water system usage - Operation <b>status</b>	WRUA projects	Ordinal Nominal		
To assess how institutional and management developments determine sustainability of donor funded water projects	<b>Independent:</b> institutional and management developments	- Technical Skills - Collaboration - Stakeholders support		Ordinal Nominal	Frequencies, cross tabulation	0.05
	<b>Dependent:</b> Sustainability of donor funded WRUA projects	- Organizational structure - Community control - Water system usage - Operation <b>status</b>	WRUA projects	Ordinal Nominal		
To establish how financial factors determine sustainability of donor funded water projects	<b>Independent:</b> financial factors	- Funding levels/amount  - Risk Management  - Income from the projects	WRUA projects	Ordinal	Frequencies, cross tabulation	0.05
	<b>Dependent:</b> Sustainability of donor funded WRUA projects	- Organizational structure - Community control - Water system usage - Operation <b>status</b>	WRUA projects			
To assess how community participation determines sustainability of donor funded water projects	<b>Independent:</b> community participation	- Managements' Decision making  - Ownership of projects  - Monitoring and Evaluation	WRUA projects	Ordinal	Frequencies, cross tabulation	0.05
	<b>Dependent:</b> Sustainability of donor funded WRUA projects	- Organizational structure - Community control - Water system usage - Operation <b>status</b>	WRUA projects			

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATIONS AND INTERPRETATION

#### 4.1 Introduction

This chapter covers the findings, presentations and discussions of the results for the study on ‘Determinants of Sustainability of Donor funded Water Projects in Bungoma County, Kenya’. The main sub headings include demographic characteristics of the respondents, instrument return rate, capacity development on Sustainability, institutional development on sustainability, financial factors and sustainability and community participation on sustainability of donor funded water projects.

#### 4.2 Questionnaire Return Rate

This study targeted all the WRUA members and their officials whose interests are directly linked to water management activities. Out of 320 questionnaires and interview schedules administered to the WRUA officials and members and the key informants, 299 responded representing a return rate of 93.4%;  $(299/320 \times 100)$ . Table 4.1 shows the distribution and return rates of respondents for the study.

**Table 4.1 Questionnaire Return rate**

<b>Target category</b>	<b>Dispatched</b>	<b>Returned</b>	<b>Return rate (%)</b>
WRUA officials	315	295	93.65
Stakeholders	5	4	80.0
<b>Total</b>	<b>320</b>	<b>299</b>	<b>93.4</b>

These response rates were sufficient and representative and conform to Mugenda and Mugenda, (1999) who stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. This commendable response rate was due to extra efforts that were made via personal calls and visits to remind the respondent to fill-in and return the questionnaires.

### 4.3 Demographic Characteristics of the Respondents

This section presents the demographic information of the respondents with the aim of establishing the general background of the respondents that participated in the study. The areas discussed include gender, age, educational level, and respondents' position, work experience of the respondents they had served in the position.

#### 4.3.1 Respondents by Gender in WRUA in Bungoma County

An item was included in the questionnaire which sought information on the gender of the members and officials responding to the survey. Out of the 299 interviewed, 191 which represents 63.9% were male and 108 which represented 36.1% were female. From the study, it was revealed that majority of the WRUA member and officials were men.

**Table 4.2 Gender of Respondents**

<b>Response</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Male	191	63.9
Female	108	36.1
<b>Total</b>	<b>299</b>	<b>100.0</b>

As portrayed in table 4.2 above, the number of men in the WRUA membership and leadership positions almost twice that of women. This 191 (63.9%) male representation was a clear indication that majority of women are still not actively engaging in water management activities may be attributed to the fact that they are not yet capacity build on such issues.

#### 4.3.2 Respondents by age in WRUA in Bungoma County

The study also sought to estimate the range of age of the member and officials. 5.4% were below 20 years old, 11.4% were between 20-29 years old, 45.2% were



between 30-39 years old, 29.1% were between 40-49 years old and 9.0% were over 50 years old. Table 4.3 summarizes the distribution of respondents by age.

**Table 4.3 Ages of the Respondents**

<b>Age</b>	<b>Frequency</b>	<b>Percentage (%)</b>
< 20 years	16	5.4
20-29 Yrs	34	11.4
30-39 Yrs	135	45.2
40-49 Yrs	87	29.1
>50 Yrs	27	9.0
<b>Total</b>	<b>299</b>	<b>100.0</b>

From Table 4.3, the findings show that the majority of the WRUA members and officials were between 30 and 39 years of age 135 (45.2%) responses and this shows that the youths are actively involved in management of water resources as compared to the old.

#### **4.3.3 Respondents by education level in WRUA in Bungoma County**

This item was included to gauge the level of education of the WRUA member and officials. The table 4.4 shows 1.3% of the WRUA members and officials have attained primary education, 29.8% of officials had attained secondary school education, 38.5% tertiary education, 21.5% undergraduate education, 7.4% have attained post graduate while 1.7% have attained other levels like apprenticeship.

**Table 4.4 Education level of the Respondents**

<b>Level</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Primary	4	1.3
Secondary	89	29.8
Tertiary	115	38.5
Undergraduate	64	21.5
Post graduate	22	7.4
Others	5	1.7
<b>Total</b>	<b>299</b>	<b>100.0</b>

From Table 4.4, majority of the WRUA members and officials had attained sufficient education by 115 (38.5%) responses. This is said to be important in influencing the kind and nature of the decisions and leadership they provide to the management of the water resources. There is a correlation between education and decision abilities of individuals.

#### **4.3.4 Respondents' position in WRUA in Bungoma County**

The respondents were also asked to state their positions in the various committees that manage a WRUA. The distribution of the positions held by the WRUA officials and members show that 11.7% are executive committee members, 15.1% are monitoring officials, 7.7% are finance officers, 12.0% procurement officers and members were 53.5% of the respondents. The rest of the respondents were officials from the water ministry and other relevant government departments. Table 4.5 illustrates the study findings.

**Table 4.5 Respondents' positions**

<b>Position</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Executive committee member	35	11.7
Monitoring official	45	15.1
Finance	23	7.7
Procurement	36	12.0
Member	160	53.5
<b>Total</b>	<b>299</b>	<b>100.0</b>

From Table 4.5, the findings show that most of the respondents were members by 160 (53.5%) responses.

#### **4.3.5 Period served as a WRUA member or official in WRUA in Bungoma County**

The respondents were also asked to state the time they had served in the WRUA either as a member or an official and the findings showed that, 46 (15.4%) of the respondents said they had operated for a period < one year, 78 (26.1%) of the respondents had only operated between 1-3 years. Between 3 and 5 years constituted 112 (37.5%) of the respondents, while those who had been in operation for more than 5 years were only 63 (21.1%) of the respondents. Table 4.6 illustrates the study findings.

**Table 4.6 Work experience of the Respondents**

<b>Period served</b>	<b>Frequency</b>	<b>Percentage (%)</b>
< 1 year	46	15.4
1-3 Yrs	78	26.1
3-5Yrs	112	37.5
> 5 Yrs	63	21.1
<b>Total</b>	<b>299</b>	<b>100.0</b>

Table 4.6 represents the distribution of the WRUA officials and members in relation to the number of years they have served in their respective positions. Majority of the respondents have served in their respective roles for between one year and three years with 112 (37.5%) responses. This indicates that at least majority of respondents had served long enough to be aware of what is to be done in the WRUA. Experienced leaders seemed to understand issues and seemed to make better informed decisions than those who had served for shorter periods.

#### **4.4 Capacity Development process on sustainability of donor funded water projects in WRUA in Bungoma County**

The first objective of the study focused on the capacity development process of the WRUA committee members and its ability to influence the continuity and sustainability of the donor funded water projects in the communities. Therefore various aspects of capacity development were considered as outlined below. On a scale of Great extent (GE), some extent (SE), little extent (LE) and virtually nothing (VN), the respondents were asked to state their opinion that best described their responses on indicators of design process, communication and operation and maintenance.

#### **4.4.1 Extent of design process of donor funded Water Projects on sustainability in WRUA in Bungoma County**

The respondents were asked to state the extent of design process and how it determines sustainability of WRUA in Bungoma County and the findings shows that 25 (8.4%) of the respondents agreed to great extent that WRUA had clear design process spelled out sustainability as objective to be attained, 80 (26.8%) to some extent, and 174 (58.2%) to little extent while only 20 (6.6%) of WRUA indicated virtually nothing to the statement. They also indicated that the communities had substantive input on problem identification and project design where 156 (52.2%) of the respondents asserted to great extent, 82 (27.4%) to some extent, and 60 (20.1%) to little extent while 1 (0.3%) of WRUA indicated virtually nothing to the statement. Concerning whether a baseline survey was carried out to verify project assumptions and obtain information on the knowledge, attitudes and practices related to WRUA water projects and 30 (10.0%) of the respondents asserted to great extent, 56 (18.7%) to some extent, and 189 (63.2%) to little extent while 24 (8.1%) of WRUA indicated virtually nothing to the statement. Table 4.7 shows the study findings.

**Table 4.7 Extent of design process of donor funded Water Projects on sustainability in WRUA**

Extent of design process of water projects	GE		SE		LE		VN		TOTAL	
	F	%	F	%	F	%	F	%	F	%
design process spelled out sustainability as objective	25	8.4	80	26.8	174	58.2	20	6.6	299	100
Substantive input on problem identification & project design by community	156	52.2	82	27.4	60	20.1	1	0.3	299	100
Baseline survey carried out to verify project assumptions	30	10.0	56	18.7	189	63.2	24	8.1	299	100

From Table 4.7, WRUA had clear design process spelled out sustainability as objective to be attained by 174 (58.2%) of the respondents agreed to little extent. These results are in agreement with other findings by Yacoob and Roark, 1990 who indicates that institutions utilize various development processes to influence, educate and modify the behavior and attitudes of a target population. Such processes are used by all sectors. Development processes are addressed here in the following categories; design process, communication and operations and maintenance. Capacity building is an essential step in preparing the community for sustainable development. Project design begins with the inception of the project, in that the communities are involved both directly and indirectly.

They also indicated that the communities had substantive input on problem identification and project design where 156 (52.2%) of the respondents asserted to great extent. This had a bearing on project sustainability. Mwangi (2005) and Ravallion (2005) expressed that, a community development project starts with the identification of a need or the realization that there is a need. This allows sharing of the vision through need

assessment, followed by group discussion analysis. Kerote (2007) stated that this will not only confirm the need for change, but also clarify the scope of the problem at hand and the resource-based available. Project identification and costing lays squarely with the PMCs and the beneficiaries after identifying the project then the PMCs cost the project by preparing Bill of Quantities (BQ).

However, majority of the respondents asserted to little extent by 189 (63.2%) responses that a baseline survey was carried out to verify project assumptions and obtain information on the knowledge, attitudes and practices related to WRUA water projects. This may be a result of project team did not have materials to draw from as most of them had not completed surveys at the beginning of water projects.

#### **4.4.2 Extent of communication process of Water projects on sustainability in WRUA in Bungoma County**

The respondents were asked to state the extent of communication process and how it determines sustainability of WRUA in Bungoma County and the findings shows that 140 (46.8%) of the respondents agreed to great extent that WRUA had clear communication process of water projects, 100 (33.4%) to some extent, and 40 (13.4%) to little extent while only 19 (6.4%) of WRUA indicated virtually nothing to the statement. Concerning communication using extension agents, 56 (18.7%) of the respondents asserted to great extent that extension agents clearly disseminate the information on water projects, 182 (60.7%) to some extent, 49 (16.4%) little extent while 12 (4.2%) said virtually nothing. This is fair representation as communication is concerned. Table 4.8 illustrates the study findings.

**Table 4.8 Extent of communication process of Water Projects on sustainability in WRUA**

Communication process of water projects	GE		SE		LE		VN		TOTAL	
	F	%	F	%	F	%	F	%	F	%
WRUA have adequate communication channels	140	46.8	100	33.4	40	13.4	19	6.4	299	100
Extension agents clearly disseminate the information	56	18.7	182	60.7	49	16.4	12	4.2	299	100

As indicated from Table 4.8, 140 (46.8%) of the respondents agreed to great extent that WRUA had clear communication process of water projects. In order to build on these successes, the corporate evaluation recommended that those IFAD-supported projects focusing on social mobilization and capacity-building of community-based institutions give special consideration to three specific issues. First, it called for improved identification and capacity assessment of institutions at the local level. Of particular relevance to sustainability, it noted that villages with strong traditional institutions are typically better able to internalize new approaches and technologies. 182 (60.7%) of the respondents agreed to some extent that extension agents clearly disseminate the information on water projects. Communication network is needed to ensure that beneficiaries are kept informed on matters affecting the project. Information includes such diverse messages such as changes in government policy, updating prices of material.

#### **4.4.3 Extent of operation and maintenance of Water Projects on sustainability in WRUA in Bungoma County**

The respondents were asked to state the extent of operation and maintenance and how it determines sustainability of WRUA in Bungoma County and the findings shows that 152 (50.8%) of the respondents agreed to great extent that WRUA had Operation and



Maintenance roles clearly defined and understood by all responsible parties of water projects, 97 (32.4%) to some extent, and 47 (15.7%) to little extent while only 3 (1.1%) of WRUA indicated virtually nothing to the statement. Concerning trained repair persons and supplies of spare parts easily available, 56 (18.7%) of the respondents asserted to great extent, 202 (67.6%) to some extent, 30 (10.0%) little extent while 11 (3.7%) said virtually nothing. Table 4.9 demonstrates the study findings.

**Table 4.9 Extent of operation and maintenance of Water Projects on sustainability in WRUA**

<b>Operation and maintenance of water projects</b>	<b>GE</b>		<b>SE</b>		<b>LE</b>		<b>VN</b>		<b>TOTAL</b>	
	<b>F</b>	<b>%</b>	<b>F</b>	<b>%</b>	<b>F</b>	<b>%</b>	<b>F</b>	<b>%</b>	<b>F</b>	<b>%</b>
O & M roles clearly defined	152	50.8	97	32.4	47	15.7	3	1.1	299	100
Trained repair persons easily available	56	18.7	202	67.6	30	10.0	11	3.7	299	100

As indicated from Table 4.9, 152 (50.8%) of the respondents agreed to great extent that WRUA had Operation and Maintenance roles clearly defined and understood by all responsible parties of water projects. 202 (67.6%) of the respondents agreed to some extent that WRUA trained repair persons and supplies of spare parts were easily available. The most obvious indicator of sustainability is the ongoing operation and maintenance of the system. Systems which are successfully operated and maintained are, infact, being sustained since all of the foregoing processes must be successfully in place for this to happen. Studies of the sector often list Operation and Maintenance as the second biggest problem area after inadequate resources.

#### **4.5 Institutional and management development on sustainability of donor funded Water Projects in WRUA in Bungoma County**

The second objective of the study was to determine how institutional development influence sustainability of the community based water projects. The WRUA committees were considered as institutions which are likely to have institutional challenges just like other institutions.

##### **4.5.1 Rating of trainers technical skills on sustainability of donor funded Water Projects in WRUA in Bungoma County**

The respondents were asked to rate the technical skills of the trainers to establish the quality of the trainings provided from the WRUA members and how it determines sustainability of WRUA in Bungoma County and the findings shows that 5.0% indicated poor technical skills of the trainers while a majority of 82.6% and 12.4% indicated fairly good skills and excellent skills respectively.

**Table 4.10 Rating of trainers technical skills on sustainability of donor funded Water Projects in WRUA**

<b>Trainers' skills</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Poor	15	5.0
Good	247	82.6
Excellent	37	12.4
<b>Total</b>	<b>299</b>	<b>100.0</b>

As portrayed from Table 4.10, the level of trainers' technical skills among committee members, a majority of the respondents, 247 (82.6%) indicated fairly good skills. Findings from key informants confirmed that the trainers were from the Ministry

of Water and Irrigation and were qualified Community Development Officers. This concurs with earlier findings by Espinosa, et al. (2007) opines that task familiarity is important in the community based projects and this is usually linked to performance which in turn is linked to sustainability. Good management goes beyond mere skills (Kirksch, 2000) to technical and expertise required to successfully implementing the project (Little, 1993). This study argues that institutional and management capacity is a recipe to effective project implementation as it encourages participation and involvement of the community in all the processes of project implementation, hence people feeling empowered. Empowered people have freedom of choice and action, which in turn enables them to better influence the course of their lives and the decisions which affect them.

#### **4.5.2 WRUA collaboration with other agencies on sustainability of Donor funded Water projects in WRUA in Bungoma County**

The respondents were asked to rate the WRUA collaboration with other agencies on sustainability of water projects in Bungoma County. On a scale of Great extent (GE), some extent (SE), little extent (LE) and virtually nothing (VN), the respondents were asked to state their opinion that best described their responses on WRUA collaboration with other agencies on sustainability of water projects and the findings shows that 112 (37.4%) of the respondents asserted to great extent, 78 (26.1%) to some extent, 63 (21.1%) little extent while 46 (15.4%) said virtually nothing. Table 4.11 shows the study findings.

**Table 4.11 WRUA collaboration with other agencies on sustainability of donor funded Water Projects**

<b>Level of collaboration</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Great extent	112	37.4
Some extent	78	26.1
Little extent	63	21.1
Virtually nothing	46	15.4
<b>Total</b>	<b>299</b>	<b>100.0</b>

From Table 4.11, 112 (37.4%) of the respondents asserted to great extent on the level of WRUA collaboration with other agencies on sustainability of water projects and projects that build links with different organizations are more likely to be sustainable. They support and learn from each other, and are able to exploit others' agendas, for example, for new funding opportunities. It has also been found to be essential for the long-term survival of community-based programs. These research findings are similar with other findings from many researchers including (Bamberger & Cheema, 1990; Lefebvre, 1990; Lerner, 1995) who found that creating conducive environment for collaboration contributes to a program's continuation and that these collaborations need to include all relevant community leaders and agencies and active community participation at all levels.

Programs and projects which integrate with and build on local management structures, have better prospects for promoting project sustainability (Mulwa, 2010). The capacity of local agencies to manage (or absorb) new structures, systems, ideas and funds is often not adequately assessed, and over-optimistic assumptions are often made.

### 4.5.3 WRUA and stakeholders commitment with community donor funded water projects on sustainability in WRUA in Bungoma County

The study sought to establish the influence of stakeholders' commitment on the sustainability of the water projects. The respondents were requested to indicate their level of agreement on the extent to which various stakeholders' commitment affected the sustainability of the water projects. The responses were rated on a five point Likert scale where: 1- Strongly Agree 2- Agree 3-Neutral 4- Disagree and 5-Strongly Disagree. Table 4.12 demonstrates the study findings.

**Table 4.12 WRUA and stakeholders commitment with community donor funded Water Projects on sustainability in WRUA**

WRUA and stakeholders commitment	SA		A		N		D		SD		TOTAL	
	F	%	F	%	F	%	F	%	F	%	F	%
Stakeholders commitment is satisfactory	116	38.8	99	33.1	12	4.0	33	11.0	39	13.1	299	100
WRUA involve more women in projects	56	18.7	152	50.8	7	2.3	45	15.1	39	13.1	299	100

From Table 4.13, research findings reported a significant degree of WRUA and stakeholders commitment in social mobilization and institutional capacity-building at the community level where 116 (38.8%) of the respondents strongly agreed. Programs and projects which integrate with and build on local management structures, have better prospects for promoting project sustainability and 152 (50.8%) of the respondents agreed have involved more women in water projects. These results concur with other findings from Mulwa, (2010); Bossert (1990) discusses the need for staff to be committed to project goals, and utilizing indigenous staff in community based projects. The lack of adequately trained personnel is a major detractor from sustaining community-based projects while providing adequate staff training for effective project delivery, supports project longevity (Bamberger & Cheema, 1990). Professionals can play a number of different roles in

projects, all of which require trust and good working relationships with local people and other professionals. In order to establish good rapport professionals need time, resources and authority to invest in a project.

Women participation in project activities; sub-projects and community institutions in 2008 were found to be low compared to their past activities (in 2000) and actual needs as well as the role performed by them in productive, and community management. However, no more activities were performed by women institutions during this period other than the previous women specific activities (sub-projects) funded by the women societies, utilizing the funds allocated for women. Moreover, women contribution in decision making process was also examined, but found to be negligible, due to men domination of the leading and decision making position in the community organizations. This study depicted that despite the withdrawal of the foreign assistance; the project existed and performed some activities including institutional, human, production, environmental capacity buildings and women participation in project activities.

#### **4.6 Financial Management and sustainability of donor funded Water projects in WRUA in Bungoma County**

In objective three, the study sought to establish the influence of financial management strategies on sustainability of community water projects. The indicators of the study variable included sources of funding for the water projects, level of community contributions towards operations and maintenances, functionality of the organization structure, rating for application of standard management tools, level of knowledge and skills of the project operators and frequency of project review meetings. The results of the opinions of consumers' respondents and committee members' respondents on the indicators are presented in Tables 4.13

##### **4.6.1 Level of funding and sustainability of donor funded water projects in WRUA in Bungoma County**

The sought to identify the various sources of funding for the water projects and how sustainability of water projects in WRUA Bungoma County is maintained and the

findings showed that 43 (14.4%) of the projects funding comes from community members and 256 (85.6%) funding resources was hugely dependent on government or donor agencies. They were also asked to the state whether the responsible parties had resources to cover recurring operation and maintenance costs and 41 (13.7%) asserted highly, 89 (29.8%) said it was average while 169 (56.5%) of the respondents agreed to be low. Responses are shown in table 4.13.

**Table 4.13: Level of funding and sustainability of donor funded Water Projects in WRUA**

Description			F	%
<b>Source of funding</b>	WRUA	Community	43	14.4
	WRUA	Govt/donor	256	85.6
<b>Level of O&amp;M costs</b>	WRUA	High	41	13.7
		Average	89	29.8
		Low	169	56.5

Table 4.13 illustrates that with regards to sources of funding of the water projects, 256 (85.6%) was the main source of funding water projects from the Government or Donors. The two WRMA Officers interviewed indicated that all community water projects were partly or fully funded by the government or donors. It was indicated by majority of the respondents that the level of recurring operation and maintenance costs was low by 169 (56.5%) responses. This indicates failure of most WRUA in Bungoma County on sustainability of water projects. One of the key rudiments in project sustainability is the availability resources that are required for community-based projects. This means, selecting resources that should be available for the projected future, minimizing the possibility of project failure once it is up and running, due to inadequate essential materials. In many cases, this will mean identifying secondary sources of those materials that can be pressed into action. These findings are similar with other findings

by Bamberger & Cheema, (1990) who asserts that inadequate funding detracts from a project's ability to be sustained. However, there are many ways that funding can be linked to a project's ability to be sustained. Holder and Moore (2000) support developing local resources for enhanced sustainability emphasizing the importance of adequate local capacities to generate funds after external funding ceases. The theory of resilience explains that a system has the ability to absorb disturbance and still retain its basic function and structure, Holling (1973). The proper course of action is one that maximizes utility thus maximizing benefits and reducing suffering/negatives.

#### **4.6.2 Level of community contributions towards operations and maintenances of Donor funded Water projects in WRUA in Bungoma County**

The study also sought to establish the level of community contribution towards the operations and maintenances as a risk management of the water projects on sustainability that exist within the communities. The level of community contributions towards operations and maintenances of the water projects, 194 (64.9%) committee members indicated that they made contributions towards operations and maintenances while 105 (35.1%) indicated that they were not committed to making regular contributions towards operations and maintenances. The responses are shown in table 4.14

**Table 4.14 Level of community contributions towards operations and maintenances of donor funded Water Projects in WRUA**

<b>Responses</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Yes	194	64.9
No	105	35.1
<b>Total</b>	<b>299</b>	<b>100.0</b>



From Table 4.14, 194 (64.9%) of the respondents cited the level of community contributions towards operations and maintenances of the water projects and they were not committed to making regular contributions towards operations and maintenances. Committee members' respondents of the water projects indicated that community members made regular contributions towards operations and maintenances. This results are in agreement with other findings from Queensland Government, (2011) that assessing financial sustainability depends on the capacity to meet financial commitments in the short, medium and long-run; manage unforeseen financial shocks, any adverse changes and general economic conditions; and encounter arising risks. If funds are sufficient during the financing period, but insufficient afterwards to maintain the benefits for the rest of project's planned life, then the project's financial sustainability is at risk (Ministry of Finance of the Czech Republic, 2011). Financial sustainability of a project can be measured if we analyze the 'with donor funding' situation vis-à-vis the 'after donor funding ceases to flow' situation. Unless such factors as risk management; existence of clear definitions of roles and responsibilities for avoidance of institutional conflicts (ADB, 1993) are taken into account, economic benefits will not be sustained (Queensland Government, 2011).

#### **4.6.3 Clarity of project goals and objectives on income from the donor funded Water Projects in WRUA in Bungoma County**

The study found it important to assess the how the WRUA perceived the goals and objectives on income from the projects they were running and the findings showed that 239 (79.9%) of community respondents indicated that their project goals and objectives on income from the projects were clear while 60 (20.1%) indicated they were not clear as shown in table 4.15.

**Table 4.15: Clarity of project goals and objectives on income from the donor funded Water Projects in WRUA**

<b>Responses</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Clarity	239	79.9
No clarity	60	20.1
<b>Total</b>	<b>299</b>	<b>100.0</b>

As portrayed from Table 4.15 as regards to clarity of project goals and objectives on income from the projects, 239 (79.9%) community respondents indicated that their project goals and objectives were clear. This indicates that most of the water project's WRUA's were guided by project goals and activities in their plans, activities and developments.

#### **4.7 Community Participation on sustainability of donor funded Water projects in WRUA in Bungoma County**

The study sought to establish the influence of community participation on sustainability of community water projects. The indicators of the study variables included Community involvement in decision making, project ownership, and monitoring and evaluation. The results of the opinions of respondents on the study indicators are presented in Tables 4.16 to 4.18.

##### **4.7.1 Influence of community involvement in managements' decision making on sustainability of donor funded Water projects in WRUA in Bungoma County**

Finally, the study found it important to establish the level of community involvement in managements' decision making on sustainability of donor funded Water projects of WRUA in Bungoma County and the findings revealed that 106 (35.5%) indicated an influence of great extent in decision making while 169 (56.5%) indicated an influence of some extent and only 24 (8%) indicated an influence of little extent. In responding to the level of women representation in water management committees

among the consumers' respondents, only 56 (18.7%) indicated poor women representation level, while 194 (64.9%) indicated a fair representation level and 49 (16.4%) indicated a good representation level. One of the County Government Water Officer's interviewed indicated that the treasurer's position in the executive committee positions' was a special reserve for women members. This shows that the community members were gender sensitive and honored the gender equity rule of 30% gender representation in leadership positions. The responses were indicated in the table 4.16.

**Table 4.16: Influence of community involvement in managements' decision making on sustainability of donor funded Water projects in WRUA**

<b>Involvement</b>			<b>F</b>	<b>%</b>
<b>Extent of WRUA involvement</b>	WRUA	Great extent	106	35.5
		Some extent	169	56.5
		Little extent	24	8.0
<b>Women representation</b>	WRUA	Excellent	49	16.4
		Good	194	64.9
		Poor	56	18.7

From Table 4.16, majority of the respondents cited to some extent by 169 (56.5%) that the community was involved in the management's decision in implementation and operations issues of the water projects. Women representation was also a factor of consideration because traditionally seeking for water among the communities is a burden bestowed mainly to the women and 194 (64.9%) of the respondents asserted women representation to be good. Contributions either at the implementation level or towards operations and maintenances increases a sense of ownership of the assets and

consequently elevates the desire to making informed choice towards long term sustainability. Community awareness and involvement in project planning and implementation are important elements in the sustainability of a project. The study findings are greatly supported by many scholars Bamberger & Cheema, (1990) who suggest encouraging active community participation at all levels of project design and implementation for sustaining those programs.

Locally initiated programs may be more sustainable (LaFond, 1995), so it might be necessary to develop some level of local institutional building (Bossert, 1990). Involving all relevant community leaders and agencies facilitates sustaining programs (Goodman & Steckler, 1989; Shediak-Rizkallah & Bone, 1998). The level of community support determines whether a project becomes established, how quickly and successfully it consolidates, and how it responds and adapts to meet changing needs. It is therefore important that involving local communities" starts at the identification phase, when decisions are being made about what type of project is required to address their priority need. Sustainability cannot be achieved without their involvement and support and thus, stakeholder analysis is paramount to be able to identify the key actors who should be involved in every stage of project management cycle. Stakeholders, both men and women, should actively participate, hence having the opportunity to influence the direction and detail of design and implementation. Allocating adequate time and resources for participatory analysis and responding to demand-led approaches are important ways to improve participation.

#### **4.7.2 Perception of community attitudes on ownership of Donor funded Water projects in WRUA in Bungoma County**

The study found it in order to establish perception of community attitudes on ownership of Water projects in Bungoma County and the study findings showed that only 51 (17.1%) of the respondents cited the perception to good, while 183 (61.2%) indicated good perception and 65 (21.7 %) indicated poor perception on ownership of water projects by the community members. Table 4.17 shows the study findings.

**Table 4.17 Perception of community attitudes on ownership of Water projects in WRUA**

<b>Community attitudes</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Good	51	17.1
Fair	183	61.2
Poor	65	21.7
<b>Total</b>	<b>299</b>	<b>100.0</b>

As indicated from Table 4.17, 183 (61.2%) of the respondents indicated fair perception of the community attitudes on ownership of water projects in Bungoma County. They were also actively involved in deciding on the most appropriate technology in project design stage and participated in data collection of the projects as well. Members were also actively involved in implementation activities of the project. It was further indicated that community members participated in various ways during implementation of the water projects with some contributing cash towards financing implementation while others making contributions of construction materials such as sand, ballast, building stones and timber. They also contributed to providing unskilled and skilled labor during construction. This concurs with other findings from (ECCO, 2010) where project ownership is exclusive; those in control are less likely to respond positively to the needs and ideas of the wider group. This can have a long-term impact on project sustainability. However, income generating activities need individual ownership. For example, the livelihood project for reformed street youth by Ex-street children organization (ECCO) in Kenya. From the descriptive analysis done, it was found that income generating activities cannot sustain itself because of the communal ownership; therefore, it is recommended that, the focus should be on individual ownership if viability and sustainability is to be achieved in community development projects. Research shows that donor-led and top-down projects generally fail to bring sustainable benefits because they do not lead to stakeholder ownership and commitment.

### 4.7.3 Level of community involvement in Monitoring and Evaluation of water projects of WRUA in Bungoma County

On a scale of Great extent (GE), some extent (SE), little extent (LE) and virtually nothing (VN), the respondents were asked to state their opinion that best described their level of community involvement in Monitoring and Evaluation of water projects of WRUA in Bungoma County was another question of concern for the study findings shows that 63 (21.1%) of the respondents agreed to great extent that community involvement in Monitoring and Evaluation of water projects, 100 (33.3%) to some extent, and 93 (31.1%) to little extent while only 43 (14.4%) of WRUA indicated virtually nothing to the statement. The results are indicated in table 4.18.

**Table 4.18 Level of community involvement in Monitoring and Evaluation of water projects of WRUA**

<b>Level of Monitoring &amp; Evaluation</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Great extent	63	21.1
Some extent	100	33.4
Little extent	93	31.1
Virtually nothing	43	14.4
<b>Total</b>	<b>299</b>	<b>100.0</b>

Majority of the respondents from Table 4.18 cited to some extent by 100 (33.4%) to have involved community in Monitoring and Evaluation of water projects of WRUA in Bungoma County. This is fair representation of the community members in community in Monitoring and Evaluation of water projects. Monitoring enhances project management decision making during the implementation thereby increasing the chances of good project performance. This is highly supported by findings from

DAC (2001) agree but add that project monitoring and evaluation involves measuring, assessing recording and analyzing the project information on a continuous basis and communication the same to those concerned. Crawford and Bryce (2003) argue that monitoring is an ongoing process of data capture and analysis's for primarily project control with an internally driven emphasis on efficiency of project.

Monitoring tracks and documents resources use throughout the implementation of the project, Passia (2004): Uitto, (2004). Evaluation assesses project effectiveness in achieving its goals in determining the relevance and sustainability of an ongoing project, McCoy, (2005). It compares the project impact with what was set to be achieved in the project plan, Qhapiro (2000).

## **CHAPTER FIVE**

### **SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATION**

#### **5.1 Introduction**

This chapter covers summary of the findings, discussion of results and conclusions drawn from the study as well as recommendations based on the study findings and suggestions for further studies.

#### **5.2 Summary of the findings**

This section provides a summary of the finding based on the objectives of the study as they are presented in the previous chapter.

##### **5.2.1 Capacity Development process on sustainability of donor funded water projects in WRUA in Bungoma County**

The respondents were asked to state the extent of design process and how it determines sustainability of WRUA in Bungoma County and the findings shows that 8.4% of the respondents agreed to great extent that WRUA had clear design process spelled out sustainability as objective to be attained, 26.8% to some extent, and 58.2% to little extent while only 6.6% of WRUA indicated virtually nothing to the statement. They also indicated that the communities had substantive input on problem identification and project design where 52.2% of the respondents asserted to great extent, 27.4% to some extent, and 20.1% to little extent while 0.3% of WRUA indicated virtually nothing to the statement. Concerning whether a baseline survey was carried out to verify project assumptions and obtain information on the knowledge, attitudes and practices related to WRUA water projects and 10.0% of the respondents asserted to great extent, 18.7% to some extent, and 63.2% to little extent while 8.1% of WRUA indicated virtually nothing to the statement.

The respondents were asked to state the extent of communication process and how it determines sustainability of WRUA in Bungoma County and the findings shows that 46.8% of the respondents agreed to great extent that WRUA had clear communication process of water projects, 33.4% to some extent, and 13.4% to little



extent while only 6.4% of WRUA indicated virtually nothing to the statement. Concerning communication using extension agents, 18.7% of the respondents asserted to great extent that extension agents clearly disseminate the information on water projects, 60.7% to some extent, 16.4% little extent while 4.2% said virtually nothing. This is fair representation as communication is concerned.

The respondents were asked to state the extent of operation and maintenance and how it determines sustainability of WRUA in Bungoma County and the findings shows that 50.8% of the respondents agreed to great extent that WRUA had O & M roles clearly defined and understood by all responsible parties of water projects, 32.4% to some extent, and 15.7% to little extent while only 1.1% of WRUA indicated virtually nothing to the statement. Concerning trained repair persons and supplies of spare parts easily available, 18.7% of the respondents asserted to great extent, 67.6% to some extent, and 10.0% little extent while 3.7% said virtually nothing.

### **5.2.2 Institutional and management development on sustainability of donor funded Water projects in WRUA in Bungoma County**

The respondents were asked to rate the technical skills of the trainers to establish the quality of the trainings provided from the WRUA members and how it determines sustainability of WRUA in Bungoma County and the findings shows that 5.0% indicated poor technical skills of the trainers while a majority of 82.6% and 12.4% indicated fairly good skills and excellent skills respectively.

WRUA collaboration with other agencies on sustainability of water projects and the findings shows that 37.4% of the respondents asserted to great extent, 26.1% to some extent, and 21.1% little extent while 15.4% said virtually nothing.

Research findings reported a significant degree of WRUA and stakeholders commitment in social mobilization and institutional capacity-building at the community level where 38.8% of the respondents strongly agreed. Programs and projects which integrate with and build on local management structures, have better prospects for

promoting project sustainability and 50.8% of the respondents agreed have involved more women in water projects.

### **5.2.3 Financial Management and sustainability of donor funded Water projects in WRUA in Bungoma County**

The sought to identify the various sources of funding for the water projects and how sustainability of water projects in WRUA Bungoma County is maintained and the findings showed that 14.4% of the projects funding comes from community members and 85.6% funding resources was hugely dependent on government or donor agencies. They were also asked to the state whether the responsible parties had resources to cover recurring operation and maintenance costs and 13.7% asserted highly, 29.8% said it was average while 56.5% of the respondents agreed to be low.

The study also sought to establish the level of community contribution towards the operations and maintenances as a risk management of the water projects on sustainability that exist within the communities. The level of community contributions towards operations and maintenances of the water projects, 64.9% committee members indicated that they made contributions towards operations and maintenances while 35.1% indicated that they were not committed to making regular contributions towards operations and maintenances.

The study found it important to assess the how the WRUA perceived the goals and objectives on income from the projects they were running and the findings showed that 79.9% of community respondents indicated that their project goals and objectives on income from the projects were clear while 20.1% indicated they were not clear.

### **5.2.4 Community Participation on sustainability of donor funded Water projects in WRUA in Bungoma County**

Finally, the study found it important to establish the level of community involvement in managements' decision making on sustainability of donor funded Water projects of WRUA in Bungoma County and the findings revealed that 35.5% indicated an

influence of great extent in decision making while 56.5% indicated an influence of some extent and only 8% indicated an influence of little extent. In responding to the level of women representation in water management committees among the consumers' respondents, only 18.7% indicated poor women representation level, while 64.9% indicated a fair representation level and 16.4% indicated a good representation level. One of the County Government Water Officer's interviewed indicated that the treasurer's position in the executive committee positions' was a special reserve for women members. This shows that the community members were gender sensitive and honored the gender equity rule of 30% gender representation in leadership positions.

The study found it in order to establish perception of community attitudes on ownership of Water projects in Bungoma County and the study findings showed that only 17.1% of the respondents cited the perception to good, while 61.2% indicated good perception and 21.7 % indicated poor perception on ownership of water projects by the community members.

The respondents were asked to state their opinion that best described their level of community involvement in Monitoring and Evaluation of water projects of WRUA in Bungoma County was another question of concern for the study findings shows that 21.1% of the respondents agreed to great extent that community involvement in Monitoring and Evaluation of water projects, 33.3% to some extent, and 31.1% to little extent while only 14.4% of WRUA indicated virtually nothing to the statement.

## **5.3 Conclusions**

The following conclusions were made from the study as per the objectives of the study;

### **5.3.1 Capacity Development process on sustainability of donor funded water projects in WRUA in Bungoma County**

WRUA had clear design process which spelled out sustainability as objective to be attained by 58.2% of the respondents agreed to little extent. These results show that institutions should utilize various development processes to influence, educate and modify the behavior and attitudes of a target population. Such processes are used by all

sectors. 46.8% of the respondents agreed to great extent that WRUA had clear communication process of water projects. On the other hand, 60.7% of the respondents agreed to some extent that extension agents clearly disseminate the information on water projects. Communication network is needed to ensure that beneficiaries are kept informed on matters affecting the project. Information includes such diverse messages such as changes in government policy, updating prices of material.

Half, 50.8% of the respondents agreed to great extent that WRUA had Operation and Maintenance roles clearly defined and understood by all responsible parties of water projects and 67.6% of the respondents agreed to some extent that WRUA trained repair persons and supplies of spare parts were easily available. Systems which are successfully operated and maintained are, in fact, being sustained since all of the foregoing processes must be successfully in place for this to happen. Studies of the sector often list Operation and Maintenance as the second biggest problem area after inadequate resources.

### **5.3.2 Institutional and management development on sustainability of donor funded Water projects in WRUA in Bungoma County**

The level of trainers' technical skills among committee members, a majority of the respondents, 82.6% indicated fairly good skills. Findings from key informants confirmed that the trainers were from the Ministry of Water and Irrigation and were qualified Community Development Officers. 37.4% of the respondents asserted to great extent on the level of WRUA collaboration with other agencies on sustainability of water projects and projects that build links with different organizations are more likely to be sustainable.

The WRUA in Bungoma should support and learn from each other, and are able to exploit others' agendas, for example, for new funding opportunities. Programs and projects should integrate with and build on local management structures, for better prospects for promoting project sustainability. Research findings reported a significant degree of WRUA and stakeholders commitment in social mobilization and institutional capacity-building at the community level where 38.8% of the respondents strongly agreed. Programs and projects which integrate with and build on local management

structures, have better prospects for promoting project sustainability and 50.8% of the respondents agreed have involved more women in water projects. Professionals can play a number of different roles in projects, all of which require trust and good working relationships with local people and other professionals. In order to establish good rapport professionals need time, resources and authority to invest in a project. Women participation in project activities; sub-projects and community institutions

It was concluded from the study findings that water management institutions have challenges with water resources conservation practices which have a role to play in sustainability of water projects. The study established that the level of water conservation and the types of water conservation interventions have a direct influence on reliability and adequacy of the water sources. The study also found out that community organizations hardly recognized the rationale of conserving the limited water resources and that information on the various feasible water conservation interventions was lacking among the community members.

### **5.3.3 Financial Management and sustainability of donor funded Water projects in WRUA in Bungoma County**

It is concluded that project financial management strategies are important towards enhancing accountability and transparency of operations and management issues of the water projects. Effective project management strategies enhance efficient project management during and after implementation thereby countering setbacks such as poor management of finances, corruption, poor definition of organization structures and inadequate strategic plans. It is concluded that sources of funding implementation and maintenances of the water projects greatly determined a sense of ownership among community members management decision making during the implementation thereby increasing the chances of good project performance.

### **5.3.4 Community Participation on sustainability of donor funded Water projects in WRUA in Bungoma County**

Majority of the respondents cited to some extent by 56.5% that the community was involved in the management's decision in implementation and operations issues of the water projects. Women representation was also a factor of consideration because traditionally seeking for water among the communities is a burden bestowed mainly to the women and 64.9% of the respondents asserted women representation to be good. Contributions either at the implementation level or towards operations and maintenances increases a sense of ownership of the assets and consequently elevates the desire to making informed choice towards long term sustainability.

61.2% of the respondents indicated fair perception of the community attitudes on ownership of water projects in Bungoma County. They were also actively involved in deciding on the most appropriate technology in project design stage and participated in data collection of the projects as well. Community participation is also seen as a fundamental right; that beneficiaries should have a say about interventions that affect their lives. Participation is a key instrument in creating self-reliant and empowered communities, stimulating village-level mechanisms for collective action and decision-making. It is also believed to be instrumental in addressing marginalization and inequity, through elucidating the desires, priorities and perspectives of different groups within a project area. It was concluded that community members' participation in conception, design and implementation of the water projects greatly influenced sustainability.

Majority of the respondents cited to some extent by 33.4% to have involved community in Monitoring and Evaluation of water projects of WRUA in Bungoma County. This is low representation of the community members in community in Monitoring and Evaluation of water projects. Monitoring enhances project

### **5.4 Recommendations from the study**

The following recommendations were made in order to enhance sustainability of community water projects:

1. WRUA had little extent clear design process which spelled out sustainability as objective to be attained. These results show that institutions should utilize various development processes to influence, educate and modify the behavior and attitudes of a target population. There was little indication of a baseline survey that was carried out.
2. It is recommended that water management committees, project implementers and water operators should be trained adequately on financial management, procurement, operations, tariff setting, record keeping and conflict resolution to enhance their skills in the management of the water facilities.
3. Effective project financial management strategies should be adopted to enhance accountability and transparency among community members on management issues and steer away conflict. To achieve this, committee members need to develop local constitution for each of the water project organization to guide and direct management of their finances, election of committee members and de fine a functional organization structure.
4. Increased community involvement in the management's decision making on implementation and operations issues of the water projects, and on increased community involvement in monitoring and evaluation. Women representation was also a factor of consideration because traditionally seeking for water among the communities is a burden bestowed mainly to the women

### **5.5 Suggested areas for further study**

1. Role of women in enhancing the sustainability of community based water projects in Kenya.
2. Alternative and sustainable funding sources for community based water projects in Kenya.
3. Effect of Community involvement in Monitoring and Evaluation of water projects in Kenya.

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## **APPENDIX I: LETTER OF TRANSMITTAL**

CHRISTINE APELI  
UNIVERSITY OF NAIROBI  
P.O BOX 30197  
NAIROBI

Dear Sir/Madam,

**RE: DETERMINANTS OF SUSTAINABILITY OF DONOR FUNDED WATER PROJECTS. A CASE OF WATER RESOURCES USERS ASSOCIATIONS IN BUNGOMA COUNTY, KENYA**

My name is Christine Apeli and I am a Master's student at University of Nairobi's Extra Mural studies, Kenya, pursuing Masters in Arts Project Planning and Management. The Research title '*Determinants of Sustainability of Donor funded Water Projects in Bungoma County Kenya*'; *focusing on Water Resources Users Associations (WRUAs)*. I am writing to invite you to participate in research in the form of a questionnaire. Questions on this questionnaire are only for academic purposes. The one asking you questions is a Research Assistant. The questions herewith can be responded by WRUA officials or members.

Thanking you in advance for your cooperation.

Christine Apeli

**APPENDIX II**

**QUESTIONNAIRE FOR WRUA COMMITTEE MEMBERS**

**Section A.**

**SECTION A: Demographic Information of the respondents**

1. Name of institution .....
2. Designation..... Gender.....
3. Please indicate the highest level of your academic qualification.  
 Primary [ ] Secondary [ ] Diploma [ ] Undergraduate [ ]  
 Postgraduate [ ] Other (Specify).....
4. Indicate length of stay as a member/official at this workplace ..... Years  
 < 1 year [ ] Between 1-3 years [ ] Between 3-5 years [ ] >5 years [ ]
5. Please indicate your age bracket  
 <20 Yrs [ ] 20-29 Yrs [ ] 30-39 Yrs [ ] 40-49 Yrs [ ] > 50 Yrs [ ]
6. Respondents position  
  
 Executive Committee Member [ ] Monitoring official [ ] Finance [ ]  
  
 Procurement [ ] Member [ ]

**SECTION B: How does Capacity Development process determines sustainability of donor funded water projects in WRUA in Bungoma County**

This section seeks to explore the Capacity Development process determines sustainability of donor funded water projects in WRUA in Bungoma County. Please put a tick in the appropriate cell that most adequately reflects your views in relation to the given statement

**Kindly respond to the following statements. Each statement is rated on a 4 point scale as shown below. GE:** To a great extent, **SE:** To some extent, **L:** little, **VN:** Virtually nothing

	<b>Capacity Development process determines sustainability of donor funded water projects in WRUA in Bungoma County</b>	<b>To a great extent</b>	<b>To some extent</b>	<b>little</b>	<b>Virtually nothing</b>
7.	WRUA has clear design process spelled out sustainability as objective to be attained				

8.	Communities had substantive input on problem identification and project design				
9.	Baseline survey was carried out to verify project assumptions and obtain information on the knowledge, attitudes and practices related to WRUA water projects				
10.	WRUA have adequate communication channels				
11.	Effective resource allocation is based on well defined school management principles and strategic plans				
12.	Extension agents clearly disseminate the information on water projects				
13.	WRUA had Operation and Maintenance roles clearly defined and understood by all responsible parties of water projects				
14.	WRUA trained repair persons and supplies of spare parts were easily available				

15. Have you been trained on operations and maintenance or management of water systems?

YES [ ] NO [ ]

16. If yes how many trainings have you received on operation and maintenance of water systems?

1 – 5 [ ] 6- 10 [ ] above 10 [ ]

17. Were the trainings facilitated by trainers with technical background in water resources?

YES [ ] NO [ ]

18. To what extent has the trainings been useful in operations and maintenance of the water systems?

Very useful ( ) moderately useful ( ) Not at all useful ( )

19. Are the trained members of your water committee involved in the operation and maintenance of the water projects?

YES [ ] NO [ ]



20. If NO why?

Lack of the technical skills [ ]

Donors responsible for maintenance [ ]

Government responsible for maintenance [ ]

Individual philanthropists responsible [ ]

Any other (specify).....

**SECTION C: How does Institutional and management development determines sustainability of donor funded water projects in WRUA in Bungoma County**

21. How do you rate the technical skills of the trainers on the trainings provided from the WRUA members?

Poor [ ] Good [ ] Excellent [ ]

22. On a scale of Great extent (GE), some extent (SE), little extent (LE) and virtually nothing (VN), how can you rate the extent of WRUA collaboration with other agencies on sustainability of water projects?

Great extent (GE), [ ] Some extent (SE) [ ]

Little extent (LE) [ ] Virtually nothing (VN) [ ]

This section seeks to find out the extent to which Institutional and management development determines sustainability of donor funded water projects in WRUA in Bungoma County. Kindly respond to the following statements. Each statement is rated on a 5 point scale as shown below. **SA:** Strongly Agree, **A:** Agree N: Neutral, **D:** Disagree, **SD:** Strongly Disagree

NO	Institutional and management development determines sustainability of donor funded water projects in WRUA in Bungoma County	SA	A	N	D	SD
23.	Stakeholders commitment is satisfactory					
24.	WRUA involve more women in projects					

**SECTION D: How does Financial Management and sustainability of donor funded Water projects of WRUA in Bungoma County**

This section seeks to find out the extent to which Financial Management and sustainability determines sustainability of donor funded water projects in WRUA in Bungoma County. Kindly respond to the following statements.

25. Kindly indicate and identify the various sources of funding for the water projects and how sustainability of water projects in WRUA Bungoma County is maintained concerning level of Operation and Maintenance costs.

**Description**

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<b>Source of funding</b>	WRUA	Community	[ ]
		Govt/donor	[ ]
<b>Level of Operation and Maintenance costs</b>		High	[ ]
	WRUA	Average	[ ]
		Low	[ ]

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26. In case of breakdown who always meet the cost of operations and maintenances?

Government/Donor [ ] Community contribution [ ]

27. How clear are the project goals and objectives from the income generated from the projects? Clear [ ] Not clear [ ]

28. Are the functions, responsibilities and lines of authority of water project management committees properly defined?      Yes [  ]      No [  ]
29. How do you rate the knowledge and skills of the project manager and implementation team of the water project? Adequate [  ] Not adequate [  ]
30. How do you rate the use of standard financial management tools and techniques such as work plans and monitoring and evaluation plans in the management of your water project? Poor [  ] Good [  ] Excellent [  ]
31. Does your Community Based organization hold progress review meetings of the water project?      Yes [  ]      No [  ]
32. If yes above, how often are the progress review meetings?
- Monthly      [  ]      Quarterly      [  ]      Yearly      [  ]

**SECTION E: How does Community Participation enhanced on sustainability of donor funded Water projects of WRUA in Bungoma County**

This section seeks to find out the extent to which Financial Management and sustainability determines sustainability of donor funded water projects in WRUA in Bungoma County. Kindly respond to the following statements.

33. Kindly indicate the influence of community involvement in managements' decision making on sustainability of donor funded Water projects for the water projects in WRUA Bungoma County.

Involvement		Rating
Extent of WRUA involvement in managements' decision making		Great extent [ ]
		Some extent [ ]
		Little extent [ ]
Women representation managements' decision making	WRUA	Excellent [ ]
		Good [ ]
		Poor [ ]

34. How do you rate the perception of community attitudes on ownership of Water projects in Bungoma County?

Poor [ ] Good [ ] Excellent [ ]

35. Do community members participate in operations and maintenance activities of the project? Yes [ ] No [ ]

36. On a scale of Great extent (GE), some extent (SE), little extent (LE) and virtually nothing (VN), how best can describe the level of community involvement in Monitoring and Evaluation of water projects of WRUA in Bungoma County

Great extent (GE), [ ] Some extent (SE) [ ]

Little extent (LE) [ ] Virtually nothing (VN) [ ]

37. Do you have a long-term vision and goals for the WRUA?

a) Yes [ ]

b) No [ ]

38. Do you have strategies to obtain additional funding and support for the project beyond the time of the original grant?

Yes      [ ]      No      [ ]

**Section F: Recommendations**

39. In your own opinion what recommendations would you propose in order to have reliable and functional water projects?

.....

.....

.....

**Thank you**

## **APPENDIX III**

### **INTERVIEW GUIDE FOR WATER OFFICERS**

#### **A: Respondents Details**

1. Position of the respondent.....

#### **B: Water Resources Conservation practices**

1. In your own assessment, what is the main source of water for community water projects?
2. In your own opinion are the water sources adequate to sustain the beneficiaries throughout the year?
3. What strategies are in place to conserving the water resources?
4. In your own opinion, what measures and strategies can the stakeholders implement to ensure conservation of the present water resources?

#### **C. Project Management Strategies**

5. In your own assessment, do community water projects have clear goals and objectives?
6. In your own observation are the functions, responsibilities and lines of authority of the project management and water committees properly defined?
7. In your own opinion does the project operator has the necessary knowledge and skills required for successful implementation of water projects?
8. Do community members use standard management tools and techniques such as work plans and monitoring and evaluation plans in managing the project?
9. In your own assessment how often do water committee members hold project meetings to report implementation, operation and maintenances of the water project

**D. Community Participation**

- 10. To what extent do community members participate in the conception and design of the water projects?
- 11. How do community members participate in the implementation of the water projects?
- 12. In your opinion, do you feel that your contributions influenced decisions made during conception, design and implementation of water projects?
- 13. Do community members make contributions in kind or cash for implementation and maintenance of water projects?
- 14. In your own assessment of how is women representation in the membership of community structures for management of water projects?

**E. Community Education and trainings**

- 15. Have water management committee members been trained on operation and maintenance and management of water systems?
- 16. In your opinion, were the trainings carried out relevant towards enhancing the capacity of the community members to operate and maintain the water systems?
- 17. Who facilitated the training sessions and what were their qualifications?

**F. Recommendations**

What are your recommendations in improving sustainability of water projects?

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

**Thank you**

## APPENDIX IV: LETTER OF AUTHORIZATION



UNIVERSITY OF NAIROBI  
COLLEGE OF EDUCATION AND EXTERNAL STUDIES  
SCHOOL OF CONTINUING AND DISTANCE EDUCATION  
DEPARTMENT OF EXTRA-MURAL STUDIES  
KAKAMEGA & WESTERN KENYA AREA

Your Ref:  
Our Ref: Uon/Cees/Kak/1/47/(141)  
Telephone: Kakamega 056-31038

P.O. Box 422  
KAKAMEGA  
KENYA

4th May, 2015

**TO WHOM IT MAY CONCERN**

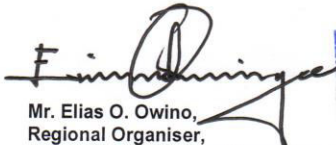
**REF: CHRISTINE WESONGA APELI – L50/70164/2013**

This is to confirm that the above named person is a student at the University of Nairobi, College of Education and External Studies, School of Continuing and Distance Education, Department of Extra-Mural Studies, Kakamega Extra-Mural Centre taking a Course in Masters of Arts (Project Planning and Management). She has completed her course work for Semester 1, 2 and 3 and she is working on her Project Paper.

She is undertaking a Research Project entitled, "DETERMINANTS OF SUSTAINABILITY OF DONOR FUNDED WATER PROJECTS. A CASE OF WATER RESOURCES USERS ASSOCIATIONS IN BUNGOMA COUNTY, KENYA

Any assistance accorded to her will be highly appreciated.

Yours faithfully,

  
Mr. Elias O. Owino,  
Regional Organiser,  
Kakamega & Western Kenya Area.





