INFLUENCE OF MONITORING AND EVALUATION ON THE PERFORMANCE OF WATER PROJECTS IN KENYA: A CASE OF MWALA WATER PROJECT, MACHAKOS COUNTY

By

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DECLARATION

I the undersigned declare that the project is my original work, any material derived from any other source have been duly acknowledged and it has not been submitted to any other University for academic credit.

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This research report has been submitted with my approval as the University Supervisor.

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DEDICATION

I dedicate this research to my wife Cyrose and my sons; David, Nathan and Gabriel. Their support and encouragement enabled me to complete this research report. I also dedicate this research to my parents who laid the ground work for my academic life.

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ABBREVIATIONS AND ACRONYMS

ADP	Area Development Programme
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
GOK	Government Of Kenya
HH	Household
ICLEI	International Council for Local Environment Initiatives
IFRC	International Federation of Red Cross and Red Crescent Societies
IGA	Income Generating Activities
KARI	Kenya Agricultural Research Institute
KII	Key Informant Interview
LPHI	Louisiana Public Health Institute
MCG	Machakos County Government
MoW	Ministry of Water
M & E	Monitoring and Evaluation
MoA	Ministry of Agriculture
MWI	Ministry of Water and Irrigation
MSC	Mwala Sub-County
NACOSTI	National Commission of Science, Technology and Innovation
NEMA	National Environment Management Authority
PMI	Project Management Institute
TOC	Theory of Change
UN	United Nations
UNDG	United Nation Development Group
UNICEF	United Nations Children's Fund
UNEP	United Nations Environmental Programme
WB	The World Bank
WHO	World Health Organization
WUA	Water Users Association(s)
WV	World Vision

ABSTRACT

Globally, institutions, governments, international and local development agencies have embraced monitoring and evaluation as a core component in project management. Monitoring and evaluation as a field is currently taking shape in governments around the world for the purpose of accountability and improved governance for economic development. The objective of this study was to find out the influence of monitoring and evaluation on the performance of water projects in Kenya; a case of Mwala water project in Machakos County. The study was based on a descriptive design and the sampling was both purposive and simple random. This was a focused study with water project beneficiaries, water project staff and water project committee as the primary respondents. The sample size (S) of this study was calculated based on Krejcie and Morgan (1970) of known population (N). The sample size of this study was 226 randomly selected households from a population of 547 households, 6 water project committee members and 4 project staff. This study sought to investigate the influence of monitoring and evaluation on the performance of water projects. The research was meant to expose if there is a link between monitoring and evaluation and achievement of pre-designed water project objectives. This research tested the influence of; formative evaluation, summative evaluation, financing monitoring and evaluation activities, participatory data collection and skilled human resource in monitoring and evaluation against the performance of the water projects. This study justifies the reason behind investing in monitoring and evaluation in water projects. It also validates the reasons of having such a theme in the organizational structure. In conclusion, this study sought to establish the relation between monitoring and evaluation and performance of water projects in a development context. The research evidence found also provided sufficient support for government departments, institutions and donor agencies to realize the need to invest or the need not to invest in monitoring and evaluations for performance of water projects.

CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

The importance of accountability and governing for results was found in both national and local governments as well as in public service organizations (McLaughlin J.A, Jordan G.B, 1999). Without effective planning, monitoring and evaluation, it would not be possible to assess if work is progressing in the right direction and whether success can be claimed, and how future performance might be enhanced (UNDP, 2009).

According to UNDP, the emphasis of monitoring and evaluation is to improve the effectiveness of aid by showing a strong relation between the past, present and future interventions and results (UNDP, 2002). Monitoring and evaluation are critical project management tools. Monitoring informs stakeholders of progress and outcomes, and shows where corrective action is needed to adjust implementation plans. Evaluation assesses outcomes and impacts relative to expectations, explains disparities, and helps review funding distributions. Taken together, monitoring and evaluation are vital to assessing the relevance and achievement of project goals (The International Bank for Reconstruction and Development/The World Bank, 2008).

IFRC revealed that an operating Monitoring and Evaluation (M&E) system is an important part of effective project/programme administration and accountability. Sensible and dependable M&E provides evidence to support project/programme implementation with precise reporting that informs management and decision-making to influence and improve project/programme performance (International Federation of Red Cross and Red Crescent Societies, 2011).

According to UNDP, the change to a culture of performance demands repositioning of all UNDP programming instruments with the organization's results-based management approach, including monitoring and evaluation. (UNDP, 2002). Machakos County is located in the lower eastern region of Kenya. It has a total population of 1,098,584 people, 264,500 Households and covers an area of 6,208 KM^2 (KNBS, 2009). The total land coverage of Machakos County is divided into eight administrative units called sub-counties. These sub-counties are; Mavoko, Kathiani,

Machakos, Matungulu, Yatta, Masinga, Mwala, and Kangundo. Masinga, Yatta, Mwala and Machakos sub counties have the biggest area coverage respectively while Kangundo, Kathiani and Matungulu have the lowest coverage respectively. Machakos County has unique physical and topographical features. The areas within the Machakos County that are predominately plain include; Mutituni, Mwala, Mua and Kathiani (MCG, 2015). In view of this background, this research endeavored to investigate the influence of monitoring and evaluation on the performance of water projects focusing on Mwala Area.

1.2 Statement of the Problem

Efforts across the world have been made in development of water projects able to provide clean and sufficient water for human population. Water projects are usually expensive in terms of expertise, labour and financial resource. By not meeting the expected performance, water projects that are not functioning can result in a huge resource loss. In many parts of Kenya there are many cases of dry boreholes, washed away water pans and unfinished water projects.

The main water sources in Machakos County are rivers, dams and boreholes. The average distance to the nearest water source in the county is 5 Kilometres and only 1514 (1%) of the households in the county access potable water (MCG, 2015). Mwala Sub-County is part of Machakos County characterized by inadequate access to water. In Mwala Area there are both successful and unsuccessful water projects and challenges of water scarcity still persist. (MSC Records, 2016).

Despite the knowledge in monitoring and evaluation as necessary for an improvement in the attainment of results and performance of projects, several organizations, governments departments and institutions are yet to get a strong backing on the need to invest in monitoring and evaluation. This research is therefore important to donor agencies, governments, water service providers, policy makers and water users, who have a stake in water projects and other similar development projects. The study was undertaken in the semi-arid and water scarce location of Mwala, in Machakos County of Kenya. Understanding the influence of monitoring and evaluation helps introduce a new perspective leading to improved performance of water projects.

1.3 The Purpose of the Study

The study purposed to investigate the influence of monitoring and evaluation on the performance of water projects in Kenya with specific focus on Mwala Water Project in Machakos County.

1.4 The Objectives of the Study

The following were the objectives of this research.

1. To assess the influence of formative evaluation on the performance of water projects.
2. To establish the influence of summative evaluation on the performance of water projects.
3. To establish the influence of financing monitoring and evaluation activities on the performance of water projects.
4. To determine how participatory data collection influence the performance of water projects.
5. To establish the influence of skilled human resource in monitoring and evaluation on the performance of water projects.

1.5 Research Questions

The study was guided by the following research questions;

1. What is the influence of formative evaluation on the performance of water projects?
2. What is the influence of summative evaluation on the performance of water projects?
3. What is the influence of financing monitoring and evaluation activities on the performance of water projects?
4. How does participatory data collection influence the performance of water projects?
5. What is the influence of skilled human resource in monitoring and evaluation on the performance of water projects?

The research worked with the following hypothesis; that if formative evaluation is implemented in a water project, then the water project will be functional, that if summative evaluation is conducted in a water project then the water project will be functional, that if financing of monitoring and evaluation activities in a water project are funded then water projects will functional, that if participatory data collection take place then water projects will be functional and that if water project staff are skilled in monitoring and evaluation, then the water projects being implemented will be functional. The research test focused on specific responses of independent variables and access to water as an indicator of performance and functionality of a water project.

1.6 Significance of the Study

This study was considered crucial as it establishes the influence of monitoring and evaluation on the performance water projects. The knowledge obtained from this study will help the national and county governments, international donors, local agencies and institutions on the importance of monitoring and evaluation in assuring performance of water projects. Without this knowledge, monitoring and evaluation will continue to be ignored in water development projects and programmes. In addition to this, a lot of resources including; personnel, time and money will continue to be invested in monitoring and evaluation without a justifiable reason to do so.

Formative evaluation ensures that relevant project data is collected at the start of water project to inform project start and implementation strategy. Summative evaluation ensures that stakeholders review the achievement of water project objectives at the end of the project period. Financing of monitoring and evaluation activities ensures that monitoring and evaluation activities are provided with adequate funding to ensure that they are fully implemented.

Participatory data collection ensures that all water project stakeholders contribute useful information and ideas as the water project is implemented. Skilled human resource in monitoring and evaluation ensures that monitoring and evaluation activities are done by project staff with relevant knowledge and experience.

1.7 Limitations of the Study

The research anticipated limitations' relating to language barrier among some respondents since the research was to be conducted in a rural community. To minimize this limitation, local community resource persons participated as research assistants conducting the actual data collection.

The time of research was generally dry. This might have affected some project responses received at the time of data collection. The research assistants were well trained to ensure that questions are asked with informed understanding and in reference to a relatively a longer period of time.

1.8 Delimitation of the Study

The study was restricted to collecting data on water projects within Mwala Area of Machakos County of Kenya. Mwala area was selected being an area with limited access to water. The study strictly focused on investigating the influence of monitoring and evaluation and on performance of water projects in Nzevea, Kyamutwii and Mango of Mwala area in Machakos County. The water sources investigated are those that were implemented within the last five years.

The variables studied included; influence of formative evaluation, influence of summative evaluation, influence of financing monitoring and evaluation activities, influence of participatory data collection and influence of skilled human resource in monitoring and evaluation, versus the performance of water projects.

The main respondents were the adult principal caregivers within the sampled households. Other respondents were the water project staff and the water project committee members. The data collection took a maximum of four weeks for the purpose of ensuring precision of data in relation to changing context.

1.9 Assumptions of the Study

This research assumed that the identified respondents were to provide honest views that truly represent the views of the larger population. It is also assumed that the selected geographical location and the instruments used in this study effectively brought out the desired objectives of the study. This study also assumed that government policies and politics did not interfere with the findings of the research.

1.10 Definitions of Significant Terms

Baseline: This is the assessment and review of feasibility of the water project at the start or beginning of the project. In this study, this will also be referred to as formative evaluation.

Beneficiary: This refers to the water user or water consumer.

Evaluation: Evaluation is the systematic appraisal or review of the project progress towards achievement of objectives. Baseline is also a form of evaluation called formative evaluation. Summative Evaluation is done at the end of a project.

Household: A household in this study refers to one or more people who live in the same dwelling and share meals from the same pot.

Performance: Performance refers to a functioning water project supplying clean water to the users continually.

Potable Water: This is water that is safe to drink or to use for food preparation, without risk of health problems.

Monitoring: Monitoring is a continuous function to assess the attainment of pre-determined targets in an ongoing project.

Water Point: This is where the beneficiary or water user fetches water for day-to-day use.

Water Source: This refers to streams, rivers, dams, boreholes, shallow wells and roof catchment.

Water Quality: These are the physical, chemical, biological, and radiological composition of water.

Water Supply This is a system for collection, treatment, storage and distribution of water from the

System: water source to users.

Water Project: This is an activity or schedule of activities with the aim of distributing water to the households or users.

Skilled staff: This refers to project employees with relevant skills and experience to do the project work well.

Sustainability: This is the ability to maintain continuous delivery of products or services.

Training: Training in this research refers to M & E related capacity building events aimed at transferring skills to the project staff, water management committee or beneficiaries

1.11 Organization of the Study

In summary, this chapter outlines the background to the study, the statement of the problem, the purpose and the objectives of this research. It also lists the research questions and details the significance of this study. The chapter also describes significant terms, the limitations, the delimitations as well as assumptions of the study.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter brings about the already existing concepts and principles and practices on monitoring and evaluation in relation to performance of water projects. It outlines the already existing researched knowledge and brings about some of the conclusions and knowledge gaps in previous research studies. The importance of this section is in linking previous related research and this study.

2.2 Empirical review

Any task or project needs evaluation for its success to be prevalent and for this reason; evaluations need to be carried out by people with adequate and relevant skills, sound methods and adequate resources as well as transparency in order to secure their quality (Jones et al, 2009). According to Maxx (2005), human resources management is very important in project management especially in effective monitoring and evaluation by ensuring skilled and experienced personnel. The need to train the personnel and enhance expertise of the organization in conducting evaluations, the value and participation of its human resources during the decision making process as well as their motivation in implementing the decision can hugely impact on the evaluation (Vanessa and Gala, 2011). Foresti (2007) further illustrate that this should not be just mere training by undertaking learning approach which are best practice and have a positive effect on the evaluation process within the organization.

Human resource managers must ensure the staff are highly trained in order to secure the effectiveness of monitoring and evaluation. Additionally, financing is required to provide adequate resources for the evaluation. A monitoring and evaluation budget need to be developed and included in the overall project budget in order to provide the monitoring and evaluation function its due recognition in its place in project management (Gyorkos, 2003).

Rogers (2008) advocates for multi-stakeholders dialogues in the data collection, hypothesis testing as well as in intervention in order to secure greater participation. According to Crawford and Bryce (2003), monitoring is part and parcel of the project management function and as such is a complex issue which results to confusion in trying to apply them on projects. During the implementation phase of projects, monitoring enhances the project management decision making and as a result securing the success of the project (Gyorkos, 2003; Crawford and Bryce, 2003). Further, monitoring puts an emphasis accessibility and sustainability of proposed projects in order to determine their performance. This boosts the confidence and trust by stakeholders such as donors, beneficiaries and the wider community where the project is implemented**.** Chambers (2009) argue that the initiating political factor by the government strategies as an element of evaluation, involves asking who would gain, lose and how. This also involves how the results make a difference to the various stakeholders.

Evaluation on the other hand provides an assessment of the effectiveness of the project in achieving the goal and the relevance and sustainability of the on-going project (Gyorkos, 2003; McCoy, 2005). Evaluation compares the objectives of the project as set to be achieved by the project plan (Shapiro, 2004).

There is need to manage stakeholders with respect to discussion on how, why and what project activities empowers them to effectively understand the needs of the various stakeholders as well as promote inclusion and meaningful participation (Donaldson, 2003). Stakeholder involvement must be included in the early stages/planning stages of the evaluation process. This includes support of high profile individuals and political agents who may be interested in learning and using instruments to demonstrate effectiveness (Jones et al, 2009). Proudlock (2009) also found out that the process of evaluation in particular analysis and interpretation of results can be improved through the participation of intended beneficiaries who are the primary stakeholders and the best judges of their own situation.

According to Maxx (2005), financing monitoring and evaluation projects should ensure proper allocation and distribution of funds through a reliable and a transparent channel. Accountability of every phase should be done by ensuring the auditing process abides by the rules and regulations and generation of audit report is accurate (Gala, 2011).

It is imperative to draw a balance sheet of successful projects and failed projects and identify and categorize the failed projects. Malfunction of a single component of the project can affect the whole project, thus the need for tackling every component of the project as continuity and of sustainable strategy (ICEL, 1990). This helps to charter project successfully and all must be expertly managed to deliver the results on time and on budget.

2.3 Performance of Water Projects

Kenya is a water scarce country with a per capita of 647 cubic meters, which is below the world recommended per capita of 1000 cubic meters (Linson, 2012). There is unequal distribution of water in the country with some areas having excess and others having less than they require, which on average makes the country water scarce. Due to the unequal distribution, water sources are often far from the village, and people must walk for hours to fetch water on a daily basis. In an effort to reduce these distances, communities come together and form community water projects. These water projects improve the quality of life for families by reducing the daily burden of water collection and incidences of water and related diseases (WHO and UNICEF, 2005). The community water projects also enable farmers to increase crop production and nutrition levels for their families (Kamwana, W. C. & Muturi, W. 2014).

The Government of Kenya (GoK) has shown consistent commitment to the sector reform since their start in 2002 and development partners continue to support the reform process. The GoK through the Ministry of Water and Irrigation continue to pursue development programs related to water among others in pursuit of attaining universal coverage of water services and sanitation by 2020. This is guided by the National Water Services Strategy (NWSS) and prioritized in the Second Medium Term Plan 2013-2017 (MWI, 2007).

The Global Water Partnership (GWP) refers to water governance as the series of political, social, economic and administrative systems that are put in place to advance and handle water resources, and the provision of water services, at diverse levels of society. Water governance is apprehensive with those political, social and economic organizations and institutions (and their relationships), which play important roles in water development and management (Oakley and Marsden, 1987).

According to UN Habitat statement, nominal laws/regulations and regulatory frameworks are in place, but water supply and sanitation provision and management in the water sector in general is still very poor. Most decision-making processes references on governance and water governance in particular, tend to explain why there exist problems as the by-products of institutional arrangements and the participation of stakeholders. However, in reality, underlying political processes are also involved that are as much about economic and social power as they are about institutional problems. It is estimated that 20% - 40% of finances in the Water Sector are being lost through corruption and dishonest practices according to World Bank statement, (World Bank Report, Stalgren 2006).

The misappropriation of resources and funds, doctoring of bills and customers data, extortion of money from consumers, illegal connections, preferential treatment, theft and misuse of property and equipment, financing ghost projects, political manipulations, favoritism, nepotism, none transparent procurement of goods and services (poor quality but high costs) and bribery for illegal services are most common forms of corruption in the water sector of Kenya (Good governance in the Kenyan water sector, BMZ, 2012). Research recently confirmed that the way in which societies govern their water resources has an intense impact on settlements, livelihoods and environmental sustainability. Many current water crises are in fact largely problems of governance rather than the application of appropriate technical and management criteria in harnessing water sources and water quality, and yet governance has traditionally received less attention than technical issues. Governance structures that exclude the poor clearly contribute to the fact that more than a billion people in the world lack safe drinking water and nearly three billion have no access to adequate sanitation (UN Habitat, 2012).

There are several practices which play an important role in the performance of water projects. These include: Project Mission that is the initial clarity of goals and general direction; Top Management Support which is the willingness of top management to provide the necessary resources and authority for project success; Project Schedule/ Plans being a detailed specification of individual action steps required for project implementation; Client consultation referring to communication, consultation, and active listening to all impacted parties; Personnel involving recruitment, selection, and training of the necessary personnel for the project team; Technical tasks for instance availability of the required technology and expertise to accomplish the specific technical action steps; Client acceptance as the act of selling the final product to its ultimate intended consumer; Monitoring and feedback through timely provision of comprehensive control information at each phase in the implementation process; Communication channels by provision of an appropriate network and necessary data distribution to all important actors in the project implementation; and finally trouble shooting the ability to handle unexpected crises and deviations from plan Cooke-Davies (2001) and Cleland and Gareis (2006) have agreed that these practices do ensure effective and successful performance of water projects.

2.4 Influence of Formative Evaluation on the Performance of Water Projects

Formative evaluation helps shape decisions during the development of water projects. When developing the project, particularly one that is completely new or involves elements that have not been tried before, it may be useful to test out or pilot certain elements to ensure they will work in the manner intended. The organization may want to try out key interventions from an activity being planned to see how it will be effective. It could be that you wish to test out the appeal of an offer, for example if you are offering water efficiency retrofits, will people sign up for them? Typically used prior to the start of an initiative, this type of evaluation is not restricted to the beginning as there may be need to test out new elements throughout the life of the project. Formative evaluation activities tend to be qualitative in nature, with an emphasis on discussion-based methods such as focus groups or interviews (Powell, E. and Herman, C., 2010).

The evaluation of processes of the project can be as simple as scheduling in time to talk through progress with key staff members, allowing issues to be identified, recorded and resolved where possible (UCL, Evaluation Methods for Public Engagement Projects, 2010).

2.5 Influence of Summative Evaluation on the Performance of Water Projects

The best understood and most well used evaluation for water efficiency projects is summative evaluation which examines the outcomes of an initiative, examines whether aims have been met and the extent to which a project has had an impact. The main focus of the evaluation is upon 'goal based' evaluations, where measurable aims and objectives are set at the beginning of a project and the evaluation activities seek to assess if these have been met. However evaluations can also be without a goal, where aims and objectives are not pre-determined and the focus is on learning through emerging results and unintended consequences. In practice, it will often be beneficial to allow room in your evaluation activities without a specific goal, as this will help to ensure that unexpected, but still important outcomes are considered and recorded. In most cases, the majority of analysis for summative evaluations will take place at the end of an initiative. However the process will usually start before the project is even off the ground, as in order to understand what change has been achieved, a baseline must be established or an appropriate comparison group identified. Summative evaluation activities will often focus on quantitative data such as changes in water consumption data or statistical changes observed through survey data (HM Treasury, 2011). Evaluating the management and delivery of the project allows lessons to be learnt and recorded, meaning that improvements can be made both within the current project as well as in future work. It is important to understand what has worked well and what has not worked well so that effort and resources are used in the most effective way.

2.6 Influence of Financing Monitoring and Evaluation on the Performance of Water Projects

According to Habeeb, (2013) financial management is the operation of an internal control system. Financial management of projects must be actively managed; it is an important part of the project management process and should be reviewed by the project manager, financial team, stakeholders and key project team members regularly (Weick, 2005; Backström, 2004; Jensen, 2004; van Eijnatten, 2003). By keeping a close eye on the project budgets one will be assured that they are kept within the forecast set from the beginning.

According to World Bank (2013) annual report, Kenya is ranked the third largest recipient of the World Bank funded projects. The World Bank's portfolio in Kenya consists of 24 active national and eight regional operations with a total commitment of US$4.2billion. The projects are mainly focused on transport, energy, water, urban, health and social protection. In the year 2013, the Bank approved more than US$900 million for urban transport, the Ethiopia-Kenya power interconnector, infrastructure finance and judicial performance improvement. The Bank has also leveraged nearly US$300 million in private investments through partial risk guarantees for private independent water projects to improve Kenya's water supply. (www.worldbank.org.)

With planning complete, the project monitoring can begin Bevan and Hood, (2006). The Gantt chart is used to monitor progress on the project and identify problems, especially activities falling behind schedule. The use of "milestones" is essential in planning and controlling projects Bonner et al (2000). Milestones are placed at critical points in a project where major decisions must be made. The ability to accurately forecast financial aspects on project performance allows organizations or project teams to confidently allocate capital, reduce financial risk, possibly reducing the cost of capital Brignall and Modell (2000). Consumer Price Index Standard Deviation is an even better metric, one that shows the accuracy of budget estimation. Measuring cycle times can also mean measuring the length of time to complete any of the processes that comprise the water project life-cycle. Center for Business Practices, (2000); Phillips, (2002) also supports that time frame is a measure of project performance since the project is always set to be completed in certain timeline so as to be relevant and viable.

Bovan (2006) argues that it is important to supplement financing monitoring and evaluation with methods that systematically improve efficiency. Budget process is an ideal forum for systematically identifying efficiency opportunities. The finance manager can promote process improvement methods that take place outside budgeting, but that will ultimately have a positive impact on the budget. In addition, ICLEI (1990) explains that creation of the right incentives is encouraged. Here it is desired to promote budget policies to encourage departments to invest in efficiency that lead to success in water projects. For example, a policy that rewards departments for observing water consumption and community sensitization on water conservation will provide a better incentive than one that immediately turns the savings over to central control. In

this case it is desired to allow the department to invest its first year water conservation in a short-term project that has direct benefits to the department.

Financing evaluation and monitoring plays key roles in developing the long-term financial goals of an organization by enabling financial managers ensure sustainable water projects. Financial planning encompasses setting goals, assessing financial assets and resources, estimating future financial requirements and making plan to achieve monetary goals according to Madison (2009). Madison continued to suggest that, one systematic tactic for attaining effective management performance of water projects is financial planning, budgeting and that sustainability of the project lies in effective financial management right from the implementation to post implementation stage. It is important to set up and plan a budget for the amount of money received (Mwaura and Ngugi, 2014). However it is doubtful whether the community water projects prepare and use budgets appropriately. This makes it necessary to investigate the financial management in these groups. Financial statements contain valuable information that managers can use to analyze past performance of a project. Furthermore, they are used to track the monetary worth of goods and services into and out of the organization. This then calls for the water project managers to have a careful financial management strategy to guarantee the effective performance of these projects (Mogaka, et al. 2009).

Organizations are required to use funds wisely for the purpose intended in order to ensure success of water projects and for this reason there will be an improvement of living standards of the populations meant to benefit (Lent, 2004). Often, uses of funds are diverted to serve other interest of the organization managers outside the scope and work plans of these projects (Anthony and Young, 2003). This has resulted in surprise audits where misuses of funds are suspected by financiers and in the extreme cases bank accounts have been frozen to minimize the extent. Good financial management practices demand that obvious key management concepts and principles such as sustainability, accountability and transparency which are necessary for institutionalized formal procedures are put in place administrative efficiency (Mwaura and Ngugi, 2014).

2.7 Influence of participatory data collection on the performance of water projects

Monitoring and evaluation projects can include participants in many different ways. This might be in the level of complexity and their requirements for technical expertise. The actual participation system implemented could be a hybrid of the approaches presented. Thus flexibility and adaptability during the design process are essential. Individual participants may take on different roles, for instance; some participants may merely observe, whereas others may be actively involved in all phases of the process from data collection to interpretation and communication. In all cases, roles need to be clearly defined (Beierle, T. C. and J. Crawford, 2002).

Community members are trained to be good observers of conditions in their waterway; to know if their community is connected to a water source potentially impacted by the project; to be educated about what is going on up river; and to report on anomalies. The populace collects data that require limited technical resources and are based on field observation rather than laboratory analyses. This approach requires little technical expertise on the part of participants (Barbour, 2002).

Community members accompany representatives of the project sponsor, company, or the government. This approach allows community members to see the site, learn about the monitoring protocols, and observe the company doing its monitoring work. The approach relies on the efforts of careful community observers who will accurately communicate what they see to the public (Sandman, P. 2003). Barbour, M. T., J. Gerritsen, B. D. Snyder and J. B. Stribling (1999) argued that the brighter side on performance of the project is that there is limited training required which gives participants a chance to see the project area. This changes perceptions of citizens when they actually see the site and find out what goes on "behind the fence."

According to Thornton (2004) a monitoring committee for participatory data collection is required for a cooperative effort that integrates existing water monitoring projects conducted by a company, civil society and government. It relies on joint fact finding participants and technical staff collects some data at strategic locations and analyze these data with as much rigor as the participating institutions. The approach creates an integrated database; supports an integrated

approach to interpretation; provides quality assurance; and ensures that results, conclusions, and recommendations are communicated to the public at large and to affected communities. Volunteer participants observe data collection in the field. A technical working group works with technical staff to analyze data, identify issues of concern, engage in problem solving to address problems, and communicate to the public. The approach relies on the good will of the organization to make changes.

According to Organization for Economic Co-operation and Development (2001), independent experts can be contracted to conduct monitoring. The team of experts makes regular field visits. It meets with company, community, and other stakeholders as part of each field visit: at the onset, to hear complaints; and at the end of the monitoring visit, to brief interested parties.
Technical experts collect original data and draft a report, which is made public. The technical experts intentionally do not engage with the organization in negotiating compliance; rather they guard public interest by making findings transparent and use moral authority to compel the organization to make needed changes. The community may be involved in developing the terms of reference and selection process. The community may or may not accompany experts in the field (International Finance Corporation, 2006).

A highly profession panel or organization of technical experts can monitor geographically diverse and extensive areas, such as the terrain and communities along a pipeline route. It can provide a high degree of technical credibility (Sandman, P., 2003). It may be perceived as more independent than other approaches. It may be able to stay above the political fray. It can consult with civil society without having to create a dialogue table of all stakeholders. It may be particularly effective when people are unable to talk together for geographical reasons or because of intractable conflict (United Nations, 1998).

In general, a participatory data collection for an exploration or prefeasibility stage of a project could be fairly simple, focused on characterizing the social and natural environment before the onset of the new project (Gunningham, N., 2004). In this case, the planning team could choose an approach such as the community stream watch or observer approach that focuses on education and awareness or the development of an initial baseline. Conversely, a large water project

located in an area with a negative environmental legacy, history of violence or conflict, or weak regulatory and institutional framework would require a more complex and costly participatory approach, such as the monitoring committee model. If the project is so controversial that participants cannot work together or agree on an approach, the independent expert model may be the only solution (R. A. Kagan, 2004). For each participation approach, the role of participants needs to be established, together with any limits that may be necessary. For example, observers are involved with data collection and have a responsibility to inform the public regarding what happens in the field but are generally not involved with data interpretation. Monitoring committee members may be involved with data interpretation, but they may not have the authority to communicate results to the public. Participants need clear, written guidance defining roles and criteria. For example, it is necessary to determine in the beginning how and when information will be given to the public. Also, participants need an established person or method for resolving disagreements and determining who has the ultimate decision-making authority (Beierle, T. C., and J. Crawford., 2002).

2.8 Influence of skilled human resource in the performance of water projects

One of the key phases of managing for quality is creating and developing human resources. Organizations need to recruit employees with appropriate skills and then grant them with systematic education and ongoing worker assistance (Marc Holzer, Kathryn and Klorby, 2008). It is of importance that this should be performed through the use of a wide viable network of contacts to identify the candidates. Sources of team of workers consist of different organizations, educational establishments (local and international) and associate organizations. In addition, the group of workers should have experience of similar projects and a grasp of the kind of work mission involved, and at least some of the team members must have an excellent know-how of the county and of the local scenario for project success (Nahyan. Moza, Al, Amrik Sohal, Brian & Fides, 2012).

Training of workforce by itself is not enough to enhance performance of water projects to a greater level due to the fact now not all knowledge received from the training is transferred and utilized to the project. In other words transfer of the expertise and abilities obtained through training has to be fully implemented in the workplace to realize full benefits (Dirani, 2012).

Effective communication has a significant relationship with superb implementation approach hence good performance of such a project (Maina & Waweru, 2011). Lack of well-educated and skilled staff places a restriction to the extent to which organizations can manage their each day affairs and their capacity to effectively, plan, appraise, implement and display their activities (Vera Ogeh & Fiador, 2013)

Afande (2013) established that the degree of accomplishment of contributor project is resolved through specialized and organization capability of human resources of the executing offices. He contended that the officers in the contributor project may likewise do not have the formal preparing in outside guide administration, planning and book keeping. These defenseless capacities may moreover prompt to poor valuation for the giver consumption conventions coming about into ineligible use, which prompt to dismissal for comparative financing by method for the benefactor. Xavier, Harold, Racheal and Walton (2012) found that in spite of the traditional learning that the ability of the project fashioners, organizers and administration group is most identified with achievement. Abraham and Farhad (2006) stated that project performance relies upon on the managerial abilities and competence of the project manager. An important, but continually overlooked element of the implementation method is the nature of personnel involved. Many a times, the staff for the project are selected with much less than the required competencies necessary to make the assignment a success. It is vital to develop a project team that has the requisite competencies to perform their functions and also to understand the mission well. Staff education to enhance competency needs to be factored in water projects. Effective coaching must be carried out and the trainees given an opportunity to exercise the newly received abilities on completion of the training. The focal point on capacity building of the project staff ensures a workforce with suitable skills to promote participatory and sustainable implementation of projects (Ubah, Ibrahim S., 2016).

PMI (2004) underscores that the interpersonal capacities expected to motivate a project group are a project director's most vital resource. Whether a project group is colossally inspired to accomplish water project's objective can have the effect between smooth project undertaking and one that is impeded with inconveniences.

2.9 Theoretical Review

2.9.1 Introduction

This section outlines the proponent theories informing this research. The two theories are Theory of Change (TOC) and Program Theory.

2.9.2 Theory of Change

Weiss in 1995 described Theory of Change as a theory of how and why an initiative works (Weiss, C.H., 1995). Weiss pointed out that it could be understood as a way to describe the set of assumptions that explain both the mini-steps that lead to a long term goal and the connections between these activities and the outcomes of an intervention or programme.

There is little consensus on how Theory of Change is defined. However, like Weiss' initial definition, TOC is most often defined in terms of the connection between activities and outcomes, with the articulation of this connection the key component of the TOC process (Reisman, Jane, Anne Gienapp, and Sarah Stachowiak, 2007). The ability to articulate this connection rests on the idea that social programs are based on explicit or implicit theories about how and why the program will work (Anderson, A., 2004).

Theory of change is part of the program theory that emerged in the 1990s as an improvement to the evaluation theory (Danielle Stein and Craig Valters, 2012). The idea of the TOC approach seems to have first emerged in the United States in the context of improving evaluation theory and practice in the field of community initiatives (Vogel, I., 2012). From the evaluation perspective, TOC is part of broader program analysis or program theory. In the development field, it also grew out of the tradition of logic planning models such as the logical framework approach developed from the 1970s onwards. The notion of developing informed social practice has a long history; practitioners have often sought and used tools to attempt to consciously reflect on the underlying theories for development practice (James & Cathy, 2011).

The Theory of Change assists in having clarity on outcome chain(s) and explains which strategies have been selected, why the set of strategies and how they are expected to unfold. Theory of Change often is revised and updated in the course of the program life, taking into

account lessons learned and opportunities for improvement of the Theory of Change (UK Stabilization Unit staff, 2013).

According to Anne Mackinnon (2006), development of Theory of Change supporting a project is of great help to design and focus the Monitoring and Evaluation framework in an early stage of the design process and not in the early implementation phase as is often the case. The main actors, critical assumptions, intended outcomes and some key indicators will be available as a basis for the Monitoring and Evaluation framework. The sharper focus of the project will facilitate the decision which results to key information to collect and who should be involved. As the Theory of Change process enhances the understanding of stakes and stakeholders, this will assist in thinking through the utilization of the Monitoring and Evaluation data and lessons and increase the consequence awareness.

Monitoring is usually treated as tracking progress against plans, milestones and what is expected to happen. With Theory of Change a broader perspective need to be taken and looking at the problem the project is addressing, the wider context and changes in the relationships between the main process indicators and unintended outcomes. Going back to the assumptions that have been made at the start during project implementation is of great importance to know if they prove to be valid. If not, it may be necessary to adapt the strategy, or review the Theory of Change. Theory of Change is helpful to not only measure outcomes but also to understand the role of the project and other factors in contributing to outcomes (Reeler, 2007).

According to Natasha Amott (2006), Evaluation usually takes place either as a mid-term review, towards the end of a project or some time afterwards. A main objective of a mid-term review is checking if the project is contributing to the intended change in line with the underlying Theory of Change and if the Theory of Change needs to be revised. Formative evaluations would typically also have an open eye to revise the Theory of Change, whereas summative evaluations would study if lessons learned can be up-scaled or transferred to other domains of practice. Theory of Change can help design evaluations of projects that have complicated or complex aspects.

The results from monitoring feed into the evaluation, but the evaluation often will have a deeper look at why this has happened. Theory of Change is key in helping to articulate the "why" element at design, planning and monitoring stages, which provides input for the evaluation. Theory of Change can help to decide what are the main cause-effect relations that need to be studied. Sometimes, in the absence of a Theory of Change, the evaluation team could assist key partners to reconstruct the Theory of Change of the ongoing project (Reeler, 2007).

2.9.3 Program Theory

According to L. Bickman (1985), Program Theory is the construction of plausible and sensible model of how a program is supposed to work. Weiss defines program theory as the mechanisms that mediate between the delivery and receipt of the program and the emergence of the outcomes of interest (Weiss, 1998).

It is commonly reported that the function of a program theory is to ascertain the theoretical sensibility of the program (Chen, 1990b; Lipsey, 2000; Reynolds, 1998; Rogers et al, 2000; Rogers, 2000a; Sedani & Sechrest, 1999; Stufflebeam, 2000: Weiss, 1997). A program theory consists of a set of statements that describe a particular program, explain why, how, and under what conditions the program effects occur, predict the outcomes of the program, and specify the requirements necessary to bring about the desired program effects (Sedani & Sechrest, 1999).

Program theory uses three components to describe the program: the program activities or inputs, the intended outcomes or outputs, and the mechanisms through which the intended outcomes are achieved (Reynolds, 1998; Rogers, 2000; Rogers et al, 2000; Sedani & Sechrest, 1999). A description of the critical inputs define the components of the program, describe how these components are delivered, define the strength or amount of treatment required to induce the outcome (Sedani & Sechrest, 1999), and outline the required aspects vital in producing the expected outcomes (Lipsey, 1993). The processes that the outcome is contingent upon (Lipsey, 1993) and that follow the inputs should be described.

The program theory has been used to guide evaluation for many years; it shows the capability of the program to fix a problem by addressing the needs in the need assessment. It also gives tools to determine areas of impact in evaluation (Sethi and Philippines, 2012). Lipsey, (2003) argued that program contributes to evaluation practice through the identification of key program elements as well as providing information on how these elements relate to each other. Data collection plans are then involved in the framework to ensure information to measure the extent and nature of each aspects and their occurrence. Once the data on the elements is collected, it is analysed within the framework.

Program theory is a plausible and sensible model on how a program is supposed to work (Bickman L., 1987). Lipsey (2003) stated that it is a proposition with regard to the transformation on input into output and how to transform a bad situation into a better one through inputs. It is also illustrated as the process through which program components are presumed to affect outcomes. Rossi (2004) argued that a program theory consist of an organizational plan on how to deploy resources and organize the activities of the program activities to ensure that the intended service system is developed and maintained. The theory further deals with the service utilizations plan which analyses how the intended target population receives the intended amount of intervention. This is through the interaction of the service delivery systems.

Finally, program theory looks at how the intended intervention for the specified target population represents the desired social benefits. Rogers as cited by Uitto (2000) illustrates the advantages of using a theory based framework in monitoring and evaluation. It includes the ability to attribute project outcomes of specific projects or activities as well as identification of anticipated and undesired program consequences. Theory based evaluations as such enables the evaluator to understand why and how the program is working (Weiss, 2003).

2.10 Conceptual Framework

The conceptual framework shows the interaction between variables of this study. The independent variables are; formative evaluation, summative evaluation, financing M&E activities, participatory data collection and skilled human resource in monitoring and evaluation. The dependent variable is performance of water project. The framework means that performance

of water project is obtained after the achievement of the four independent variables mentioned above and portrayed in figure 2.10.

The government policies on water supply and management, and culture of support of M&E within the organization form the moderating variable. Presence of viable water sources within the locality form the intervening variable.

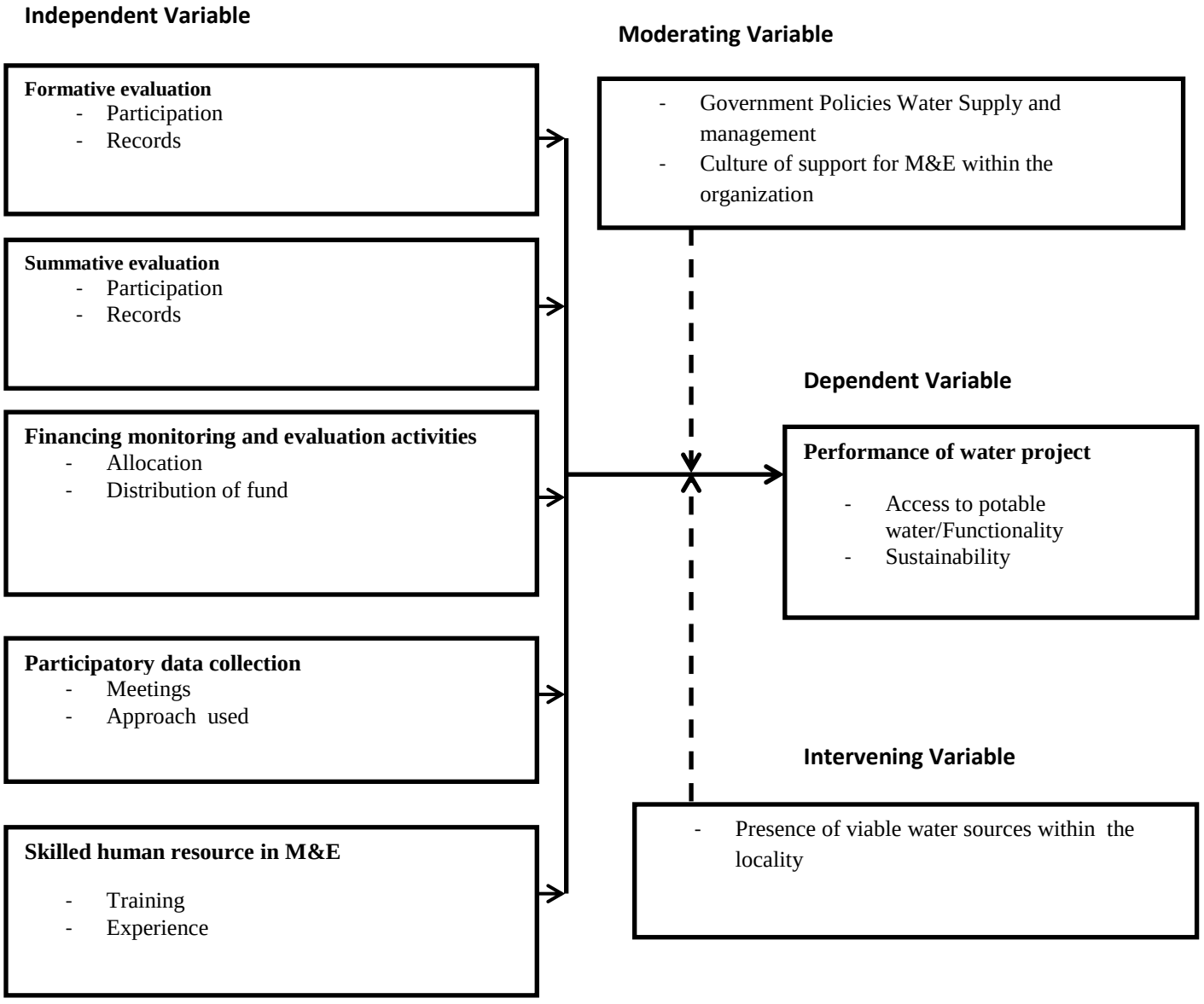

Figure 2.1 Conceptual Framework

Explanation of Variables

2.10.1 Formative Evaluation

Formative evaluation ensures that the program or water project is feasible, appropriate and acceptable before it is fully implemented. It is usually conducted when a new project or activity is being developed or when an existing one is being adapted or modified. It shows whether the proposed project elements are likely to be needed, understood, and accepted by the population to be reached. Also it shows the extent to which an evaluation is possible, based on the goals and objectives. It allows for modifications to be made to the plan before full implementation begins and maximizes the likelihood that the program will succeed. This study examines the influence of formative evaluation on the performance of water projects.

2.10.2 Summative Evaluation

Summative evaluation looks at the outcome of an intervention on the target group. This type of evaluation is arguably what is considered most often as 'evaluation' by project staff and funding bodies - that is, finding out what the project achieved. Summative evaluation can take place during the water project implementation, but is most often undertaken at the end of the project. Summative evaluation is often associated more with objectives and is linked to the evaluation drivers of accountability. Summative evaluation is outcome-focused more than process focused. This research investigates the influence of summative evaluation on the performance of water projects.

2.10.3 Financing Monitoring and Evaluation

Financing monitoring and evaluation is the process of availing finance to ensure current and future management of outputs and outcomes of projects. This can be done by donors, independent branch of implementing organization, project managers and private company. This research sought to underscore the value of financing monitoring and evaluation events in water project as a critical component to ensuring performance.

2.10.4 Participatory Data Collection

Participatory data collection is a method of data collection generally associated with qualitative methods of information gathering. Participatory approaches contain a variety of data collection

methods such as: participatory listening and observation; visual tools such as maps, daily activity diagrams, institutional diagrams and Venn diagrams, flow diagrams and livelihood analysis; semi-structured interviews; and focus group discussions. Among the participatory methods of evaluation, semi-structured interviews and focus groups are the most often used instruments for gathering the views of participants on the water project. Participatory listening and observation and various visual tools would normally be undertaken at the initial stages of the evaluation process as they often provide the basis for the design of in-depth questionnaires for semi-structured interviews and the conduct of focus groups. This variable was investigated to find out its influence on the performance of water projects. The research positions participatory data collection as a process that runs throughout all the project stages not only during evaluation.

2.10.5 Skilled Human Resource in Monitoring and Evaluation

Skilled human resource refers to trained, well-educated and experienced individual ready to attain goals and objectives of a project. They are important in such projects since they are able to carry out project activities by ensuring utilization of resources and help conserve them. They also ensure sustainability in projects therefore meeting long term projections. This framework focused on skills relating to monitoring and evaluation in relation to the performance of water projects.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents a detailed description of the research methodology under the following sub themes; research design, target population, sampling procedure and sample size, research instruments, data collection procedures, methods of data analysis and ethical issues.

3.2 Research Design

The study design for this research was a descriptive survey. This design is used to describe characteristics of a population or phenomenon being studied (Shield et al, 2013). The descriptive survey enabled the sampled respondents to answer questions about their values, attitude and practices relating to water projects.

Respondents were sampled among water project beneficiaries, project staff and members of water project committees from Nzevea, Kyamutwii and Mango area of Mwala ward in Machakos County. Questionnaires were used to obtain data on the influence of monitoring and evaluation on the performance of water projects. The findings were generalized to the population that the sample was drawn from. This design also provided an opportunity for the respondents to reflect and share information relating to the context, historical view and the present performance of the water projects.

3.3 Target Population

The target population for this study was 547 households living within a distance of a kilometer from developed water sources within Mwala ward (Mwala ADP, 2017). The population was in a good position to provide sufficient details about the water projects. The households living near water sources in Mwala area were chosen because the area falls under arid and semi-arid lands with history water scarcity. At the moment of study, the area has both successful and unsuccessful water projects.

Table 3.1: Target Household Population in Nzevea, Kyamutwii and Mango of Mwala Ward.

Village/Cluster	Number of Households	Percent (%)
Nzevea	52	9.5%
Kyamutwii	167	30.5%
Mango	328	60.0%
Total	**547**	**100.0%**

The households beneficiaries targeted in the sampling frame above were within a kilometer radius from water points validated through the area administration officers.

3.4 Sampling procedure

The sampling frame was composed of households within 3 villages within Mwala ward namely; Nzevea, Kyamutwii and Mango areas. The sampling frame were obtained from and validated by the area leaders; chief and assistant chiefs. This provided up-to-date information for the purpose of this study.

The sample size for this study was determined using Krejcie & Morgan (1970) sampling for known population (N). The following is the formula used to determine the sample size.

$$S = \frac{X^2NP\,(1-P)}{d^2\,(N-1) + X^2P\,(1-P)}$$

Where:

S = *Required Sample size*

X = *Z value (e.g. 1.96 for 95% confidence level)*

N = *Population Size*

P = *Population proportion (expressed as decimal) (assumed to be 0.5 (50%)*

d = *Degree of accuracy (5%), expressed as a proportion (.05); It is margin of error*

The study based on the above formula (Krejcie & Morgan, 1970), had a sample of 226 which was randomly be selected from the 3 cluster proportionate to size. The distribution per cluster is as follows;

Table 3.2: Sample Size per Cluster.

Cluster Name	Cluster Number	Number of respondents	Proportion (%)
Nzevea	CN1	21	9.3%
Kyamutwii	CN2	69	30.5%
Mango	CN3	136	60.2%
	Total	**226**	**100.0%**

Four project staff were purposively sampled and interviewed on the details of the water projects as key informants. The Chairpersons and the Secretary (26%) of the water project committees in Nzevea (9), Kyamutwii (7) and Mango (7) were also sampled purposively and interviewed for the purpose of triangulation.

3.5 Methods of Data Collection

This research mainly used the questionnaires to collect data from respondents of Nzevea, Kyamutwii and Mango areas in Mwala Ward. The researcher and the research assistant worked closely with water project staff to ensure data collection is well planned and organized. The researcher together with the research assistant interviewed the project staff and water project committees.

The researcher and research assistant sensitized the community on the research made appointments with staff and government officials. This was to ensure that there was awareness concerning the research. After sampling and identifying the respondents' questionnaires were administered while observing all ethical considerations.

Researchers increasingly have used mixed method techniques to expand the scope of, and deepen their insights from, their studies. As advocates of mixed-method research have argued, the complexity of human phenomena mandates more complex research designs to capture them (Sandelowski, 2000). Combinations at the method level can be used to expand the scope of a study as researchers seek to capture method-linked dimensions of a target phenomenon (Greene et al., 1989)

3.5.1 Research Instruments

The main data collection instrument was the questionnaire. The reason was that it was possible to get large quantity of data relating to the research objectives within a short time. The questionnaire was structured to have closed ended questions, questions with multiple responses and five-point likert scale.

The questionnaire composed of the introduction part out of which the general introduction of the research and the consent of the respondent was obtained. The second mentioned the cluster and background information.

The third section of the questionnaire formed the questions to get the facts, opinions and perceptions of the respondents relating to the research themes. The questionnaires were made comprehensive so as to capture issues and responses related to the research questions.

3.6 Validity and Reliability

Validity and reliability of the data collection instruments are discussed in details in this section. Validity is a measure of the extent to which an instrument measure what the researcher intends to measure (Munyoki J.M. and Mulwa A.S, 2012).

Reliability is a measure of consistency with which a predictor continues to predict performance with the same degree of success (Cowling A.G. and Mailer C.J.B, 1986)

3.6.1 Validity

Bums and Grove (1993) stated that content validity is obtained from three sources: literature, representatives of the relevant populations, and experts. Content validity could also be established in two stages; development and judgment stage and it is better first addressed at beginning with instrument development.

The first step of instrument development was to identify the domain of construct that should be measured. This can be determined through literature reviews, interviews and focus groups. By determining a precise definition of traits of interest, a clear picture of limitations, dimensions, and components of the subject can be reached (Yaghmale F, 2003).

The research applied content validity; which is the measure of the degree to which data collected using a particular instrument represent a specific domain of indicators of a particular concept (Munyoki J.M. and Mulwa A.S, 2012).

The researcher applied content validity of the instruments to measure the degree to which the specific areas of study are covered. To assure validity before data collection, the researcher reviewed the instrument against the research objectives. The supervisor also played a crucial role as an expert in reviewing the instruments to ensure validity. A pilot test was also done and necessary corrections and adjustments made before actual data collection.

3.6.2 Reliability

The researcher first conducted a pilot test of the instruments on 23 water users and 2 project committee members in Mwala Area. The same instrument was re-administered after one week to the same respondents without notification. This helped to measure the consistency and the reliability of the findings. The research used SPSS version 21 to compute reliability. The computed Cronbach's alpha (α) coefficient was found to be (Alpha $\alpha = 0.87$). As a general rule, this was found to be good reliability according to George and Mallery (2003).

3.7 Methods of Data Analysis

Quantitative data was cleaned and analyzed quantitatively using descriptive statistics (Kasomo, 2006). This research used SPSS software version 21 for quantitative data entry and data analysis. Levels of measurement that is; nominal, ordinal, interval and ratio, was considered during the design of the research instruments. This enabled the appropriate data analysis and tests to be done later after data collection and data cleaning was completed.

Frequency tables were generated and specific responses to research questions were tested with Chi Square (χ^2) to examine the significance of relationship. Variables and the weight of their association were also analyzed for all the five objectives. Qualitative data was transcribed, read severally and the key words or phrases were coded. The codes were categorized to themes which were then analyzed. The emerging themes were discussed in relation to the variables of the study.

3.8 Operational Definition of Variables

In order to achieve the goal of this study on the influence of monitoring and evaluation on the performance of water projects in Kenya, with focus on Mwala area, the following objectives were operationalized; to assess the influence of formative evaluation in the performance of water projects, to establish the influence of summative evaluation in the performance of water projects, to establish the influence of financing M&E activities in the performance of water projects, to determine how participatory data collection influence the performance of water projects, and to establish the influence of skilled human resource in monitoring and evaluation in the performance of water projects.

Table 3.3 Operationalization of the Study Variables

Objectives	Variables		Indicators	Measurement	Level of Measurement	Tools for Analysis
	Independent	**Dependent**				
To assess the influence of formative evaluation in the performance of water projects	Formative evaluation	Performance of water projects	Participation	Participation in formative evaluation	Nominal	**Descriptive statistics** - Frequency distribution - Percentages - Mean - Correlation
				Meetings	Ordinal Interval	
			Records	Formative evaluation/feasibility	Nominal	
To establish the influence of summative evaluation in the performance of water projects	Summative evaluation	Performance of water projects	Participation	Participation in formative evaluation	Nominal	**Descriptive statistics** - Frequency distribution - Percentages - Mean - Correlation
				Meetings	Ordinal Interval	
			Records	Summative evaluation/project review	Nominal	
To establish the influence of financing monitoring and evaluation activities in the performance of water projects	Financing monitoring and evaluation activities	Performance of water projects	Allocation	Awareness	Nominal	**Descriptive statistics** - Frequency distribution - Percentages - Mean - Correlation
				Budget allocation	Nominal	
			Distribution of fund	Budget distribution	Nominal Ordinal	
To determine how participatory data collection influence the performance of water projects	Participatory data collection	Performance of water projects	Meetings	Participatory Meetings	Norminal Ordinal	**Descriptive statistics** - Frequency distribution - Percentages - Mean - Correlation
			Approach/Methods used	Participation	Norminal	
				Beneficiary Satisfaction	Ordinal	
To establish the influence of skilled human resource in monitoring and evaluation on the performance of water projects	Skilled human resource	Performance of water projects	Training	Participation	Nominal Interval	**Descriptive statistics** - Frequency distribution - Percentages - Mean - Correlation
			Experience	Beneficiary Satisfaction	Nominal Ordinal	

3.9 Ethical Issues

The researcher assured all participants that their identity would be protected and remains confidential. Privacy of the respondents was also respected. All respondents were handled respectfully to ensure their safety and dignity was preserved. Informed consent was included in the questionnaire so that the respondents consent voluntarily before data collection continues. This consent acted as a way of seeking permission from the respondent to proceed with the administration of the questionnaire.

A research authorization permit was obtained from National Commission for Science, Technology and Innovation. The same permit was shared with the relevant offices so that they all are informed of the intention to undertake a research. Awareness was created by the researcher and the research assistants before the actual data collection. This was to ensure both local leaders and community members were informed so as to build rapport.

3.10 Organization of the Study

In summary, this chapter outlaid the research methodology providing details on research design, target population, sampling procedure and sample size, research instruments, validity and reliability, data collection procedures, methods of data analysis, operational definition of variables and ethical issues. The chapter provides a general picture on how the research was operationalized.

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTEPRETATION

4.1 Introduction

This chapter contains data analysis, presentation and interpretation of the findings of this study. The arrangement of the sub topics and data analysis has been made in the order of the objectives. The presentation of the study findings are in form of frequency distribution tables, measure of central tendency (especially mean and mode), percentages and detailed explanations of the findings for clarification.

The sub titles of this chapter are ordered the way research questions are; the influence of formative evaluation on performance of water projects; the influence of formative and summative evaluation on performance of water projects; the influence of financing monitoring and evaluation on performance of water projects; the influence of participatory data collection on the performance of water projects, and the influence of skilled human resource in monitoring and evaluation on the performance of water projects.

4.2 Questionnaire Return Rate

All the 226 questionnaires that were given to the beneficiaries, staff (4) and water project committee members (6) were received. The return rate on questionnaires is 100%, which is a good return rate from the study participants.

4.3 Demographic Characteristics of the Respondents

The researcher sought information of the respondents concerning; gender, age, marital status, level of education, years lived in the current location, distance from the water point and knowledge of the start of the nearest water point.

4.3.1 Gender Distribution of the Respondents

The researcher wanted to know the composition of the respondents in terms of male and female. This was important in that in rural community where the research was taking place, there are

varying gender roles in water use and management. The beneficiary responses are presented in the Table 4.1

Table 4.1 Gender Distribution of the Benefiaries

Categories	Frequency (*f*)	Percent (%)
Male	119	52.7
Female	107	47.3
Total	**226**	**100.0**

The results showed that 52.7% of the sampled beneficiaries were male while 47.3% were female. The number of male respondents was more than that of the female respondents. All the sampled committee members (chairperson and secretary) were all male. This indicates that most top decision makers in the water project committees were male. The project staff were 2 males (50%) and 2 females (50%).

4.3.2 Distribution of the Respondents by Age Categories

The researcher sought to establish the age of respondents. This was aimed at ensuring that the respondents were adults as planned. The results of the sampled beneficiary responses are presented in Table 4.2.

Table 4.2: Distribution of the Beneficiary Respondents by Age Categories

Age Categories In Years	Frequency (*f*)	Percent (%)
Below 21 years	0	0.0
21-35	117	51.8
36-45	49	21.7
46-55	28	12.4
56 and Above	32	14.2
Total	226	100.0

The Table 4.2 shows that beneficiaries aged between 21 years and 35 years were 51.8% and those aged 36 years and 45 years were 21.7%. The sampled beneficiaries aged between 46 years and 55 years were 12.4% and those aged 56 years and above were 14.2%. The results show that most of the sampled beneficiaries were aged between 21 years and 45 years at 73.5%. Those at the productive age of between 21 years and 55 years were 85.9%. There was no respondent beneficiary below 21 years of age.

The sampled water project committee members were aged over 56 years (66.7%), those aged between 21 years and 35 years (16.7%) and those aged between 36 years and 45 years were 16.7%. There was no committee member below 21 years of age. This means that majority of the water committee members were aged over 56 years. All the four staff were aged between 30 and 45 years.

4.3.3 Marital Status of the Respondents

The researcher sought to establish the marital status of the respondents. The results of the sampled beneficiary responses are presented in Table 4.3

Table 4.3 Marital Status of the Respondent Beneficiaries

Marital Status	Frequency (*f*)	Percent (%)
Single	86	38.1
Married	140	61.9
Total	226	100.0

The Table 4.3 shows that 61.9% of the respondent beneficiaries were married while 38.1% were single. The water committees (100%) and staff (4) were all married. This indicates that most of the respondents had families which may imply more use of water within the household.

4.3.4 Education Level of the Respondents

The researcher sought to know the level of education of the respondents. This was with the view that education level may affect understanding of the questions and hence the need for further

clarification where necessary. The responses of the sampled beneficiary are tabulated in Table 4.4.

Table 4.4: Respondents Beneficiaries' Level of Education

Highest level of education attained	Frequency (*f*)	Percent (%)
Not attended School	6	2.7
Primary	43	19.0
Secondary	136	60.2
Tertiary	41	18.1
Total	**226**	**100.0**

Most of the sampled beneficiaries (60.2%) had completed secondary school, 19.0% had completed primary, 18.1% had completed tertiary level and 2.1% had not attended school. This implies that most of the respondent understood the questions with little or no need for extra clarifications.

Majority of the sampled water project committee members had completed secondary education (83.3%); the rest has completed tertiary education (16.7%). This implies that most water committee members understood to read and write.

4.3.5 Years Lived in the Current Location

The researcher sought to establish the number of years the respondent lived in the current location. The number of years lived in the current location show the level of knowledge relating to the water project being investigated. The results of the sampled beneficiary are presented in Table 4.5.

Table 4.5: Categories of Years Beneficiaries Lived in the Current Location

Years lived by Beneficiaries in the Current Location.	Frequency (*f*)	Percent (%)
Less than 3 years	3	1.3
Between 3 and 5 years	18	8.0
Above 5 years	205	90.7
Total	**226**	**100.0**

Majority of the sampled beneficiaries (90.7%) had lived in the current location for more than five years, 8.0% had lived in the current location for between 3 years and 5 years, and 1.3% had lived in the current location for less than three years.

As for the sampled water project committee, 66.7% had lived in their current location for over 3 years and only 33.3% had lived there less than 3 years. Three staff (75%) have been working within Mwala for over 3 years. One staff has been in Mwala for less than 3 years. This implies that most of the respondents (Staff, beneficiaries and water project committee) had vast knowledge of the water projects and the changes in their context.

4.3.6 Distance from the Respondents Residence to the Water Point.

The researcher wanted to find out the proportion of beneficiaries and committee living within a kilometer from a water point. The reason is that, being closer to the water point means that the respondent may have participated in meetings and also vastly informed of the water project activities. The results of the sampled beneficiary responses are presented in Table 4.6.

Table 4.6 Distance from the Beneficiaries' Residence to the Water Point.

Distance to the nearest water point	Frequency (*f*)	Percent (%)
Less than 1 KM	224	99.1
More than 1 KM	2	0.9
Total	**226**	**100.0**

Most of the sampled beneficiaries 99.1% lived within a distance of 1 kilometer from the water point; while 0.9% lived more than one kilometer from a water point. All water project committees (100%) reported to live within one Kilometer from a water point. This indicates that majority of the respondents had information relating to the water point near the households.

4.3.7 Presence of the Respondents since the Construction of the Water Point

The researcher sought to establish the proportion of the respondents who were present since the start of construction of the water point near their household. The respondents who were present since the construction of the water point have a strong historical memory of the events that took place as they respond to questions. The results of responses by sampled beneficiaries are tabulated in Table 4.7.

Table 4.7: Presence since the Construction of the Water Point

Beneficiary Categories	Frequency (*f*)	Percent (%)
Present since the start of construction of water point	155	68.6
Not present since the start of construction of water point	71	31.4
Total	**226**	**100.0**

The Table 4.7 shows that 68.6% of the respondent beneficiaries were there since the construction of the water point and 31.4% were not there since the establishment of the water point.

All respondent water project committees (100%) reported to have been present since the start of construction of the water points. This finding shows that a significant majority of the respondents had information from the start of the water point near their household.

4.4 Influence of Formative and Summative Evaluation in Performance of Water Projects

The research question sought to examine the influence of formative and summative evaluation in the performance of water projects in Machakos County.

4.4.1 Respondents Participation in Project Baseline or Formative Evaluation

The sampled beneficiaries in Nzevea, Kyamutwii and Mango area of Mwala area were asked about their participation in the baseline at the beginning of the project. The results of the sampled beneficiary responses are presented in Table 4.8.

Table 4.8 Respondent Beneficiaries Participation during Project Baseline.

Participation during baseline	Frequency (*f*)	Percent (%)
Participated during baseline	134	59.3
Did not participate during baseline	92	40.7
Total	**226**	**100.0**

The findings in the Table 4.8 showed that majority 59.3% of the respondent beneficiaries participated in the baseline of the water projects, 40.7% did not participate. All respondent water project committee members (100%) and staff (75%) reported to have participated in the baseline. The participation in baseline was deemed important in influencing the start as well as implementation of the water project. Majority of the respondents (water users, water committees and staff) participated in the baseline meaning that they were also present when the water project started.

4.4.2 Participation in Project Baseline and Performance of Water Projects

The respondents were asked on whether their participation in project baseline influenced the performance of the water project. The results of the beneficiary responses are tabulated in Table 4.9.

Table 4.9: Beneficiaries Participation in Baseline and Influence on the Performance of Water Project

Categories	Frequency (*f*)	Percent (%)
Participation influences performance	130	57.5
Participation Does not influence performance	96	42.5
Total	**226**	**100.0**

As shown in Table 4.9, more than half (57.5%) of the sampled beneficiaries perceived that their participation in the baseline influenced the performance of water project, 42.5% thought otherwise. On the other hand, all sampled water project committees (100%) and staff (100%) perceived that participation in the baseline influence the performance of the water projects. These results show that majority of respondents (water users, water project committees and staff) perceive that participation in water project baseline contribute to the performance of the water project.

4.4.3 The Influence Beneficiary Participation in Baseline and Access to Water from the Water Point

The researcher sought to establish whether there is a relationship between beneficiary participation in baseline and access to water from the nearest water point. The result are presented in the Table 4.10

Table 4.10: Beneficiaries Participation during Baseline and Access to water

Do you currently fetch water from the water point?	Did you participate in the baseline for the water point?		
	Yes	No	**Total**
Yes	125(55.3%)	70 (31.0%)	195 (86.3%)
No	9(4.0%)	22(9.7%)	31(13.7%)
Total	**134(59.3%)**	**92(40.7%)**	**226(100.0%)**

Chi square p value 0.000 denoting significant difference and Phi value (φ) 0.246 indicating moderate association

Table 4.10 presents the relationship between beneficiary participation in the baseline and access to water from the water points. As indicated in Table 4.10, of all respondents who participated in the baseline (59.3%), a higher proportion reported having access to water from the water point (55.3%). Only a small proportion of those who participated in the baseline (4.0%) do not access water from the water point. Of all the beneficiaries (86.3%) who access water from the water point, a higher proportion participated in the baselines (55.3%) compared to (31.0%) who did not participate. This indicates participation of beneficiaries in water project baselines is linked to access to water from the water point. This finding also proved to be statistically significant (Chi square p value 0.000) with a moderate association between participation in the baseline and access to water (Phi value (φ) 0.246).

4.4.4 Satisfaction in Participation during Baseline

The study sought to find out the proportion of respondents who felt they were satisfied in participation during project baseline. The results of sampled beneficiary responses are presented in Table 4.11

Table 4.11: Beneficiaries Satisfaction in Participation during Baseline

Satisfaction of participation during baseline	Frequency (*f*)	Percent (%)
Satisfied	136	60.2
Not Satisfied	90	39.8
Total	**226**	**100.0**

The result showed that more than half (60.2%) of the respondent beneficiaries said that they were satisfied and 39.8% said they were not satisfied. The proportion of sampled beneficiaries who were satisfied (60.2%) was found to be higher than the proportion of those who were not satisfied with their participation during baseline (39.8%). The respondent water project committee (100%) and staff (75%) also were satisfied in their participation during baseline.

The research sought to find out the level of satisfaction of beneficiaries in a 5 point Likert scale (very satisfied (1), satisfied (2), neutral (3), unsatisfied (4) and very unsatisfied (5) and 25.7% were very satisfied; 43.4% were satisfied; 23.0% were unsatisfied and 8.0% were neutral. The respondents who were satisfied and very satisfied were more than two thirds (69.0%).

4.4.5 Participation in Summative Evaluation

The researcher sought to find out the proportion of respondents who participated during project summative evaluation. The results of sampled beneficiary responses are presented in Table 4.12.

Table 4.12: Participation of Beneficiaries in the Summative Evaluation

Participation in the project Summative evaluation	Frequency (*f*)	Percent (%)
Participated in project summative evaluation	151	66.8
Did not participate in project summative evaluation	75	33.2
Total	**226**	**100.0**

The Table 4.12 shows that 66.8% of the sampled beneficiaries participated in the summative evaluation at end of the water project while 33.2% did not participate. All the respondent water project committee members (100%) and staff (100%) also reported to have participated in the summative evaluation or end of project review. The results imply that a significant proportion of respondents participated in the summative evaluation.

4.4.6 Summative Evaluation and Performance Water Projects

The researcher sought to establish respondent's view of their participation in project summative evaluation and whether they perceive to have influence on the performance of water project. The results are tabulated in Table 4.13.

Table 4.13: Beneficiaries Participation in the Summative Evaluation and Performance of Water Project

Participation in Summative Evaluation and the performance of water project	Frequency (*f*)	Percent (%)
Participation in summative evaluation influenced performance of water project	128	56.6
Participation in summative evaluation did not influenced performance of water project	98	43.4
Total	**226**	**100.0**

The study results showed that a higher proportion of the sampled beneficiaries (56.6%) agreed that participation in end of project summative evaluation influenced the performance of water project, while 43.4% answered to the contrary.

All sampled water project committees (100%) and project staff (75%) perceived that participation in the water project summative evaluation influenced the performance of the water projects. These results show that majority of respondents (water users, water project committees and staff) perceive participation in summative evaluation contribute to the performance of the water projects.

4.4.7 The Influence Beneficiaries Participation in Evaluation and Access to Water from the Water Point

The researcher wanted to establish whether there is a relationship between participation in evaluation and access to water from the nearest water point. The results of sampled beneficiaries' responses are presented in the Table 4.14

Table 4.14: Beneficiaries Participation during Evaluation and Access to water from the water point

Do you currently fetch water from the water point?	**Did you participate in the evaluation for the water project?**		**Total**
	Yes	No	
Yes	141(62.4%)	54(23.9%)	195(86.3%)
No	10(4.4%)	21(9.3%)	31(13.7%)
Total	151(66.8%)	75(33.2%)	226(100.0%)

Chi square p value 0.000 denoting significant difference and Phi value (φ) 0.293 indicating moderate association

Table 4.14 presents the relationship between sampled beneficiaries' participation in the evaluation and access to water from the water points. As indicated in Table 4.14, out of 66.8% of the sampled beneficiaries participated in the evaluation, 62.4% of them reported having access to water from the water point. Only a small proportion of the beneficiaries who participated in the evaluation (4.4%) do not access water from the water point. Of all the sampled beneficiaries (86.3%) who access water from the water point, a higher proportion participated in the evaluation (62.4%) compared to those who did not participate (23.9%). This indicates participation of beneficiaries in water project evaluation is linked to access to water. This finding was also proved to be statistically significant (Chi square p value 0.000) with a moderate association between participation in the evaluation and access to water (Phi value (φ) 0.293).

4.4.8 Satisfaction in Participation during Summative Evaluation

The study sought to find out the proportion of respondents who felt they were satisfied in participation during project summative evaluation. The results of sampled beneficiaries' responses are tabulated in Table 4.15.

Table 4.15: Beneficiaries Satisfaction in Participation during Summative Evaluation

Satisfaction on participation in water project summative evaluation	Frequency (*f*)	Percent (%)
Satisfied - in participation during summative evaluation	147	65.0
Not Satisfied - in participation during summative evaluation	79	35.0
Total	**226**	**100.0**

A higher proportion of the sampled project beneficiaries were satisfied (65%) with their participation on the summative evaluation at the end of the project, while 35% were not satisfied. All the sampled water project committee (100%) and staff (100%) also reported to be satisfied in participation during summative evaluation or project review. The results indicates that majority of the respondents were satisfied with their participation in the summative evaluation. Participation in the end of project evaluation or the summative evaluation was regarded as necessary for review of the project achievement of results.

4.4.9 Level of Satisfaction in Participation during Project Summative Evaluation

The respondents were asked to rate their level of satisfaction on participation during project summative evaluation on a 5-point Likert scale as 1 -very satisfied, 2-satisfied 3 - neutral, 4-unsatisfied and 5 -very unsatisfied. The results of sampled beneficiaries' responses are presented in Table 4.16.

Table 4.16: Level of Satisfaction on Participation by Beneficiaries during Summative Evaluation

Level of satisfaction on participation during water project summative evaluation	Frequency (*f*)	Percent (%)
Very Satisfied	56	24.8
Satisfied	108	47.8
Neutral	5	2.2
Unsatisfied	55	24.3
Very unsatisfied	2	.9
Total	**226**	**100.0**

Over two thirds (72.6%) of the sampled beneficiaries were both satisfied (47.8%) and very satisfied (24.8%) with their participation during project summative evaluation. About a quarter of the adults were unsatisfied (24.3%) and very unsatisfied (0.9%). The project committees on the other hand were satisfied (50%) and very satisfied (50%). This results indicates that majority of the respondents were satisfied in participation during summative evaluation.

4.5 Influence of Financing Monitoring and Evaluation Activities on the Performance of Water Projects

The research question sought to examine the influence of financing monitoring and evaluation activities in the performance of water projects in Machakos County. The results are discussed in details in this section.

4.5.1 Financing Monitoring and Evaluation Activities and Performance of Water Projects

The respondents were asked whether financing of monitoring and evaluation activities was necessary for the performance of water project. The results of sampled beneficiaries' responses are presented in Table 4.17.

Table 4.17: Beneficiaries Responses on Financing of Monitoring and Evaluation Activities and the Performance of Water Projects

Financing of monitoring and evaluation activities is necessary in the performance of water project	Frequency (*f*)	Percent (%)
Financing of monitoring and evaluation is necessary for performance of water project	121	53.5
Financing of monitoring and evaluation is not necessary for performance of water project	105	46.5
Total	**226**	**100.0**

As shown in Table 4.17, 53.5% of the sampled beneficiaries agreed that financing of monitoring and evaluation activities is necessary for the performance while 46.5% disagreed that financing of monitoring and evaluation activities is not necessary for performance of water projects.

All the sampled water project committees (100%) and all project staff (100%) perceived that financing of monitoring and evaluation activities is necessary in the performance of water projects. The results show that majority of respondents (water users, water project committees and project staff) agreed that financing of monitoring and evaluation activities was necessary for the performance of water project.

4.5.2 The Influence of Financing Monitoring and Evaluation Activities and Access to Water from the Water Point.

The researcher wanted to establish whether there is a relationship between funding monitoring and evaluation activities and access to water from the nearest water point from beneficiary point of view. The results are presented in the Table 4.18.

Table 4.18: Beneficiaries Responses on Financing of Monitoring and Evaluation Activities and Access to Water from the Water Point

Do you currently fetch water from the water point?	Is financing of monitoring and evaluation activities necessary in the success of the water project?		
	Yes	No	**Total**
Yes	118(52.2%)	77(34.1%)	195(86.3%)
No	3(1.3%)	28(12.4%)	31(13.7%)
Total	**121 (53.5%)**	**105 (46.5%)**	**226 (100.0%)**

Chi square p value 0.000 denoting significant difference and Phi (φ) value 0.351 indicating strong association

Table 4.18 presents the relationship between financing of monitoring and evaluation activities and access to water from the water points. As indicated in the Table 4.18, of all the sampled beneficiaries who access water from water point (86.3%), a higher proportion (52.2%) perceive that financing of monitoring and evaluation activities is necessary for the success of water project. The respondent beneficiaries who reported access to water from the water point and do not perceive that financing of monitoring and evaluation activities was necessary for success of water project was 34.1%. The respondent beneficiaries who perceived that financing of monitoring and evaluation activities was necessary for success of water project but do not access water from the water point was very low (1.3%). The sampled beneficiaries who accessed water and perceived that financing of monitoring and evaluation activities was necessary for success of water projects (52.2%), which was higher than those who responded to the contrary (34.1%). This implies that most beneficiaries perceived financing of monitoring and evaluation activities was necessary for access to water. This result was also proved to be statistically significant (Chi square p value 0.000) with a strong association between perception on financing of monitoring and evaluation activities and access to water (Phi (φ) value 0.351). Adequate funding was noted in the interviews as an important component for performance of water projects.

4.5.3 Allocation of Enough Funding for Monitoring and Evaluation Activities.

The respondents were asked on whether monitoring and evaluation activities were allocated enough funding during the project period. The results of sampled beneficiaries' responses are tabulated in Table 4.19.

Table 4.19: Beneficiaries Responses on Allocation of Enough Funding for Monitoring and Evaluation Activities.

Allocation of enough funding for monitoring and evaluation activities	Frequency (*f*)	Percent (%)
Yes - Enough funding for M and E activities	101	44.7
No - Not enough funding for M and E activities	97	42.9
Don't know	28	12.4
Total	**226**	**100.0**

The results showed that 44.7% of the sampled beneficiaries felt that monitoring and evaluation activities were allocated enough funds. Almost similar proportion of the sampled beneficiaries 42.9% perceived that monitoring and evaluation activities were not allocated enough funding. A small proportion of the beneficiaries 12.4% reported not to know whether the funding of monitoring and evaluation activities was enough or not.

The project staff (75%) and all the sampled water project committees (100%) said the funding for monitoring and evaluation was sufficient throughout the project period. This can be interpreted to mean that sharing financial information and expectations with all stakeholders including beneficiaries was necessary.

4.5.4 Distribution of Funding for Monitoring and Evaluation Activities.

The sampled beneficiaries were asked on whether funding for monitoring and evaluation activities was distributed during the project implementation period. The results of sampled beneficiaries' responses are presented in Table 4.20.

Table 4.20: Beneficiaries Responses on Distribution of Funding for Monitoring and Evaluation Activities.

The funding for M&E was distributed throughout the project period	Frequency (*f*)	Percent (%)
The M&E funding was distributed	118	52.2
The M&E funding was not distributed	67	29.6
Don't know	41	18.1
Total	**226**	**100.0**

More than half of the sampled beneficiaries agreed that monitoring and evaluation funding (52.2%) was distributed and 29.6% disagreed that funding of monitoring and evaluation activities was distributed.

Measure of association was done on distribution of monitoring and evaluation funding versus access to water as indicator of performance and the results showed a strong association Cramer's' V coefficient (φc) of 0.396.

4.5.5 Satisfaction on the Level of Funding of Monitoring and Evaluation Activities

The study sought to find out the proportion of respondents who were satisfied on the level of funding of monitoring and evaluation activities. The result of sampled beneficiaries' responses are tabulated in Table 4.21.

Table 4.21: Beneficiary Satisfaction on the Level of Funding of Monitoring and Evaluation Activities

Satisfaction on the Level of Funding of Monitoring and Evaluation Activities	Frequency (*f*)	Percent (%)
Satisfied with the level of funding of M&E activities	142	62.8
Not satisfied with the level of funding of M&E activities	84	37.2
Total	226	100.0

A significant proportion of the sampled beneficiaries were satisfied 62.8% with the level of participation on the level of funding of monitoring and evaluation activities, while 37.2% were not satisfied. Two project staff (50%) and majority of the sampled water committee (83.3%) reported to be satisfied with the level of funding.

Measure of association was done on beneficiaries' satisfaction on the level of funding of monitoring and evaluation activities and access to water from the nearest water point as indicator of performance, the results showed a strong association Phi coefficient (φ) at 0.465.

4.5.6 Level of Satisfaction on the Level of Funding of Monitoring and Evaluation Activities

The beneficiaries rated their level of satisfaction on the level of funding of monitoring and evaluation activities on a 5-point Likert scale as 1 -very satisfied, 2-satisfied 3 - neutral, 4-unsatisfied and 5 -very unsatisfied. The results are presented in Table 4.22.

Table 4.22: Level of Satisfaction by Beneficiaries on the Level of Funding of Monitoring and Evaluation Activities

Level of satisfaction on the level of funding of monitoring and evaluation activities	Frequency (*f*)	Percent (%)
Very Satisfied	60	26.5
Satisfied	101	44.7
Neutral	6	2.7
Unsatisfied	55	24.3
Very unsatisfied	4	1.8
Total	226	100.0

Over two thirds of the sampled beneficiaries (71.2%) were both satisfied (44.7%) and very satisfied (26.5%) on the level of funding of monitoring and evaluation activities. About a quarter of the respondent beneficiaries (24.3%) were unsatisfied and 1.8% were very unsatisfied.

Project staff (75%) were satisfied and all committees (100%) were satisfied (50%) and very satisfied (50%) with the level of funding. The results means majority of all respondents were satisfied with the level of funding of monitoring and evaluation activities.

4.6 Influence of Participatory Data Collection on the Performance of Water Projects

The research question sought to examine the influence of participatory data collection on the performance of water projects in Nzevea, Kyamutwii and Mango area of Mwala Ward of Machakos County.

4.6.1 Participation in Data Collection.

The respondents were asked about their participation in data collection during implementation of water project near where they live. The results of beneficiaries' responses are tabulated in Table 4.23.

Table 4.23: Beneficiaries Participation in Data Collection.

Participated in data collection during project implementation	Frequency (*f*)	Percent (%)
Participated in data collection	126	55.8
Did not participated in data collection	100	44.2
Total	**226**	**100.0**

Table 23 shows more than half of the sampled beneficiaries (55.8%) participated in data collection, 44.2% did not participate in data collection. The project staff (75%) and all sampled committees members (100%) reported to have participated in the data collection. The results indicate that majority of the respondents participated in data collection.

All respondents were asked about the number of times they participated in data collection for the water project. The results of responses by beneficiaries are presented in Table 4.24.

Table 4.24: Number of Times the Beneficiaries Participated in Data Collection

Number of Times the Project Beneficiary Participated in Data Collection	Frequency (*f*)	Percent (%)
Not participated	79	35.0
Once	24	10.6
Between 2 and 3 times	114	50.4
More than 3 times	9	4.0
Total	**226**	**100.0**

The results show that 65.0% of the sampled beneficiaries participated in data collection during project implementation at least once. About a third, 35% did not participate in data collection at all. Those who participated once were 10.6%, those who participated two or three times were 50.4% and those who participated more than 3 times were only 4.0%.

The project staff (75%) and the sampled water project committee (100%) reported to have participated more than three times. The results show that most respondents participated during data collections.

4.6.2 Participation of Beneficiaries in Data Collection and Water Project Performance

The respondents were asked whether participation in data collection was necessary for the performance of water project. The results for the beneficiaries' responses are tabulated in Table 4.25.

Table 4.25: Participation of Beneficiaries in Data Collection and Water Project Performance

Participation in data collection is important in the water project performance	Frequency (*f*)	Percent (%)
Yes - it is important	162	71.7
No - it is not important	64	28.3
Total	**226**	**100.0**

Significant proportion of the sampled beneficiaries (71.7%) agreed that data collection influences water project performance, 28.3% denied that data collection influences project performance.
On the other hand, all staff (100%) and all sampled water project committees (100%) agreed that data collection is necessary in the performance of water projects. The results show that majority of all respondents (project staff, water users and water project committees) agreed that data collection was necessary for the performance of water project.

4.6.3 The Influence Participation in Data Collection and Access to Water from the Water Point

The researcher wanted to establish whether there is a relationship between participation of beneficiaries in data collection and access to water from the nearest water point. The results are presented in the Table 4.26.

Table 4.26: Beneficiaries Participation during Data Collection and Access to Water from the Water Point

Do you currently fetch water from the water point?	Did you participate in the Data Collection for the water project?		Total
	Yes	No	
Yes	124(54.9%)	71(31.4%)	195(86.3%)
No	2(0.9%)	29(12.8%)	31(13.7%)
Total	**126 (55.8%)**	**100 (44.2%)**	**226 (100.0%)**

Chi square p value 0.000 denoting significant difference and Phi value (φ 0.396 indicating strong association

Table 4.26 presents the relationship between beneficiaries' participation in the data collection and access to water from the water points. As indicated in Table 4.26, of all the sampled beneficiaries that participated in the data collection (55.8%), majority of them (54.9%) reported having access to water from the water point. Only a small proportion of beneficiaries who participated in the data collection (0.9%) do not access water from the water point. Of all the sampled beneficiaries who access water (86.3%) from the water point, a higher proportion of participated in the data collection (54.9%) compared to (31.4%) who did not participate in data collection. This indicates participation of beneficiaries in data collection during water project implementation is linked to access to water. These findings were also proved to be statistically significant (Chi square p value 0.000) with a strong association between participation in the data collection and access to water (Phi value (φ) 0.396). These results were also confirmed by interviews as participation of all stakeholders in all aspect of project was reported by many respondents as necessary for performance of water projects.

4.6.4 Number of times Project Staff and Stakeholders Participated in Data Collection

The study sought to understand the number of times project staff and stakeholders participated in data collection from the beneficiary perspective. The results of beneficiaries' responses are presented in the Table 4.27.

Table 4.27: Beneficiaries Responses on the Number of Times Project Staff and Stakeholders Participated in Data Collection

Number of times Project Staff and Stakeholders Participated in Data Collection	Frequency (*f*)	Percent (%)
Not participated	71	31.4
Once	26	11.5
Between 2 and 3 times	123	54.4
More than 3 times	6	2.7
Total	**226**	**100.0**

The sampled beneficiaries reported that most project staff and stakeholders participated in data collection twice or thrice (54.4%), once (11.5%) and more than three times (2.7%). About a third (31.4%) reported not to have participated at all. The results indicate that beneficiaries perceive that most of the staff and stakeholders participated twice or thrice in data collection. The proportion of the sampled beneficiaries who participated between two and three times was the majority (54.4%). Project staff (75%) and water project committees (100%) on the other hand reported to have participated more than three times.

Measure of association was done on the number of times respondents participated in water project data collection and access to water from the nearest water point as indicator of performance, the results showed a strong association Cramer's V coefficient(φc) of 0.382.

4.6.5 Satisfaction with the Level of Participation in Data Collection

The study sought to find out the proportion of respondents who were satisfied on the level of participation in data collection. The results on beneficiaries response on satisfaction is presented in Table 4.28.

Table 4.28: Beneficiaries Satisfaction on the Level of Participation in Data Collection

Satisfied with the level of participation in data collection for water project	Frequency (*f*)	Percent (%)
Yes - Satisfied with the level of participation	135	59.7
No - Not satisfied with the level of participation	91	40.3
Total	**226**	**100.0**

A significant proportion of sampled beneficiaries (59.7%) were satisfied with the level of participation on data collection for the water project, while 40.3% reported not being satisfied. All project staff (100%) and all water project committees (100%) reported being satisfied with their participation in data collection. These findings show that majority of the respondents were satisfied with their involvement in data collection.

The research rated the level of satisfaction of the sampled beneficiaries' participation in project data collection on a 5-point Likert scale as 1-very satisfied, 2-satisfied 3- neutral, 4-unsatisfied and 5 -very unsatisfied. The results of beneficiaries' responses are presented in Table 4.29.

Table 4.29: Beneficiaries' Level of Satisfaction in Participation in Project Data Collection

Level of satisfaction in participation in project data collection	Frequency (*f*)	Percent (%)
Very Satisfied	63	27.9
Satisfied	112	49.6
Neutral	13	5.8
Unsatisfied	38	16.8
Total	**226**	**100.0**

More than three quarters of all sampled beneficiaries (77.5%) were both satisfied (49.6%) and very satisfied (27.9%) on the level of participation in project data collection. A smaller proportion of the sampled beneficiaries were unsatisfied (16.8%) and neutral (5.8%).

Project staffs (75%) were satisfied and the sampled water project committees reported being satisfied (50%) and very satisfied (50%) with the level of participation in data collection. The results imply that majority of the respondents were satisfied and very satisfied with the level of participation in data collection.

4.7 Influence of Skilled Human Resource on the Performance of Water Projects

The research question sought to establish the influence of skilled human resource in monitoring and evaluation on the performance of water projects, Machakos County.

4.7.1 Skills of Project Staff in Monitoring and Evaluation and Performance of Water Project

The sampled beneficiaries were asked about the skills of water project staff in monitoring and evaluation and its influence on the performance of water project. The results are presented in Table 4.30.

Table 4.30: Beneficiaries' Responses on Skills of Project Staff in Monitoring and Evaluation and Performance of Water Project

Skills of project staff in monitoring and evaluation influencing performance of water project	Frequency (*f*)	Percent (%)
Yes – Skills in M&E influence performance of water projects	172	76.1
No – Skills in M&E does not influence performance of water projects	54	23.9
Total	**226**	**100.0**

Table 4.30 shows that majority of the sampled beneficiaries (76.1%) agreed that skills of water project staff in monitoring and evaluation influenced the performance of water projects. About a quarter of the respondent beneficiaries (23.9%) disagreed. The results indicate that more of the beneficiaries agreed that skills of the project staff in monitoring and evaluation influenced performance of water project.

4.7.2 Project Staff Skill Level in Monitoring and Evaluation

The sampled beneficiaries rated the capacity of the project staff in monitoring and evaluation on a 5-point Likert scale as; 1 -very good, 2- good 3 - fair, 4- poor and 5 -very poor. The results are presented in Table 4.31.

Table 4.31: Beneficiaries Responses on Level of Skills of Project Staff in Monitoring and Evaluation

The skills of project staff in monitoring and evaluation for the success of the project	Frequency (*f*)	Percent (%)
Very good	81	35.8
Good	97	42.9
Fair	38	16.8
Poor	8	3.5
Very Poor	2	.9
Total	**226**	**100.0**

Majority of the sampled beneficiaries revealed that most staff had good (42.9%) and very good skills (35.8%). This represents a majority (78.7%) of all the beneficiary responses. This may also indicate the level of trust the beneficiaries or the water users have in the capacity of the project staff to deliver on the project objectives.

Most of the sampled project committee members (83.3%) and all staff (100%) confirmed to have received some training in the past in monitoring and evaluation. This showed that there were skills in monitoring and evaluation among staff and water project committees.

4.7.3 The Influence of Skills in Monitoring and Evaluation and Access to Water.

The researcher wanted to establish whether there is a relationship between skills of project staff in monitoring and evaluation as reported by beneficiaries and the access to water from the nearest water point. The results are presented in the Table 4.32.

Table 4.32: Beneficiaries' Responses on Skills of Project Staff in Monitoring and Evaluation and Access to Water from the Water Point

Do you currently fetch water from the water point?	Skills of project staff in monitoring and evaluation contributes to performance of the water project.		Total
	Yes	No	
Yes	171(75.7%)	24(10.6%)	195(86.3%)
No	1(0.4%)	30(13.3%)	31(13.7%)
Total	**172(76.1%)**	**54(23.9%)**	**226(100.0%)**

Chi square p value 0.000 denoting significant difference and Phi value 0.681 indicating strong association

Table 4.32 presents the relationship between the perceived skills of project staff in monitoring and evaluation influencing performance and the access to water from the water points as perceived by the sampled beneficiaries. Of all the sampled beneficiaries who accessed water from the water point (86.3%), a higher proportion perceives that skills of project staff in monitoring and evaluation contributes to the performance of water project (75.7%) compared to (10.6%) whose view were to the contrary.

As indicated also in Table 4.32, out of 76.1% of the beneficiaries who perceived that skills of project staff in monitoring and evaluation contributes performance of water project, 75.7% reported having access to water and only a very small proportion (0.4%) do not access water from the water point. This shows that water users perceived skills of project staff in monitoring and evaluation related to access to water. All project staff (100%) and all water project committees (100%) confirmed that skill in monitoring and evaluation was necessary for performance of water projects.

The results was proved to be statistically significant (Chi square p value 0.000) with a strong association between skills of project staff in monitoring and evaluation and access to water (Phi value (φ) 0.681). This finding was also confirmed by interview results which rated skills as highly necessary for effective implementation of water projects.

4.8 Performance of Water Project

The researcher sought to find out the status of water points where beneficiaries fetch water from. Two element were investigated, the functionality of the water point throughout the year and the presence of a managing structure or a management committee in the nearest water point.

4.8.1 The Functionality of the Nearest Water Point

The researcher wanted to find out the functionality of the water points by asking the beneficiaries whether they fetch water from the nearest water point. This is an indicator that the water point is functional. The results are presented in Table 4.33.

Table 4.33: Beneficiaries Responses on the Functionality of the Nearest Water Point

Water is fetched from the water point.	Frequency (*f*)	Percent (%)
Yes –Water is fetched from the water point	195	86.3
No - Water is not fetched from the water point	31	13.7
Total	226	100.0

Most of the sampled beneficiaries (86.3%) currently fetch water from the water point near them. A smaller proportion (13.7%) said that they don't fetch water from the water point near them. Project Staff (75%) noted that all the water points are functional and water is available. This was also confirmed by the sampled water committee members (100%). Some beneficiaries however noted that at times due to electric power outage in some water points, they are forced to get water elsewhere.

4.8.2 Availability of Water from the nearest Water Point throughout the Year

The study sought to know the availability of water throughout the year from the nearest water point. The reason was to find out the sustainability of supply of water from the water points. The results are tabulated in Table 4.34.

Table 4.34: Beneficiaries Responses on Availability of Water from the nearest Water Point throughout the Year

Water Availability from the nearest water point throughout the Year.	Frequency (*f*)	Percent (%)
Yes - Throughout the year	172	76.1
No - Sometimes in the year (less than 12 months)	46	20.4
No access to water	8	3.5
Total	226	100.0

Majority of the sampled beneficiaries (76.1%) reported that water was available throughout the year, 20.4% reported that water was available for less than 12 months (sometimes in the year) and 3.5% reported not to access water. The research confirmed from project staff (75%) and water project committees (100%) that all the water points are functional and water is available. This finding shows that majority of the respondents (staff, committee and beneficiaries) reported the availability of water throughout the year.

4.8.3 Presence of a Committee Managing the Nearest Water Point

The respondents were asked whether there was a committee managing the nearest water point. The results from the beneficiaries are shown in the Table 4.35.

Table 4.35: Beneficiaries Responses on Presence of a Committee Managing the Nearest Water Point

Presence of committee managing water point.	Frequency (*f*)	Percent (%)
Yes – There is a committee	180	79.6
No – There is no committee	41	18.1
Don't Know	5	2.2
Total	226	100.0

Most of the sampled beneficiaries (79.6%) were aware and agreed that the water points had committees managing it, while 18.1% denied the existence of a managing committee and 2.2% were not aware. All project staff (100%) confirmed and water project committee (100%) confirmed the presence of the committees in all water projects. Majority of all respondents (project staff, water project committee and water users) confirmed that water points had water management committees which is a sign of water project continuity or sustainability.

CHAPTER FIVE

SUMMARY, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The study sought to investigate the influence of monitoring and evaluation on the performance of water projects in Kenya: a case of Mwala water project, Machakos County. The data was collected from respondents in three communities in Nzevea, Kyamutwii and Mango in Mwala Ward of Machakos County. The data collected, analysed using SPSS and presented using frequency tables and percentages. The summary of findings, the conclusions reached and recommendations are discussed in this chapter. The chapters also suggest spheres for further research.

5.2 Summary of findings

The main research instrument was the questionnaire which received 100% return rate. The study results showed that 52.7% of the sampled beneficiaries were male while 47.3% were female. All the sampled project committee members were male and project staff were males (50%) and females (50%). Most of the sampled beneficiaries (51.8%) were aged between 21 years and 35 years, those aged 36 years and 45 years were 21.7%, those aged between 46 years and 55 years were 12.4%. Those aged 56 years and above were 14.2%.

Majority of the sampled beneficiaries (61.9%) were married while 38.1% were single. Most of the sampled beneficiaries (60.2%) had completed secondary school, 19.0% had completed primary, 18.1% had completed tertiary level and 2.1% had not attended a formal school. All the sampled water project committee members had completed secondary (83.3%) and tertiary level (16.7%) of education.

The study found out that 90.7% of sampled beneficiaries had lived in the current location for more than five years, 8.0% had lived in the current location for between three years and five years, and 1.3% had lived in the current location for less than three years. Three staff (75%) have been working within Mwala for over 3 years. Most of the sampled beneficiaries lived within a

distance of 1 kilometer from the water point; 99.1% while 0.9% lived more than one Kilometer from a water point.

Most of the sampled beneficiaries reported to have been there since the start of the construction the water points (68.6%). About a third of the sampled beneficiaries (31.4%) were not there since the establishment of the water points. This implies that a significant majority of the respondents had information about the water projects.

The study revealed that 59.3% of the sampled beneficiaries participated in project baseline. All respondent water project committee members (100%) and staff (75%) reported to have participated in the baseline. All water project committees (100%) and project staff (100%) perceived that participation in the formative evaluation influenced the performance of the water projects. Majority of the beneficiaries (57.5%) perceived that their participation in the baseline influenced the performance of water project. The participation of beneficiaries in water project formative evaluation or baseline was tested and found to be linked to access to water from the water point. This result was also proved to be statistically significant (Chi square p value 0.000) with a moderate association between participation in the baseline and access to water (Phi value (φ) 0.246).

The study results showed that 66.8% of sampled beneficiaries participated in the summative evaluation for the water project. All the sampled water project committee members (100%) and project staff (100%) also reported to have participated in the summative evaluation or end of project review. A significant majority (56.6%) of the beneficiaries agreed that participation in summative evaluation influenced the performance of water project, while 43.4% answered to the contrary. All sampled water project committees (100%) and project staff (75%) perceived that participation in the water project summative evaluation influenced the performance of the water projects. This research revealed that participation of beneficiaries in summative evaluation influences access to water. This finding was also proved to be statistically significant (Chi square p value 0.000) with a moderate association between participation in the evaluation and access to water (Phi value (φ) 0.293).

The study found out that majority of the sampled beneficiaries (53.5%), all the sampled water project committees (100%) and all staff (100%) agreed that financing of monitoring and evaluation activities is necessary for the performance of water projects. A significant majority of the beneficiaries perceive financing of monitoring and evaluation activities is necessary for the access to water. This result was also proved to be statistically significant (Chi square p value 0.000) with a strong association between perception on financing of monitoring and evaluation activities and access to water at Phi (φ) value 0.351. Distribution of monitoring and evaluation funding and access to water as indicator of performance also showed a strong association Cramer's' V coefficient (φc) at 0.396.

More than half of the sampled beneficiaries (55.8%) participated in data collection during water project period. The project staff (75%) and all sampled committees members (100%) reported to have participated in the data collection. Majority of the beneficiaries participated between two or three times (50.4%). The project staff (75%) and the sampled water project committee (100%) reported to have participated more than three times. A significant proportion of the sampled beneficiaries (71.7%) agreed that participation in data collection influences water project performance. All project staff (100%) and all sampled water project committees (100%) agreed that data collection is necessary in the performance of water projects. The participation of beneficiaries in data collection during water project implementation was found to influence access to water as an indicator of performance. These results was also proved to be statistically significant (Chi square p value 0.000) with a strong association between participation in the data collection and access to water (Phi value (φ) 0.396). The number of times beneficiaries participated in project data collection and access to water from water points showed a strong association Cramer's V coefficient(φc) = 0.382).

Majority of the sampled beneficiaries reported that most project staff had appropriate skills (78.7%). Most of the sampled project committee members (83.3%) and all staff (100%) confirmed to have received some training in the past in monitoring and evaluation. This showed that there were skills in monitoring and evaluation among staff and water project committees.
Majority of the beneficiaries (76.1%) also agreed that skills of water project staff in monitoring and evaluation influenced the performance of water projects. Of all the respondents who

accessed water from the water point (86.3%), a higher proportion perceives that skills of project staff in monitoring and evaluation contributes to the performance of water project (75.7%) compared to (10.6%) whose view were to the contrary. The influence of skills and access to water was proved to be statistically significant (Chi square p value 0.000) with a strong association between skills of project staff in monitoring and evaluation and access to water (Phi value (φ) 0.681). All project staff (100%) and all water project committees (100%) confirmed that skill in monitoring and evaluation was necessary for performance of water projects.

Majority of the sampled beneficiaries (76.1%) agreed that water was available throughout the year, 20.4% reported that water was available for less than 12 months (sometimes in the year) and 3.5% reported not to access water. The research confirmed from project staff (75%) and water project committees (100%) that all the water points are functional and water is available. Most sampled beneficiaries (79.6%) reported that the water points have committees managing the water points. Project Staff (100%) also confirmed that all the water project have committees. Access to water throughout the year and presence of a management committee are two indicators of functionality and sustainability of water projects.

5.3 Discussions of the findings

A significant majority of the sampled beneficiaries 57.5% perceived that their participation in the baseline influenced the performance of water project while 42.5% thought otherwise. The participation of beneficiaries in water project baselines was tested and found to be linked to access to water from the water point. This finding also proved to be statistically significant (Chi square p value 0.000) with a moderate association between participation in the baseline and access to water (Phi value (φ) 0.246). It is clear that formative evaluation is moderately associated to access to water as an indicator of performance of water projects.

The study results also showed that 56.6% of the sampled beneficiaries agreed that participation in summative project evaluation influenced the performance of water project, while 43.4% answered to the contrary. All sampled water project committees (100%) and project staff (75%) perceived that participation in the water project summative evaluation influenced the performance of the water projects. Of all the sampled beneficiaries (86.3%) who access water from the water point, a higher proportion participated in the evaluation (62.4%) compared to

those who did not participate (23.9%). This indicates participation of beneficiaries in water project evaluation is linked to access to water. This finding was also proved to be statistically significant (Chi square p value 0.000) with a moderate association between participation in the evaluation and access to water (Phi value (φ) 0.293). It is clear that summative evaluation is moderately associated to access to water as an indicator of performance of water projects.

These results in terms of participation in formative and summative evaluations validates the contribution by Jones et al (2009) and Chambers (2009), in terms of support and inclusion of stakeholders including high profile individuals and agents in evaluations. The same inclusion and meaningful participation of stakeholders in early stages of evaluation process is also fronted by Donaldson (2003). This research also agrees with Proudlock (2009) who established that the process of evaluation in particular analysis and interpretation of results can be improved through the participation of intended beneficiaries who are the primary stakeholders and the best judges of their own situation.

The research showed a majority of sampled beneficiaries (53.5%), project staff (100%) and water project committee (100%) agreed that financing of monitoring and evaluation activities is necessary for the performance of water projects. The results show that majority of respondents (water users, water project committees and project staff) agreed that financing of monitoring and evaluation activities was necessary for the performance of water project. The sampled beneficiaries who accessed water and perceived that financing of monitoring and evaluation activities was necessary for success of water projects (52.2%), which was higher than those who responded to the contrary (34.1%). This results was also proved to be statistically significant (Chi square p value 0.000) with a strong association between perception on financing of monitoring and evaluation activities and access to water at Phi (φ) value 0.351. This finding is in agreement with Gyorkos (2003), that a monitoring and evaluation budget need to be developed and included in the overall project budget in order to provide the monitoring and evaluation function its due recognition in its place in project management. The findings also agree with Maxx (2005), who denoted that financing monitoring and evaluation should ensure proper allocation and distribution of funds through a reliable and a transparent channel.

This study agrees to having funds for monitoring and evaluation distributed appropriately as it showed strong association with performance of water project (Cramer's V coefficient (φc) 0.396). The results agreed with Maxx (2005), who denoted that financing monitoring and evaluation should ensure proper allocation and distribution of funds through a reliable and a transparent channel.

The study results showed a significant proportion of beneficiaries (71.7%), project staff (100 %) and 100% of project committee members agreed that participation data collection influenced the performance of water project. The participation of sampled beneficiaries in data collection during water project implementation was found to influence access to water. This finding was also proved to be statistically significant (Chi square p value 0.000) with a strong association between participation in data collection and access to water as an indicator of performance (Phi value (φ) 0.396). The number of times sampled beneficiaries participated in project data collection and access to water showed a strong association (Cramer's V coefficient φc 0.382). This finding agrees with Rogers (2008) who advocates for multi-stakeholders dialogues in the data collection, hypothesis testing as well as in interventions in order to secure greater participation. This research also agrees with Sandman (2003) where an organization of technical experts can monitor together with the community to provide a high degree of technical credibility. Similarly, community may be involved in developing terms of reference and selection process (International Finance Corporation, 2006). The study also agrees with Gunningham (2004), who denoted that participatory data collection for an exploration or prefeasibility stage could be fairly simple, focused on characterizing the social and natural environment before the onset of the new project.

The study results showed that 76.1% of the beneficiaries agreed that skills of water project staff in monitoring and evaluation influenced the performance of water projects. The influence of skills and access to water was proved to be statistically significant (Chi square p value 0.000) with a strong association between skills of project staff in monitoring and evaluation and access to water (Phi value (φ) 0.681). All project staff (100%) and all water project committees (100%) confirmed that skill in monitoring and evaluation was necessary for performance of water projects. This result agree with Maxx (2005), that human resources management is very

important in project management especially in effective monitoring and evaluation by ensuring skilled and experienced personnel. Jones et al (2009) said that evaluations need to be carried out by people with adequate and relevant skills, sound methods and adequate resources as well as transparency in order to secure their quality. Vanessa and Gala (2011) stated the need to train the personnel and enhance expertise of the organization in conducting evaluations. These proponents disclose the importance of skills and capacity in ensuring monitoring and evaluation is done correctly which agrees with the results of this study. The results also agrees with Marc Holzer et al (2008), who pointed out that organizations need to recruit employees with appropriate skills and then grant them with systematic education and ongoing worker assistance.

5.4 Conclusions of the Study

The main purpose of the study was to investigate the influence of monitoring and evaluation on the performance of water projects in Kenya, with a specific focus on Mwala Water Project in Machakos County. The objectives of the study were; to assess the influence of formative evaluation on the performance of water projects, to establish the influence of summative evaluation on the performance of water projects, to establish the influence of financing monitoring and evaluation activities on the performance of water projects, to determine how participatory data collection influence performance of water project, and to establish the influence of skilled human resource in monitoring and evaluation on the performance of water projects. Considering the findings and results of the study; several conclusions were made.

The research resolved that participation in both formative evaluation and summative evaluation had moderate influence in the performance of water projects in Mwala Ward. These two variables compared to the other three independent variables were the least in terms of strength of association to performance of water projects in Mwala Ward.

The study determined that financing of monitoring and evaluation activities was necessary for the performance of water projects in Mwala Ward. The association of funding monitoring and evaluation activities and performance was found to be strong. It was also important that the funding of monitoring and evaluation was distributed throughout the project period.

The research also concluded that participatory data collection strongly influenced water project performance in Mwala Ward. Likewise, the frequency of data collection also had a strong influence on the performance of water projects Mwala Ward.

The study revealed that performance of the water project within Mwala Ward was strongly associated to the skills of water project staff in monitoring and evaluation. It can be concluded that when the staff running the water projects have the necessary skills and experience then they are in a good position to lead and influence performance of the water projects. This variable scored the highest in terms of the perceived association to performance of water projects.

5.5 Recommendations of the Study

Based on conclusions drawn from the study, the following recommendations are made;

Stakeholders and water users participation in both formative evaluation and summative evaluation influenced performance of water projects moderately. It is therefore, recommended that allocation of resources to formative evaluation and summative evaluation can be maintained at moderate level to pave way for more resources in other interventions strongly influencing water project performance.

All project stakeholders including intended water users should be informed more on importance of their role during formative evaluation and summative evaluation. This will help some of the participants to appreciate the importance of their involvement right from the start to the end of the water project.

The study recommends more financing of monitoring and evaluation activities as necessary for the performance of water projects in Mwala Ward. The funding for monitoring and evaluation activities should also be distributed throughout the project period.

Participatory data collection strongly influences performance of water projects and hence should be encouraged in water projects in Mwala Ward. The data collection should be made regular as it strongly influenced the performance of water projects. This will also help project leadership and stakeholders to continually make informed decisions based on facts.

The study showed that skills of the human resource or personnel in monitoring and evaluation strongly influenced the performance of water projects in Mwala Ward. This research therefore recommends empowering of staff with necessary courses and on job trainings on monitoring and evaluation for enhanced performance of water projects.

The hiring managers should include experience and skills in monitoring and evaluation when recruiting new project personnel for water projects. This should be considered as a priority since it scored very high in terms of influence on the performance of water projects.

5.6 Suggestions for Further Studies

This research recommends further studies on;

The influence of technical data collection on the overall performance of water projects. This will add to the findings of this study on whether collection of technical data which can only be done by experts contributes to performance of water projects.

The influence of process monitoring on the performance of water projects. This study will further deepen the element of monitoring especially that water projects involves a lot of steps that also require statutory approvals, for example environmental impact assessment and land ownership concerns.

The influence of partnership and stakeholder participation on the performance of water projects. This will further enrich the findings on participation by stakeholders in the various stages of project implementation.

The influence of gender on the performance of water projects. In rural Kenya, water is mostly fetched by women while in most cases the committees are led mostly by men. This study will bring out the dimension of roles of both men and women in the establishment of water project hence enhancing knowledge on gender and participation.

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APPENDICES

Appendix I: Transmittal Letter

Paul Kipkoech Titomet

P.O Box 712 – 10400

Nanyuki.

0725-666 318.

Dear sir/madam,

Ref: Request for Your Participation in a Study about Water Projects.

I am a postgraduate student at the University of Nairobi pursuing a Master of Arts (MA) Degree in Project Planning and Management (PPM). As part of the requirement for the award of the MA Degree in PPM; I am conducting a study on the 'Influence of Monitoring and Evaluation on the Performance of Water Projects in Kenya: A Case of Mwala Water Project, Machakos County'.

It is my pleasure to inform you that the water projects in Nzevea, Kyamutwii and Mango of Mwala area, will be my main area of interest and therefore I congratulate you for your selection to participate. I kindly request you to cooperate and assist me to correctly fill the questionnaires.

Participation in this study is absolutely voluntary and the information you give will be kept confidential and strictly used for academic purpose of this study. I assure you that your identity together with that of your family will remain anonymous.

I am grateful for your support and cooperation.

Yours Sincerely,

Paul Kipkoech Titomet
University of Nairobi

Appendix II: Research Instruments

(A) Questionnaire for Project Beneficiary

Ward:_____ Village: _____

1. Age category	21 to 35 [ ] 36 to 45 [ ] 46 to 55 [ ] 56 and above [ ]
2. Gender of Respondent	Male [ ] Female [ ]
3.Highest Educational Level attained	Non formal education [ ] Primary [ ] Secondary [ ] Tertiary [ ]
4. Marital status	Single [ ] Married[ ] Divorced [ ] Widow/Widower [ ]
5. How many years have you lived in your current homestead.	Less than 3 years [ ] Between 3 and 5 years [ ] Above 5 years [ ]
6 How far is the nearest water point (where you fetch water from?)	Less than 1 KM **[ ]** More than 1 KM **[ ]**
7What is the name of the nearest water point/project	{_____} (Nzevea, Kyamutwii, Mango)
8 Were you there since the start of construction of the water point	Yes **[ ]** No **[ ]**
9 Did you participate in a baseline meeting at the start of construction of the water project?	Yes **[ ]** No **[ ]**
10 In your view did your participation and that of the community in this	Yes **[ ]** No **[ ]**

meeting contribute to the performance of the water project?

11 Are you satisfied with your level of participation at the start of the water project? Yes **[ ]** No **[ ]**

12 How will you rate your level of satisfaction on your participation at the start of the water project?

- Very unsatisfied **[ ]**
- Unsatisfied **[ ]**
- Neutral **[ ]**
- Satisfied **[ ]**
- Very Satisfied **[ ]**

13 Did you participate in the review meeting at the end or after the completion of the water point? Yes **[ ]** No **[ ]**

14 In your view did your participation and that of the community at the end of the project contribute to the performance of the water project? Yes **[ ]** No **[ ]**

15 Are you satisfied with the level of participation at review meeting at the end or after the completion of the water project? Yes **[ ]** No **[ ]**

16 How will you rate your level of satisfaction on your participation at the end or after the completion of the water project?

- Very unsatisfied **[ ]**
- Unsatisfied **[ ]**
- Neutral **[ ]**
- Satisfied **[ ]**
- Very Satisfied **[ ]**

17 Is financing of monitoring and evaluation activities necessary in the success of the water project Yes **[ ]** No **[ ]**

18 In your opinion was monitoring and evaluation activities allocated enough funding during construction of the water project. Yes **[ ]** No **[ ]** Don't Know **[ ]**

19 Was distribution of funds for monitoring and evaluation activities allocated all throughout the life of the water project.

- Yes [ ]
- No [ ]
- Don't know [ ]

Explain Your Answer_____

20 Are you satisfied with the level of funding of monitoring and evaluation activities for the water project?

Yes **[ ]** No **[ ]**

21 How will you rate your level of satisfaction on funding allocation for monitoring and evaluation activities for the water project?

Very unsatisfied [ ]
Unsatisfied [ ]
Neutral [ ]
Satisfied [ ]
Very Satisfied [ ]

22 Have you ever participated in data collection meeting during implementation of the water project?

Yes **[ ]** No **[ ]**

23 How many times did you participate in data collection meetings between start and completion of the project?

Not Participated **[ ]**
Once **[ ]**
Between 2 and 3 times **[ ]**
More than 3 times **[ ]**

24 In your view, was the participation in data collection important in the project performance?

Yes **[ ]** No **[ ]**

25 How many times did the project staff and stakeholders participate in data collection during project implementation?

Not Participated **[ ]**
Once **[ ]**
Between 2 and 3 times **[ ]**
More than 3 times **[ ]**

26 Are you satisfied with the level of participation in data collection for the water project?

Yes **[ ]** No **[ ]**

27 How will you rate your level of satisfaction on your participation in data collection for the water project?

Very unsatisfied [ ]
Unsatisfied [ ]
Neutral [ ]
Satisfied [ ]
Very Satisfied [ ]

28 In your view, was the skills of project staff in monitoring and evaluation a contributor to performance of the water project?

Yes **[ ]** No **[ ]**

29 How will you rate the capacity of project staff in monitoring and evaluation for the success of the water project?	Very good Good Neutral Poor Very Poor	**[ ]** **[ ]** **[ ]** **[ ]** **[ ]**
30 Do you currently fetch water from the water project?	Yes **[ ]** No **[ ]**	
31 Is the water in the water point available throughout the year?	Yes- Throughout the year (12 Months) No- Sometime in the year (less than12 Months) No access to water Explain Your Answer _____	**[ ]** **[ ]** **[ ]**
32 Does the water project has a committee managing it?	Yes **[ ]** No **[ ]** Don't Know **[ ]**	

(B) Questionnaire for the Project Staff

1.Highest Educational Level attained	Secondary	[ ]
	Tertiary (Certificate, Diploma, Degree)	[ ]
2. How many years have you held your current role	Less than 3 years	[ ]
	Between 3 and 5 years	[ ]
	Above 5 years	[ ]
3. What is your total experience in implementing water projects	Less than 3 years	[ ]
	Between 3 and 5 years	[ ]
	Between 5 and 10 years	[ ]
	Over 10 years	[ ]

4 When was the establishment of water projects started?	Nzevea	_____Years Ago
	Kyamutwii	_____ Years Ago
	Mango	_____ Years Ago
5 Were you there since the start of construction of the 3 water projects?	Yes **[ ]**	No **[ ]**
6 Did the projects conduct feasibility or baseline for the 3 projects?	Yes **[ ]**	No **[ ]**
	Explain your answer_____	Explain your answer_____
7 Is the feasibility or baseline report available?	Yes **[ ]**	No **[ ]**
8 Was the feasibility or baseline exercise conducted participatory?	Yes **[ ]**	No **[ ]**
9 In your view did feasibility/baseline contribute to the performance of the water project?	Yes **[ ]** No **[ ]**	No baseline was done. Explain_____

10 How will you rate your level of satisfaction on participation at baseline/feasibility of the water projects?	Very unsatisfied **[ ]** Unsatisfied **[ ]** Neutral **[ ]** Satisfied **[ ]** Very Satisfied **[ ]**	
11 Was evaluation or review done at the end or after the completion of the water projects?	Yes **[ ]**	No **[ ]**
12 In your view, did the evaluations or review at the end of the projects contribute to the performance of the water projects?	Yes **[ ]**	No **[ ]**
13 How will you rate your level of satisfaction on participation at evaluation or review of the water projects?	Very unsatisfied **[ ]** Unsatisfied **[ ]** Neutral **[ ]** Satisfied **[ ]** Very Satisfied **[ ]**	
14 In your view is financing of monitoring and evaluation activities necessary in the performance of water projects	Yes **[ ]**	No **[ ]**
15 In your opinion was monitoring and evaluation activities allocated enough funding during construction of all the water projects.	Yes **[ ]**	No **[ ]**
16 Was distribution of funds for monitoring and evaluation activities allocated all throughout the life of the water projects?	Yes **[ ]** Explain your answer_____	No **[ ]** Explain your answer_____
17 Are you satisfied with the level of funding of monitoring and evaluation activities for the water projects?	Yes **[ ]**	No **[ ]**
18 How will you rate your level of satisfaction funding allocation for monitoring and evaluation of water projects?	Very unsatisfied **[ ]** Unsatisfied **[ ]** Neutral **[ ]**	

	Satisfied [ ]	
	Very Satisfied [ ]	
19 In your view, did participatory data collection contribute to the performance of the water projects?	Yes **[ ]**	No **[ ]**
20 On average how many times did participatory data collection meetings happen between start and completion of the project?	_____ times (Nzevea) _____ times (Kyamutwii) _____times (Mango)	
21 In your view, was the participatory data collection important in the project performance?	Yes **[ ]**	No **[ ]**
22 Are you satisfied with the level of participatory data collection for the water activities?	Yes **[ ]**	No **[ ]**
23 How will you rate your level of satisfaction in participatory data collection for the water project?	Very unsatisfied [ ] Unsatisfied [ ] Neutral [ ] Satisfied [ ] Very Satisfied [ ]	
24 Are you trained in M&E?	Yes **[ ]**	No **[ ]**
25 Have you received some training in the past on M&E?	Yes **[ ]**	No **[ ]**
26 How will you rate your capacity in monitoring and evaluation?	Very good **[ ]** Good **[ ]** Neutral **[ ]** Poor **[ ]** Very Poor **[ ]**	
27 In your view, are the skills in monitoring and evaluation a contributor to performance of water projects?	Yes **[ ]**	No **[ ]**
28 Are the water projects currently functional?	Yes **[ ]**	No **[ ]**
	Explain your	Explain your

	answer_____	answer_____
29 Is the water available throughout the year?	Yes- Throughout the year (12 Months) **[ ]** No- Sometime in the year **[ ]** No access to water **[ ]** Explain Your Answer_____	
30 Do all the water points have committees managing them?	Yes **[ ]** Explain your answer_____	No **[ ]** Explain your answer_____

(C) Questionnaire for Water Project Committee

Ward:_____ **Village/Cluster: _____**

Water Project:_____

1. Age category	21 to 35 [ ] 36 to 45 [ ]
	46 to 55 [ ] 56 and above [ ]
2. Gender of Respondent	Male [ ]
	Female [ ]
3.Highest Educational Level attained	Non formal education [ ]
	Primary [ ]
	Secondary [ ]
	Tertiary [ ]
4. Role of the respondent	Chairperson [ ] Secretary [ ] Others_____
5. How many years have you been a member of management committee of the water project?	Less than 3 years [ ]
	Between 3 and 5 years [ ]
	Above 5 years [ ]
6 How far is the nearest water point (where you fetch water from?) from your homestead.	Less than 1 KM **[ ]** More than 1 KM **[ ]**
7 Were you there since the beginning of the water point (where you fetch water from?)	Yes **[ ]** No **[ ]**
8 Did you participate in the initial meeting at the start or just before the construction of the water project?	Yes **[ ]** No **[ ]**
9 In your view, did this meeting influence the performance of the project?	Yes **[ ]** No **[ ]**

10 Were there recommended changes to plan acted upon when the water project was being established?	Yes **[ ]**	No **[ ]**
11 Were you satisfied you're your participation in the baseline or feasibility meeting?	Yes **[ ]**	No **[ ]**
12 How will you rate your level of satisfaction on participating during the baseline or feasibility?	Very unsatisfied **[ ]** Unsatisfied **[ ]** Neutral **[ ]** Satisfied **[ ]** Very Satisfied **[ ]**	
13 Did you participate in the evaluation or closure review at the completion or after the completion of the water point?	Yes **[ ]**	No **[ ]**
14 Are you satisfied with the level of participation in the evaluation of this project?	Yes **[ ]**	No **[ ]**
15 How will you rate your level of satisfaction on evaluation of the project?	Very unsatisfied **[ ]** Unsatisfied **[ ]** Neutral **[ ]** Satisfied **[ ]** Very Satisfied **[ ]**	
16 In your view, did the evaluation or review contributed to the performance of the water project?	Yes **[ ]**	No **[ ]**
17 In your view is financing of monitoring and evaluation activities necessary in the performance of water projects	Yes **[ ]**	No **[ ]**
18 In your opinion was monitoring and evaluation activities allocated enough funding during construction of all the water projects.	Yes **[ ]**	No **[ ]**
19 Was distribution of funds for monitoring and evaluation activities allocated all throughout the life of the water projects?	Yes **[ ]** Explain your answer_____ _	No **[ ]** Explain your answer_____
20 Are you satisfied with the level of funding of monitoring and evaluation activities for the water projects?	Yes **[ ]**	No **[ ]**

21 How will you rate your level of satisfaction funding allocation for monitoring and evaluation of water projects?	Very unsatisfied [ ] Unsatisfied [ ] Neutral [ ] Satisfied [ ] Very Satisfied [ ]
22 In your view, did participatory data collection contribute to the performance of the water projects?	Yes **[ ]** No **[ ]**
23 On average how many times did participatory data collection meetings happen between start and completion of the project?	_____ times
24 In your view, was the participatory data collection important in the project performance?	Yes **[ ]** No **[ ]**
25 Are you satisfied with the level of participatory data collection for the water activities?	Yes **[ ]** No **[ ]**
26 How will you rate your level of satisfaction in participatory data collection for the water project?	Very unsatisfied [ ] Unsatisfied [ ] Neutral [ ] Satisfied [ ] Very Satisfied [ ]
27 Have you received some training in the past on monitoring and evaluation?	Yes **[ ]** No **[ ]**
28 In your view, are the skills in monitoring and evaluation a contributor to performance of water projects?	Yes **[ ]** No **[ ]**
29 Is the water projects currently functional?	Yes- Throughout the year (12 Months) [ ] No- Sometime in the year [ ] No access to water [ ]
30 Is the water available throughout the year?	Yes **[ ]** No **[ ]** Explain your answer_____ Explain your answer_____
31 Does the water point has a committee managing it?	Yes **[ ]** No **[ ]**

Appendix III: Research Permit

THIS IS TO CERTIFY THAT:
MR. PAUL KIPKOECH TITOMET
of UNIVERSITY OF NAIROBI, 0-10400
Nanyuki,has been permitted to conduct
research in *Machakos County*

on the topic: *INFLUENCE OF MONITORING AND EVALUATION IN THE PERFORMANCE OF WATER PROJECTS IN KENYA: A CASE OF MWALA WATER PROJECT, MACHAKOS COUNTY*

for the period ending:
13th June,2018

Permit No : NACOSTI/P/17/97861/17559
Date Of Issue : 13th June,2017
Fee Recieved :Ksh 1000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officer will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEACH CLEARANCE PERMIT

Serial No.A 14331

CONDITIONS: see back page