INFLUENCE OF MONITORING APPROACHES ON IMPLEMENTATION OF RICE PROJECTS IN MWEA IRRIGATION SCHEME, KIRINYAGA COUNTY, KENYA

EDWARD ONDERI MOSE

A Research Project Report Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Arts in Project Planning and Management of the University of Nairobi

2018

DECLARATION

This research project report is my original work and has not been submitted to any University for any academic award.

Signature ……. Date ……

Edward Mose

L50/89417/2016

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

Signature …… Date ……

Dr. Khamati Shilabukha

Lecturer,

Open, Distance and e-Learning Campus,

The University of Nairobi

DEDICATION

This study is dedicated to my parents: Mr. Winston Mose and Esther Kerubo Mose, my wife Beatrice Mose and my children; Franklin, Newton and Melissa.

ACKNOWLEDGEMENT

I am deeply indebted to my supervisor Dr. Khamati Shilabukha who patiently stood by me, always offering boundless encouragement and unwavering support during the entire study. Dr. Khamati was always been available to offer guidance, responding in time, made corrections and communicated in time. To him I shall forever remain grateful.

I also extend my gratitude to Prof. Christopher Gakuu Director Distance and e-learning Campus of the University of Nairobi and Deputy Director, Prof. Harriet Kidombo. I am ever greatful to the departmental coordinator, Prof. Charles Rambo; the Dean, Dr. Dorothy Kyalo. For me to come this far, I owe it to the following lecturers namely; Prof. Ganesh Porkhariyal, Dr. John Mbugua, Dr. Raphael Nyonje, Dr. Lillian Otieno, Dr. Angeline Mulwa, Dr. Peter Makokha, and Dr. Robert Oboko among others;

Last but not least I am indebted to staff at the Mwea irrigation scheme particularly Mr. Isaac Meso-the scheme manager and Ms. Joyce Kamene-the principal irrigation officer for their invariable support especially in identifying respondents to be used in this study.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABRERVIATIONS AND ACRONYMS

BA:	Beneficiary Assessment
CDF:	Constituency Development Fund
DOF:	Director of Finance
FDG:	Focused Group Discussions
GoK:	Government of Kenya
KII:	Key Informant Interview
M&E:	Monitoring and Evaluation
NACOSTI:	National Commission for Science, Technology & Innovation
NDPC:	National Development Planning Commission
NIB:	National Irrigation Board
OECD:	Organization of European Co-operation for Development
PRA:	Participatory Rural Appraisal
PM&E:	Participatory Monitoring and Evaluation
RBB:	Results Based Budgeting
RNMES:	Results Based Monitoring and Evaluation System
UN:	United Nations
UNDP:	United Nations Development Program
SARAR:	Self-esteem, Associative Strengths, Resourcefulness, Action Planning and Responsibility
WBG:	World Bank Group

ABSTRACT

This study sought to establish influence of monitoring approaches on the implementation rice projects in Mwea irrigation scheme. The study was held in the Mwea scheme, owned by the National Irrigation Board in Kirinyaga County. The study focused on four objectives; to establish the influence of results-based monitoring on implementation of rice projects; examine the influence of participatory monitoring on the implementation of rice projects, assess the influence of rapid appraisals on the implementation of rice projects and examine how monitoring approaches jointly influenced the implementation of rice projects. The study sought to test four alternate hypotheses which are; there's significant relationship between results-based monitoring and implementation of rice projects; there is a significant relationship between participatory monitoring and the implementation of rice projects; there is a significant relationship between rapid appraisals and implementation of rice projects and finally there is a significant relationship between monitoring approaches and the implementation of rice. The study had a target population of 7,022 individuals who include farmers and the scheme managers. Using simplified Yamane formula of proportions, and corroborated by Krejcie and Morgan Table, (1970) a sample size of this study was 382 respondents. This study employed descriptive survey design since triangulation was desired. Close-ended questionnaires were used to collect quantitative data while the key informant interviews with scheme managers were used to collect qualitative data. Two research assistants helped the researcher collect quantitative data while the researcher collected qualitative data by himself. Proportionate random sampling was utilized in sampling individuals interviewed per cluster. The study questionnaire was pilot-tested two weeks prior to actual data collection process so as to refine its content and remove any ambiguities in questions asked. Content and construct validity were adopted to measure the appropriateness of the research instruments to be used while Cronbach's Alpha was used to measure reliability of research instrument which gave a reliability composite measure of 0.744 meaning the structured questionnaire was reliable. Regression and correlation models were used to show extent of relationships between four independent variables; results-based monitoring, rapid appraisals and participatory monitoring against dependent variable; implementation of rice projects. From the data analyzed, It was confirmed that that all the variables under study influenced implementation of rice projects to an extent of $F(2,208)=26.224; P<0.05; R2=0.244$); for results based monitoring; participatory; $F(2,208)=42.576, P<0.05; R2=0.467$) participatory monitoring; $F(2,208)=58.243, P<0.05; R2=0.484$) and $F(3,208)=33.476$ $P<0.05; R2=0.585$) when all monitoring approaches are considered jointly using the F-values. The study independent variables also demonstrated high levels of correlation between themselves and the independent variable. This study therefore accepts all the four hypotheses measured and strongly recommends that monitoring approaches should be inculcated in project design and implementation in order to enhance efficiency and better results in project work. It is hoped this study will inform policy, contribute to new knowledge in the monitoring and evaluation discipline.

.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Project monitoring is a tool in project management that deals with the organization of project components with the aim of ensuring successful completion of the project. Project management can be described as the scientific application of modern tools and techniques in planning, financing, implementation, controlling and coordination of activities in order to achieve desired outputs according to the project objectives within the constraints of time, cost and quality (OECD, 2002). Project monitoring is therefore about managing practices of a project from the defining stage to planning, execution, control to the closure of the project with a view of enhancing results.

OECD, (2002) defines project monitoring as the proceeding with work that utilizations methodical accumulation of information on determined markers to give administration and the fundamental partners of a continuous improvement intercession with signs of advance and accomplishment of targets and advance in the utilization of distributed assets. Task assessment, then again is the orderly evaluation of a continuous or finished undertaking, program or arrangement, its plan, usage and results. The sole point of task checking is to decide the pertinence and satisfaction of undertaking goals, improvement of proficiency, adequacy, importance, effect and manageability of projects.

Monitoring of a program or mediation includes practices, for example, the standard gathering of information that measure advance toward accomplishing program destinations. It is utilized to track changes in program execution after some time while allowing partners to settle on educated choices with respect to execution, adequacy of projects and the productive of utilization of assets. project checking measures how well the program exercises have met expected destinations and additionally the degree to which changes in results can be credited to a particular program or mediation. The distinction in the result of enthusiasm amongst having and not having a mediation is known as its "effect," and is basic in finding out more elevated amount results in tasks and projects

Project monitoring is hence acknowledged as being most successful approach of managing changes brought about by projects. This is because it has techniques and tools that enable control and delivery of the project activities within given deliveries, timeframe and budget (Shapiro, 2011). Monitoring and evaluation is one of the tools that assist project managers track performance and also provide the management with information and feedback to make decisions in regard to the performance of a given intervention.

According to Simon (1986), project monitoring is the continuous assessment of project implementation in relation to design schedules, and of the use of inputs, infrastructure, and services by project beneficiaries. Simon, further observes that project evaluation is the periodic assessment of a project's relevance, performance, efficiency, and impact both expected and unexpected in relation to stated objectives. Organizations need evidence of their efficiency and effectiveness for funders, commissioners, project owners, investors and other stakeholders. They also need to communicate achievements to a wider public. However, the role of monitoring and evaluation in providing learning and improving the organization is of equal importance.

In Australia, one of the leading countries in embracing monitoring systems in development projects (UNDP, 2002). The government created a fully-fledged government evaluation system, managed by the department of finance. This provided a spending baseline and freed up the budget process from a detailed, line item scrutiny of spending, to focus instead on changes in government approach and spending needs in the development projects. The legislature of Australia upheld the standards of program administration and planning, with an emphasis on the proficiency and viability of government programs, through sound administration hones, the gathering of execution data, and the customary lead of program assessment (Mackay, 2011).

There is need for effective monitoring which is increasingly being recognized as an indispensable tool of both project and portfolio management (WBG, 1998). This is because project monitoring provide a basis for accountability in the use of development resources. Further monitoring practices can be applied to strengthen the design and implementation and stimulate partnership with project stakeholders.

At a regional level, Ghana came up with a commission; National Development Planning Commission as a regulatory policy to assimilate the principle of monitoring operations. NDPC adapted results-based monitoring & evaluation system and results-based budgeting in monitoring process. This was purposely to ensure cost effectiveness, institutional Government monitoring systems in Africa operate in complex terrain. To some extent they are hostages to other forces in government, nevertheless given a results-driven reform agenda, incentives can be put in place for the evidence generated to support developments in delivery, budgeting, and monitoring and evaluation are consistently designed to support valued change in people's lives, particularly the underprivileged (Nabulu, 2015).

In Kenya, the monitoring systems have not entirely been that effective due to several challenges especially in the government sector. In the year 2005, the Ministry of Planning and National Development commissioned work on the design of an appropriate framework for Monitoring and Evaluation in the National Development Program. This proposed monitoring and evaluation framework hasn't been fully operational, this view, is supported by Wanjiru, (2008) who indicated in her social audit of CDF projects that, monitoring and reporting should be strengthened and deepened in all CDF projects. In furtherance of the same objective, the National Integrated Monitoring and Evaluation System was established in 2004 by the Kenyan government. NIMES was launched during the London investment summit 2012. The system is used to trace development at both National and County government level in the current devolved system of governance (GOK, 2003).

accentuate study by Prabhakar (2008) pointed out that Monitoring and Feedback was one of elements prompting venture achievement. Papke-Shields et' al (2010) likewise noticed that the likelihood of making venture progress appeared to be upgraded among different variables, by continually observing the advance of the undertaking. As per their investigation, checking and controlling was significant in, administration of venture scope, time, cost, quality, HR, correspondence, and dangers. Hwang and Lim (2013) likewise settled that Monitoring and assessing, spending execution, plan execution and quality execution could prompt venture achievement. Ika et al (2010) built up that undertaking achievement was uncaring to the level of task arranging endeavors however then again discovered that a noteworthy connection exists between the utilization of checking and

assessment devices and venture "profile" a win standard which was an early pointer of task long haul affect. Indeed Ika et al, (2010) emphasizes that task checking is more basic than arranging in accomplishment of project success.

Similarly, one of the components of the project management methodology whose main aim is to achieve project success was monitoring project progress (Chin, 2012). There seems to be consensuses across the project management spectrum that project monitoring is a major contributor to project success. To crown it all, PMBOK, (2001) continually stresses the importance of monitoring and evaluation in achieving project success. It clearly identifies project monitoring as the greatest contributor to successful implementation of projects.

1.1.1 Mwea Irrigation Scheme

Mwea irrigation scheme is located in Mwea East and West sub-counties of Kirinyaga County. It was started as a detention camp for Mau Mau detainees during the height of the state of emergency. In order to establish whether rice crop could be cultivated, the colonial government carried out the first rice trials in 1953 (NIB, 2003). This was mainly because the whole scheme area was then used as a common grazing ground and hence there was need to set up trials in order to determine the viability of rice crop production in the area. The scheme covers an area of 26,000 (22,000 acres in the main scheme and 4,000 acres in the out-growers) it mainly focuses on growing Basmati rice.

The scheme currently has 7,022 farmers/households (NIB, 2005) and is currently run under the participatory irrigation management approach with NIB being responsible for the primary and secondary infrastructure while the farmers are responsible for the tertiary infrastructure. National Irrigation Board undertakes capacity building, irrigation expansion and rehabilitation of the irrigation infrastructure (GoK, 2017).

1.2 Statement of the Problem

Numerous monitoring approaches have been deployed by various entities to enhance efficiency and produce desired results in all project interventions. It is evident that project monitoring is a critical component in the successful implementation of any project. This can be evidenced by the surge in requirement of monitoring and evaluation consultants in the advertisements in the daily newspapers in Kenya (Chesos, 2010) and the rapid growth in the evaluation discipline realized in Kenya today.

Whereas many projects currently employ numerous monitoring approaches, the worth of some of these monitoring interventions has not been clearly enumerated (Chesos, 2010). In an empirical study by Koffi-Tessio (2002), it was clearly shown that most monitoring systems are not meeting their obligatory requirements as decision making tools. Instead, their activities have been viewed as controlled by a bureaucratic management. In other cases, project monitoring has been viewed as a donor and not necessarily a management requirement in the enhancement of program success (Shapiro, 2011).

While there exists extensive literature on project monitoring and project performance, and knowing that project monitoring is very complex, multidisciplinary and skill intensive endeavor (Engela and Ajam, 2010), the exact influence of monitoring approaches such as participatory monitoring, results-based monitoring and rapid monitoring appraisals among others on implementation of rural based projects isn't clearly known. This therefore calls for the need for clear parameters in constructing tools for effective monitoring.

Despite the massive intervention by development partners such as Japan International Corporation Agency and Japan Bank for International Cooperation as the leading technical and financial provider in the Mwea rice projects, the outputs in terms of quantity of rice produced isn't satisfactory. For the last five years alone JICA has invested over 20 billion shillings to the Mwea rice scheme, however only 100,000 metric tons of rice have been produced over the same period (NIB, 2017). This has brought a sharp focus on the monitoring tools utilized. This study differs from previous works in terms of scope. Since most of the past work tended to focus on monitoring and evaluation as a sole discipline, this study shall purely focus on project monitoring as a sole discipline.

1.3 Purpose of the Study

The purpose of this study was to examine the influence of monitoring approaches on the implementation of rice projects in Mwea irrigation scheme of Kirinyaga County, Kenya.

1.4 Objectives of the Study

This study was guided by the following objectives:

1) To establish influence of results-based monitoring on implementation of rice projects in Mwea irrigation scheme.
2) To examine influence of participatory monitoring on implementation of rice projects in Mwea irrigation scheme.
3) To assess the influence of rapid appraisals on the implementation of rice projects in Mwea irrigation scheme.

1.5 Research Questions

This study sought to answer the following research questions:

1) How does results-based monitoring influence the implementation of rice projects in Mwea irrigation scheme?
2) To what extend does participatory monitoring influence the implementation of rice projects in Mwea irrigation scheme?
3) At what level does rapid appraisals influence the implementation of rice projects in Mwea irrigation scheme?

1.6 Research Hypothesis

This study sought to test the following alternate hypothesis:

1) **H_1**: There is a significant relationship between results-based monitoring and the implementation of rice projects in Mwea irrigation scheme.
2) **H_1**: There is a significant relationship between participatory monitoring and the implementation of rice projects in Mwea irrigation scheme.
3) **H_1**: There is a significant relationship between rapid appraisals and implementation of rice projects in Mwea irrigation scheme

1.7 Significance of the Study

The findings from this study will contribute to policy making and add to the body of knowledge on the area of project management and M&E in general. It will also be critical reference materials in libraries to be utilized by M&E practitioners and the academicians

It is anticipated, that this study shall give a new dimension on the very important part played by project monitoring in rural development endeavors and that researchers will find this information as a pertinent literature and a basis for further studies. The study will therefore be significant to public institutions by contributing and strengthening monitoring.

1.8 Delimitations of the Study

The delimitations of this study was restricted to the variables that were understudy namely results-based monitoring, participatory monitoring, rapid appraisals and implementation of rice projects, the geographical area of study being Mwea rice scheme that is located in the Mwea constituency of Kirinyaga County as well as target respondents who are the rice farmers and the scheme managers

1.9 Limitation of the Study

First validity of the data source in this study might have affected by respondents giving inaccurate information. This could have led to inappropriate conclusions to the study. To ensure information collected was valid, multiple source of the same data were used to offer checks on data collected. In this study, information from the primary source was compared and complimented by other sources such as key informants and focus groups and desk reviews.

Secondly, the statistical tests might not have been able to identify significant relationships within data set, if the sampling size was small. To mitigate this limitation, relatively large sampling size were used to generate more accurate results. Finally, percentage as a unit of measure was based on approximations rather than actuals. This definitely affected results and conclusions. To remedy this limitation, the researcher used actual figures as opposed to relying on percentages.

1.10 Assumptions of study

1. Result-Based monitoring influence the implementation of Rice projects in Mwea Irrigation Scheme.
2. Participatory Monitoring influence the implementation of Rice projects in Mwea Irrigation Scheme.
3. Rapid appraisals influence the implementation of Rice projects in Mwea Irrigation Scheme.

1.11 Definition of Significant Terms used in the Study

Implementation of Rice Projects: These entail the process of achieving project results. They include increase in bags of rice harvested, percentage increase in amount of produce sold and the amount of money raised from selling rice.

Monitoring Approaches: These are approaches used to measure performance of the rice scheme, this include the rapid appraisals, level of participatory monitoring and results-based monitoring.

Participatory Monitoring: These are approaches that involves all community members and stakeholders in the progress of all projects. Stakeholders are involved in project design, project conceptualization and implementation.

Rapid Appraisals: These are monitoring approaches that ensures that projects implemented undergo rapid regular monitoring to ensure compliance to set standards and guidelines.

Results-Based Monitoring: These are approaches used to measure the results of projects implemented. Results will be based on hectares under cultivation and bags of rice harvested.

Rice projects These are the various rice farming projects in Mwea Irrigation scheme monitored and administered by National Irrigation Board for the production of rice.

Organization of the Study

This report is organized in five chapters. Chapter one covers the background to the report including the statement of the problem, the purpose of the study, objectives of the study, research questions and hypotheses, significance of the study, limitations and delimitations and assumptions of the study and finally the definitions of significant terms.

Chapter two of this study covers the review of the empirical studies on the study subject and the existing theoretical literature on the monitoring approaches that are discussed in accordance to the study objectives, the theoretical and conceptual frameworks, an organized matrix on research gap that is the resulting from reviewing the literature review.. Chapter three discusses the research methodology adopted in this study which is the research design, target population, sampling procedure, research instruments, data analysis techniques and operationalization of variables.

Chapter Four deals with the analysis, presentation, interpretation and discussion of findings. Finally, Chapter Five details the summary of findings, conclusions, recommendations for theory, policy and practice, contribution of the study to knowledge and suggestions for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter focuses on both empirical and theoretical literature obtained from the study themes of these study that include results-based monitoring and implementation of rice projects, participatory monitoring and implementation of rice projects and the rapid appraisals and implementation of rice projects. The chapter also contains the theoretical literature and conceptual frameworks and a matrix on research gap identified after the review of literature.

2.2 The Concept of Implementation of Rice Projects

Project implementation is measured by product and project quality, timeliness, budget compliance, and degree of customer satisfaction. Ling et al (2009) also assessed scope management, time management, cost management, quality management, risk management, human resource management, procurement management, and integration management in relation to project success where the established were significant associations. These factors were closer to Papke-Shields' (2010) factors.

Time dimension of assessing project success is the most common aspect brought out in the literature review. Pretorius et al (2012) found out that project management organizations with mature time management practices produce more successful projects than project management organizations with less mature time management practices. Project time is the absolute time that is calculated as the number of days/weeks from start on site to practical completion of the project. Speed of project implementation is the relative time (Chan, 2001). Peterson & Fisher (2009) established that construction firms are usually interested in monitoring project time variance and verifying contractor progress payments requests. Kariungi, (2014) expressed that energy sector projects were completed on time due to factors such as efficient procurement procedures, favorable climatic factors, and timely availability of funds and proper utilization of project planning tools.

Completion of the project within the budget is another dimension that is used to measure project success. Costs can be computed in form of unit cost, percentage of net variation over final cost and so on (Chan, 2001). The project monitoring and evaluation team may control the costs using PERT and CPM techniques. Projects often face cost overruns during the implementation phase; hence a proactive approach is essential for monitoring project costs and detection of potential problems (Cheng et al, 2012). Related to cost aspect of measuring project success, is technical performance. Baker et al (2008) identified technical performance as one of the project success factors among others such as schedule performance and cost performance.

Quality achievement by projects is also another dimension of assessing project success. The quality of projects and project information has a significant influence project success (Raymond & Bergeron, 2008). Closely related to the quality and technical requirement dimensions is the scope. Project completion within scope is considered as one of the success factor. The project charter or statement of work requires the implementers to develop a scope of work that was achievable in a specified period and that contained achievable objectives and milestones (Bredillet, 2009).

Another important dimension in project success includes customer satisfaction (Dvir, 2005). A project that in the final analysis leads to customer satisfaction would be said to be successful. Evaluating the performance of project is beneficial to both the stakeholders by enabling them to appraise the services received and to project manager by helping them to improve their services (Besner & Hobbs, 2008). Project success relates to the end product's goals in terms of performance and fulfilling the technical requirements, as well as customer satisfaction. Successful projects also contributes to company's success in long term in terms of gaining a competitive advantages; enhancing company's reputation; increasing the market share; and reaching specified revenue and profits (Al-Tmeemy, 2011). Project manager whose personality profile was close to the ideal Project Manager's profile for a particular project type were more successful in impact on the customers, benefit to the organization and overall success (Malach et al, 2009). This ultimately means that the project managers who understand the projects will be in a better position to satisfy

the clients of the project and the stakeholders. In a nutshell project success can be assessed on the basis of completion within scheduled time, completion within reasonable cost and within budget, quality achievement, meeting of technical requirement, project achieving user satisfaction and finally achievement of organizational objectives.

2.3 Results-Based Monitoring and Implementation of Rice Projects

Results-based monitoring is a critical component of project monitoring with indicators that are clues, signs or markers that measure one aspect of a program and show how close a program is to its desired path and outcomes (Risk and Kusek, 2004). They are used to provide benchmarks for demonstrating the achievements of a program. One of the most critical steps in designing an M&E system is selecting appropriate indicators. The M&E plan should include descriptions of the indicators that will be used to monitor program implementation and achievement of the goals and objectives. An indicator is a variable that measures one aspect of a program or project that is directly related to the program's objectives (Philip et al, 2008).

An indicator is a variable whose value changes from the baseline level at the time the program began to a new value after the program and its activities have made their impact felt. At that point, the variable, or indicator, is calculated again. Secondly, an indicator is a measurement. It measures the value of the change in meaningful units that can be compared to past and future units. This is usually expressed as a percentage or a number (Philip et al, 2008). Finally, an indicator focuses on a single aspect of a program or project. This aspect may be an input, an output or an overarching objective, but it should be narrowly defined in a way that captures this one aspect as precisely as possible. A reasonable guideline recommends one or two indicators per result, at least one indicator for each activity, but no more than 10-15 indicators per area of significant program focus (Philip et al, 2008; (Marelize and Kusek, 2009).

Indicators are the quantitative or qualitative variables that give a basic and solid intends to gauge accomplishment, to mirror the progressions associated with an intercession, or to help evaluate the execution of an association against the expressed result. Quantitative indicators are numeric and are presented as numbers or percentages. Qualitative indicators

are descriptive observations and can be used to supplement the numbers and percentages provided by quantitative indicators. They complement quantitative indicators by adding a richness of information about the context in which the program has been operating (Risk and Kusek, 2004).

Indicators ought to be produced for all levels of the outcomes based M&E framework, implying that pointers are expected to screen advance regarding inputs, exercises, yields, results, and objectives. Advance should be observed at all levels of the framework to give input on territories of achievement and zones in which change might be required. Result pointers help to answer two key inquiries: "In what capacity will we know achievement or accomplishment when we see it? Are we advancing toward accomplishing our coveted results?" (Risk and Kusek, 2004). These are the issues that are progressively being asked of governments and associations over the globe. Creating key markers to screen results empowers chiefs to survey how much planned or guaranteed results are being accomplished. Marker improvement is a center action in building an outcomes based M&E framework. It drives every single consequent datum gathering, investigation, and detailing. There are additionally imperative political and methodological contemplations engaged with making great, compelling pointers (Risk and Kusek, 2004).

Indicators provide M&E information crucial for decision-making at every level and stage of program implementation. Indicators of program inputs measure the specific resources that go into carrying out a project or program (for example, amount of funds allocated to the health sector annually). Indicators of outputs measure the immediate results obtained by the program (for example, number of multivitamins distributed, or number of staff trained). Indicators of outcomes measure whether the outcome changed in the desired direction and whether this change signifies program “success” (for example, contraceptive prevalence rate or percentage of children 12-23 months who received immunization by 12 months of age (Philip et al, 2008).

Setting indicators to measure progress in inputs, activities, outputs, outcomes, and goals is important in providing necessary feedback to the management system. It will help managers identify those parts of an organization or government that may, or may not, be

achieving results as planned. By measuring performance indicators on a regular, determined basis, managers and decision makers can find out whether projects, programs, and policies are on track, off track, or even doing better than expected against the targets set for performance. This provides an opportunity to make adjustments, correct course, and gain valuable institutional and project, program, or policy experience and knowledge. Ultimately, of course, it increases the likelihood of achieving the desired outcomes.

Indicator selection is a complicated process in which the interests of several relevant stakeholders need to be considered and reconciled. At a minimum, there should be indicators that directly measure the outcome desired. Qualitative indicators/targets imply qualitative assessments compliance with, quality of, extent of and level of Qualitative indicators ...provide insights into changes in institutional processes, attitudes, beliefs, motives and behaviors of individuals (UNPF, 2000). A qualitative indicator might measure perception, such as the level of empowerment that local government officials feel to adequately do their jobs. Qualitative indicators might also include a description of a behavior, such as the level of mastery of a newly learned skill. Although there is a role for qualitative data, it is more time consuming to collect, measure, and distill, especially in the early stages. Furthermore, qualitative indicators are harder to verify because they often involve subjective judgments about circumstances at a given time (UNPF, 2000).

Qualitative indicators should be used with caution. Public sector management is not just about documenting perceptions of progress. It is about obtaining objective information on actual progress that will aid managers in making more well-informed strategic decisions aligning budgets and managing resources. Actual progress matters because, ultimately, M&E systems will help to provide information back to politicians, ministers, and organizations on what they can realistically expect to promise and accomplish. Stakeholders, for their part, will be most interested in actual outcomes, and will press to hold managers accountable for progress toward achieving the outcomes. Performance indicators should be relevant to the desired outcome, and not affected by other issues tangential to the outcome (UNPF, 2000).

The economic cost of setting indicators should be considered. This means that indicators should be set with an understanding of the likely expense of collecting and analyzing the data. Indicators should be monitorable, meaning that they can be independently validated or verified, another argument in favor of starting with quantitative indicators as opposed to qualitative ones. Indicators should be reliable and valid to ensure that what is being measured at one time is what is also measured at a later time- and that what is measured is actually what is intended. Caution should also be exercised in setting indicators according to the ease with which data can be collected. Hatry (2005) noted that too often, agencies base their selection of indicators on how readily available the data are, not how important the outcome indicator is in measuring extent to which outcomes sought are being achieved.

The UNDP created the Human Development Index in 1990 as a way of measuring human progress and the quality of life in all countries of the world. The HDI constitutes the first comprehensive attempt to measure achievements in development from a human perspective, expressed in numerical indicators that permit inter-temporal comparisons. The index also provides an initial working tool that could be further developed and refined, and that could guide country efforts to establish relevant databases (UNDP, 2001)

Performance indicators can and should be used to monitor outcomes and provide continuous feedback and streams of data throughout the project, program, or policy cycle. In addition to using indicators to monitor inputs, activities, outputs, and outcomes, indicators can yield a wealth of performance information about the process of and progress toward achieving these outcomes. Information from indicators can help to alert managers to performance discrepancies, shortfalls in reaching targets, and other variabilities or deviations from the desired outcome. Thus, indicators provide organizations and governments with the opportunity to make midcourse corrections, as appropriate, to manage toward the desired outcomes.

2.4 Participatory Monitoring and Implementation of Rice Projects

The new realities of governance, globalization, aid lending, and citizen expectations require an approach that is consultative, cooperative, and committed to consensus building. The voices and views of stakeholders should be actively solicited. Engaging key stakeholders in a participatory manner helps to build consensus and gain a commitment to reaching the desired outcomes. Participatory monitoring and evaluation (PM&E) includes the appraisal of progress through procedures that include numerous individuals or gatherings, every one of whom is influencing or influenced by the effects being evaluated. Transaction prompts concurrence on how advance ought to be estimated, and the discoveries followed up on. It is a testing procedure for all worried as various partners must analyze their presumptions about what constitutes advance – and together manage the logical inconsistencies and clashes that can develop (Guijt, 1999).

Participatory monitoring & evaluation (PM&E) is a process through which stakeholders at various levels engage in monitoring or evaluating a particular project, program or policy, share control over the content, the process and the results of the monitoring and evaluation activity and engage in taking or identifying corrective actions. PM&E focuses on the active engagement of primary stakeholders (World Bank, 2010). Participatory Monitoring and Evaluation is one of many approaches to ensure that the implementation of the different projects within the action plan - or smaller individual projects- leads to the expected outcomes. As with all other monitoring and evaluation elements, the process for PM&E has to be prepared prior to project implementation (Philip et al., 2008).

The stakeholder groups typically involved in a participatory M&E activity include: the end users of project goods and services, including both men and women at the community level; intermediary organizations, including NGOs; private sector businesses involved in the project; and government staff at all levels (Rietbergen-McCracken et al. 1998).

A participatory approach to monitoring and evaluation will usually make use of a number of techniques and tools, selected and combined to suit the objectives of the M&E work and the resources available. Many of the techniques associated with Participatory Rural Appraisal (PRA), Beneficiary Assessment (BA), and SARAR have been used in the

context of monitoring or evaluation. Some examples of these methodologies' trademark techniques and applications to M&E as adapted by Rietbergen-McCracken et al. (1998. Participatory approaches encompasses interactive and visual-based methods to facilitate community discussion with such methods as pocket charts, three pile sorting, and "story with a gap." Beneficiary Assessment includes conversational interviewing and focus group discussions on changes and impacts. In addition to using and BA techniques, participatory monitoring and evaluation often entails development of other techniques that are designed to be used by community members and other local-level stakeholders as part of an M&E activity, namely visual self-evaluation tools, testimonials, photographing the evidence and community records and indicators.

Setting goals in isolation leads to a lack of ownership on the part of the main internal and external stakeholders. Likewise, when choosing outcomes, it is crucial to build a participatory and consultative process involving the stakeholders (Ikal, 2009). The participatory process should start with the development of goals and continue with setting outcomes and building an indicator system. Indicators cannot be simply turned over to technicians, because the political apparatus has to be consulted and has to agree on both goals and indicators. Thus, M&E systems can help identify promising programs or practices, identify unintended, but perhaps useful, project, program and policy results, help managers identify program weaknesses and take action to correct them and can also be used to diminish fear within organizations to foster an open atmosphere in which people learn from mistakes, make improvements, and develop skills (Gyorkos, 2003).

For research managers of DFID-funded work, participatory evaluation can stimulate a shift from assessing impacts based on DFID's perceptions of benefits to include the perceptions of the target population (Guijt, 1999). Participatory evaluation can, therefore, provide more comprehensive information on efficiency, sustainability, impact and effectiveness of work in progress. By learning from mistakes, it can lead to timely corrective action. By highlighting the successes of people's efforts, it can increase motivation. The systematic and continual exchange of information can also strengthen working relationships. As the

effectiveness of monitoring is based on sharing information, it requires identification of those who should share information and what information is worthwhile sharing.

Four trends are stimulating the interest in more participatory forms of M&E in the natural resource sector, giving rise to a wide range of expectations about what it can deliver. The first, and arguably most significant trend, has been the huge surge of experience with participatory appraisal and planning in general, especially in the natural resource sector. Participatory natural resource management has become an accepted ethic and practice in hundreds of Northern and Southern development initiatives and a logical extension of this has been rapidly growing interest in how to ensure wider participation in M&E (Guijt, 1999). This has stimulated greater appreciation for an adaptive management approach in which research and implementation activities are mutually reinforcing.

Second, questions about M&E are arising from the natural resource policy sector. On the one hand, more information is being sought to provide answers to environmental problems and to improve the planning of conservation and regeneration efforts. On the other hand, the accuracy, feasibility and relevance of existing data collection approaches, 'traditional' M&E exercises and policy processes are being questioned. The difficulty of pursuing environmental information for decision-making in times of rapid change and great uncertainty has raised questions about alternative approaches (Guijt, 1999). Natural scientists have long aimed to provide information to enable more appropriate interventions, but for many situations their methods can be too costly and time-consuming to be useful. Thus, there is a growing interest in how the wider community can contribute to natural resource-related M&E.

A third trend relates to the desire to know if environmental regeneration efforts are a worthwhile investment (Guijt, 1999). In part fueled by growing scarcity of funds, pressure is growing in funding and implementing agencies to prove that money allocated to environmental management is having the promised impacts. This is particularly true of the investments made in community-based natural resource management efforts.

2.5 Rapid Appraisals and Implementation of Rice Projects

Rapid appraisals received many accolades in the past decade and can be seen as a form of rapid monitoring of projects. Now funding agencies are asking advocates of such approaches to prove their claims. This is matched by growing community concerns about environmental problems and the impact of their own local efforts at mitigating some of the excesses (Suler, 2009).

Rapid rural appraisals part and parcel of participatory evaluation being stimulated and challenged is that of institutional change in general (Guijt, 1999). Taking on board new principles such as 'participatory development' and 'environmental sustainability' has created tensions, as existing ways of working are challenged. Combined pressures to prove the performance of key interventions, while working more efficiently and effectively given that past approaches have not always worked out very well, is encouraging organizations to consider the role that could be undertaken by such appraisals to improve performance.

Rapid rural appraisals can therefore contribute to creating a stable organization that values critical reflection and learns from success and failure alike. Given the range of different needs for information generation and sharing, PM&E is being asked to fulfil a range of purposes, each offering related benefits. The high – and diverse – expectations of the benefits of PM&E that recur in most literature are empowerment of stakeholders to take action, improved public accountability and improved information provision for strategic planning at different levels (Guijt, 1999).

Sometimes appraisals as a form of monitoring can provoke curiosity of stakeholders to become more involved. For example, in Paraíba, data on community-based seed banks was collected by an NGO but then systematized and analyzed with the local seed bank committees and communities. This event provoked much local discussion and has encouraged the seed bank committees to consider developing their own monitoring systems, rather than participate in the NGO-driven process (Guijt, 1999). This was only possible because an opportunity was created for a larger group of stakeholders to reflect on what the information meant and was not inherent to the data collection method.

Rapid appraisals promotes transparency and accountability within organizations and governments. Beneficial spillover effects may also occur from shining a light on results. External and internal stakeholders will have a clear sense of the status of projects, programs, and policies. The ability to demonstrate positive results can increase popular and political support. There are organizational and political costs, and risks associated with implementing results-based M&E systems. However, there are also crucial costs and risks in not implementing such systems (Gaither, 2015) Results-based M&E systems can help strengthen governments and other organizations by reinforcing emphasis on demonstrable outcomes. Getting a better handle on the working and outcomes of economic and other government programs and policies can contribute to poverty reduction, economic growth and the achievement of goals.

Implementing results-based rapid appraisal systems can pose political challenges in both developed and developing countries. It takes strong and consistent political leadership making results-based information available to the public can change the dynamics of institutional relations, budgeting and resource allocation, personal political agendas, and public perceptions of government. Strong, vested interests may feel threatened. There may be counter-reformers within and the government/organization who actively oppose monitoring efforts. This makes roles of a champion key to ensuring the institutionalization and sustainability of a results-based M&E system.

A baseline survey is information provides data at the beginning of, or just prior to, the monitoring period. The baseline survey is used as a starting point in project appraisal, or guide, by which to monitor future performance. Baselines are the first critical measurement of the indicators. The data systems may not be available and may vary with respect to precision. The selected performance indicators, and the information accumulation techniques used to track those markers, should be grounded in the substances of what information frameworks are set up, what information can directly be created, and what limit exists to grow the broadness and profundity of information gathering and investigation (Barry, 2010). It is critical to gather just the information that is proposed to be utilized. All things considered, execution data ought to be an administration apparatus,

and thusly, there is no compelling reason to gather data that directors are not going to utilize. As a general guideline, just gather standard data that relates straightforwardly to the execution inquiries and pointers that you have recognized.

A survey costs less than a census while at the same time generating generalizable data. Surveys are critical in project appraisals. It is possible to get views, opinions, and other information about an entire population without having to survey the entire population and this greatly reduces costs (IFAD, 2002). Surveys enable trend analysis over time in the sense that the survey protocol is set up appropriately and the survey is conducted in the same way (same method) and collects the same kind of data (same questionnaire), trend analysis over time is possible. Baseline surveys and surveillance data are essential for an M&E system because they help generate certain impact and outcome-level data.

These survey data avoid bias by collecting data in intervention and other areas and usually provide an objective, independent view on the impacts and outcomes and may be more credible than data collected by a project itself (IFAD, 2002). Data sources are sources of information used from where data users collect the data needed to calculate the indicators (Hatry, 199). A data collection plan should include diagrams depicting the systems used for data collection, processing and analysis and reporting. The strength of these systems determines the validity of the information obtained.

Potential errors in data collection, or in the data themselves, must be carefully considered when determining the usefulness of data sources in project appraisal. Data sources in this study shall therefore be based on resources used to obtain data for monitoring activities. There are several levels from which data can come, including client, program, service environment, population, and geographic levels. Regardless of level, data are commonly divided into two general categories: routine and non-routine (Risk and Kusek, 2004; Philip et al, 2008) and is critical in undertaking rapid appraisals for effective project monitoring to ensure compliance to parameters of quality, cost and timely delivery of projects.

2.6 Theoretical Framework

This study is anchored on the theory of change, which is a key project implementation theory.

2.6.1 The Theory of Change

This theory was developed by the evaluation theorists and practitioners such as Huey Chen, Peter Rossi, Michael Quinn Patton, and Carol Weiss. This theory is used for developing solutions to complex social problems and provides a comprehensive picture of early and intermediate term changes that are needed to reach a long term set goal (Anderson, 2005).

The theory of change provides a model of how a project should work, which can be tested and refined through monitoring and evaluation. This theory underpins this research since it shows specific and measurable description of change that forms the basis for planning, monitoring and implementation of projects. Most projects have a theory of change although they are usually assumed (CARE, 2013). The theory of change helps in developing comprehensible frameworks for project.

This theory is relevant to the study since it advocates for evidence-based monitoring by baseline surveys, performance indicators, project outcomes and the eventual impacts of the project. Therefore, through best monitoring practices the project objectives are measured following the pathway given by the theory of change during the project initiation. The relevance of this can be attributed to the interaction between the dependent variable and the independent variables. This study will look at the critical success factors in project monitoring that contributes to the successful implementation of projects. These critical factors will be the dependent variables for the study will be the success of projects.

2.7 Conceptual Framework

The interrelationships in study variables is as depicted in the framework in Figure 2.1

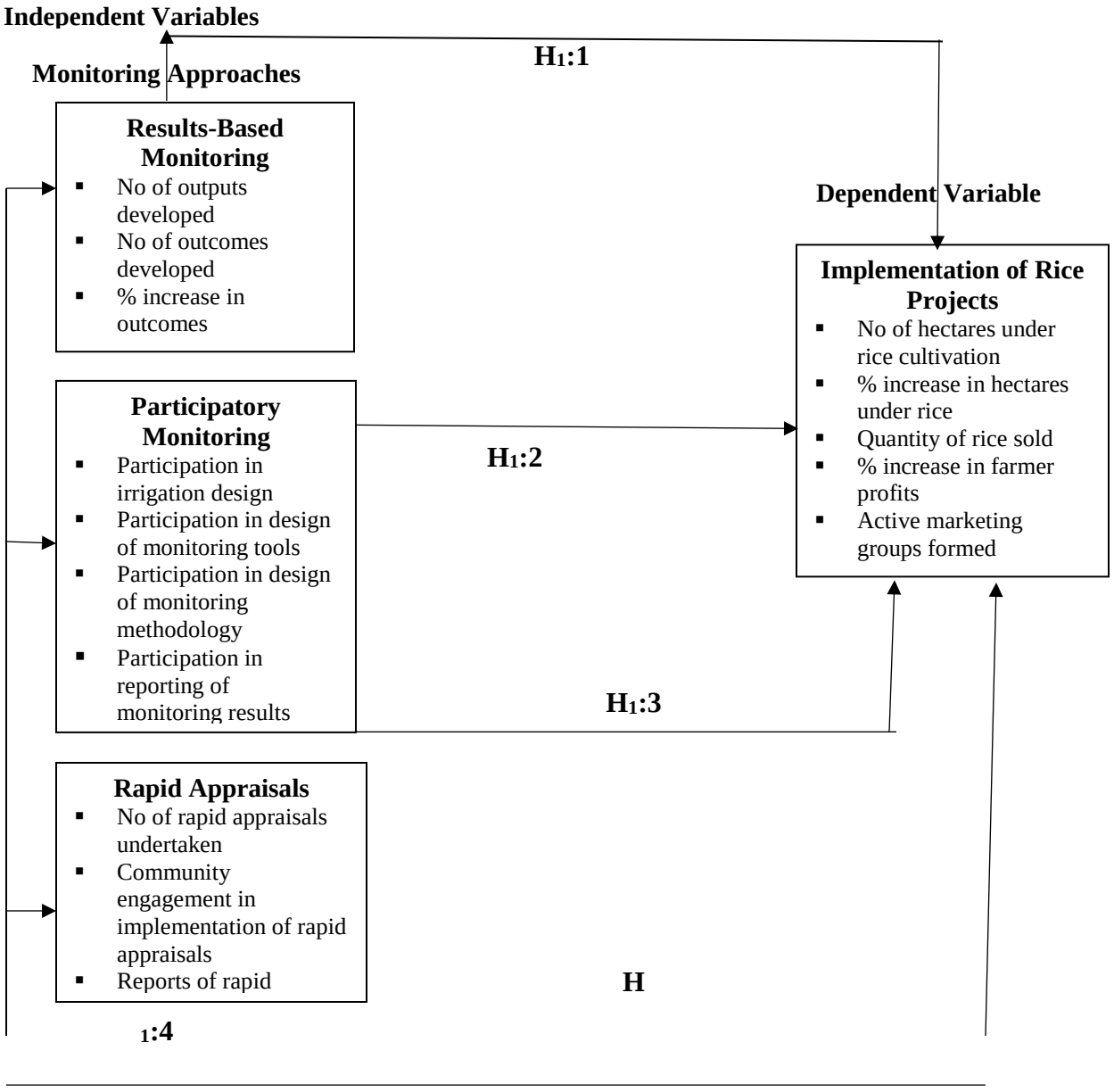

Figure 2.1: Conceptual Framework

2.8 Research Gap

Research gap identified after reviewing literature is as shown in Table 2.1

Table 2.1 Research Gap

Objective	Year and Author	Focus of the Study	Findings	Knowledge Gap
Results Based Monitoring	Phillip et, al (2008)	Influence of Results-Based Monitoring on the implementation of rural development projects	Found significant existent relationships between variables	This study focuses on the extent to which Results-Based Monitoring influences the implementation of rice projects
Participatory Monitoring	Ikal, (2009)	Influence of Participatory Monitoring on Performance of ICT-based interventions	Found significant existent relationships between variables	This study focuses on the extent to which participatory monitoring approaches influences the implementation of rice projects
Rapid Appraisals	Gaither, (2015)	Influence of Rapid Appraisals on Performance of development initiatives in Sub-Saharan Africa	The study exemplified significant existent relationships between the variables under study	This study focuses on the extent to which rapid appraisals and related approaches influence the implementation of rice projects
Monitoring Approaches	Papke-Shields (2010)	Influence of key monitoring approaches on Performance of rural-based interventions	The study found significant existent relationships between variables	This study focuses on the extent to which three monitoring approaches influence the implementation of rice projects

2.9 Summary of Literature Review

Prior studies have identified and underscored the need to embrace monitoring approaches in the implementation of projects, so as to track the achievement project objectives and assess the need for change of strategies.

Project success is measured by measured by product and project quality, timeliness, budget compliance, and degree of customer satisfaction. This can only be achieved, according to the literature reviewed on this study, when the monitoring approaches are being utilized in the project management.

Pretorius et al (2012) found out that project management organizations with mature time management practices produce more successful projects than project management organizations with less mature time management practices.

Results-based monitoring is a critical component of project monitoring with indicators that are clues, signs or markers that measure one aspect of a program and show how close a program is to its desired path and outcomes (Risk and Kusek, 2004). They are used to provide benchmarks for demonstrating the achievements of a program. One of the most critical steps in designing an M&E system is selecting appropriate indicators. The M&E plan should include descriptions of the indicators that will be used to monitor program implementation and achievement of the goals and objectives. An indicator is a variable that measures one aspect of a program or project that is directly related to the program's objectives (Philip et al, 2008).

Participatory monitoring & evaluation (PM&E) is a process through
which stakeholders at various levels engage in monitoring or evaluating a particular project, program or policy, share control over the content, the process and the results of the monitoring and evaluation activity and engage in taking or identifying corrective actions. PM&E focuses on the active engagement of primary stakeholders (World Bank, 2010).

Participatory evaluation can, therefore, provide more comprehensive information on efficiency, sustainability, impact and effectiveness of work in progress. By learning from mistakes, it can lead to timely corrective action

Rapid rural appraisals part and parcel of participatory evaluation being stimulated and challenged is that of institutional change in general (Guijt, 1999).

Sometimes appraisals as a form of monitoring can provoke curiosity of stakeholders to become more involved. For example, in Paraíba, data on community-based seed banks was collected by an NGO but then systematized and analyzed with the local seed bank committees and communities. This event provoked much local discussion and has encouraged the seed bank committees to consider developing their own monitoring systems, rather than participate in the NGO-driven process (Guijt, 1999).

From the above literature and the available empirical studies it is therefore confirmed that the monitoring approaches namely; result-based monitoring, participatory monitoring and rapid appraisals form a critical success points for the implementation of projects.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter will detail the research methodology employed in this study which is the research design, the target population, sample size selection and sampling procedures, data collection techniques, pilot testing, validity and reliability of research instruments, data analysis techniques, operational definition of variables and ethical considerations.

3.2 Research Design

This study employed descriptive survey design due to a number of reasons a major one being its capacity of delivering high quality data and ability to collect large amounts of data with a wide and inclusive coverage (Denscombe, 2007). Moore and McCabe (2006), asserts that descriptive research endeavors to describe systematically a situation, problem or a service and provides information about, for example a living condition of a community at the time of the research. Quantitative data will be collected by use of questionnaires and qualitative data will be collected by means of FDGs and KIIs. The research will be conducted in Mwea Irrigation scheme, Kirinyaga County.

3.3 Target Population

Target population for this study was 7,022 farmers currently being supported under the scheme. According to Krishnaswami, (2002), the Target population is the specific population upon which the study survey is done. Other authors such as Kothari (2004) and Mugenda and Mugenda (2003 have described the target population as set of people or elements that are under study.

Target population in this study will include all the 7022 farmers. The unit of analysis will be an individual farmer who has benefitted from the irrigation project in the scheme.

Table 3.1: Target Population

Cluster	Target Population	Sample Size
Scheme Farmers	6,622	360
Out growers	400	22
Total	**7,022**	**382**

3.4 Sample Size and Sampling Procedure

In this study, individual sample sizes for scheme farmers and out growers were determined using proportionate sampling method followed by simple random sampling. The sampling unit for study were individual farmers. Shields, (2013) argue that precision rate and desired confidence level are crucial determinants of sample size**.**

3.4.1 Sample Size

Sample size for this study was 382 individuals determined using the simplified Krejcie and Morgan, (1970) Table.

3.4.2 Sampling Procedures

According to Orodho and Kombo (2002) sampling is a process of selecting a number of individuals or objects from a population such that the selected group contains elements representative of the characteristics found in the entire group. Singleton, (1998) further explains that it is the process of selecting a few cases from a large population for studying them and generalizing on the large population.

From target population of 7022, National Irrigation Board (2018), sample of this research was selected using proportionate random sampling where different projects within Mwea Irrigation Scheme were put in strata accordingly, and then a sample size selected from each of the stratum.

3.5 Research Instruments

The questionnaire was used to collect quantitative data while focus group discussions were be used to collect qualitative data. Key informant interviews with experts were conducted to collect specialized information from professionals who had direct engagement with scheme beneficiaries. The key informants included project team from National Irrigation Board and extension officers. The structured questionnaire will had 5 sections. A likert scale generated conformed to the following connotation (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree.

3.5.1 Pilot-Testing of the Research Instrument

A pilot study was conducted to examine the appropriateness, reliability and validity of all research instruments. The pretest sample was of 10% of the target population (Mugenda and Mugenda, 2003) who were exempted from the actual study. Pilot-testing was done to identify and rectify any errors in the data collections instruments. This process was held two weeks prior to the main study.

3.5.2 Validity of the Research Instrument

Validity of a research instrument is the measure of how well a test measures what it is purported to measure (Cozby, 2001). According to Mugenda, 2008), validity is used to refer to the appropriateness, meaningfulness and usefulness of the inferences a researcher makes, while reliability is a measure of degree to which a research instrument yields consistent results or data after Content and construct validity was adopted in this research.

3.5.3 Reliability of the Research Instrument

This study used Cronbach's Alpha to ensure the reliability of the research instrument which in this case is a questionnaire. According to Cozby (2001) reliability is the ability of an apparatus, machine, or system to consistently perform its intended or required function or mission, on demand and without degradation or failure. Therefore reliability of a research instrument is the extent to which the instrument of the research tools will be consistent in giving the same information when measured in different times under same conditions. Reliability is consistency and dependability of data collected through repeated use of a

scientific instrument or data collection procedure under the same conditions (UNDP, 2002).

Cronbach's Alpha coefficient that tested the reliability of the questionnaire give a score of 0.825. This is lies within the acceptable reliability measure since it is consistent with Nunnally's observation for basic research which states that reliability between 0.5 and 0.6 is adequate for research. Since the questionnaire for this research reported an overall Cronbach's Alpha coefficient of 0.825, this is considered a strong measure of internal consistency using likert scale items examined in this study. Reliability of the questionnaire is therefore shown in Table 3.2.

Table 3.2: Cronbach's Alpha Values for the Questionnaire

Section	Questionnaire Focus	Cronbach's Alpha Value
Section B	Results-Based Monitoring	0.755
Section C	Participatory Monitoring	0.872
Section D	Rapid Project Appraisal	0.801
Section E	Implementation of Rice Projects	0.872
Overall Reliability		**0.825**

3.6 Data Collection Procedures

Primary data was used for this research and the unit for data collection was individual farmer. Two college students were recruited as research assistants to help collect the quantitative data and they were trained on various ethical issues such as data management, interview techniques before being allowed to go the field.

To be within the ethical considerations letters of transmittal of data collection expressing the desire to undertake research were dispatched and posted in strategic locations in the scheme before the actual data collection. A researcher permit was also obtained that detailed the authority to conduct this study. The same was given to the research assistants to facilitate their legitimacy in data collection

A total number of 382 questionnaires were printed and distributed equally to two research assistants for onward distribution.

3.7 Data Analysis Techniques

Data collected is normally in large volumes that needs to be extracted into manageable size, summaries and patterns by applying statistical techniques to come up with information that answered the research questions of the study and present them in manner that is presentable and that can be understood. This process can involve data management which is basically cleaning of data, sorting, identification and elimination of repeated data and also location of the missing data. Therefore, data analysis can be defined as the process of inspecting, cleaning, and transforming and modelling of data (Cozby, 2001).

Quantitative data was analysed by statistical software called Statistical Package for Social Sciences (SPSS) for mean, frequencies, standard deviation and results were presented in tables. The mean was to give the trend of the data set whereas standard deviation gave the spread from the mean. Regression and correlation analysis were also used to analysis the extent of the relationship between the dependent and independent variables and also determine the strength of the relationship. Finally qualitative data was analysed using data entry matrix that was meant to reflect different categories and then tabulated according to frequencies.

3.8 Ethical Considerations

A number of ethical issues were taken into considerations during this research and they are as follows;

1. Research permit. The research permit was obtained from National Commission for Science, Technology and Innovation that allows a researcher to collect data legally according to the Kenya laws. This allows a research to be able to interview and administer a questionnaire to the target population.
2. Confidentiality. This was observed by not requiring the respondents to disclose their names in the data collecting tools such as the questionnaire. In this regard the strict standard of anonymity was employed which means that study participants remained anonymous throughout the study even to the researcher.

3. Truthfulness. The researcher strived to maintain truthfulness in reporting data results by ensuring that there is no fabrication, falsehood, or any misrepresentation of data.
4. Unbiases. The researcher avoided bias in research design, data analysis and interpretation among others and honored patents, copyrights, and other forms of intellectual property by accrediting and acknowledging of contributions from various parties.

3.9 Operationalization of Variables

The operational definition of study variables is as shown in Table 3.3

Table 3.3: Operationalization of Study Variables

Variable	Indicator	Scale of Measurement	Type of Statistical Analysis	Analysis Tool
Results-Based Monitoring	No of outputs developed No of outcomes developed % increase in outcomes Engagement of beneficiaries in tracking results	Interval	Parametric	Regression Correlation Central Tendency Measures of Dispersion
Participatory Monitoring	Participation in irrigation design Participation in design of monitoring tools Participation in design of monitoring methodology Participation in reporting of monitoring results	Interval	Parametric	Regression Correlation Central Tendency Measures of Dispersion
Rapid Project Appraisals	No of rapid appraisals undertaken Community engagement in implementation of rapid appraisals Reports of rapid appraisals implemented/executed	Interval	Parametric	Regression Correlation Central Tendency Measures of Dispersion
Implementation of Rice Projects	No of hectares under rice cultivation % increase in hectares under rice Quantity of rice sold % increase in farmer profits Active marketing groups formed	Interval	Parametric	Regression Correlation Central Tendency Measures of Dispersion

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents data collected on influence of monitoring approaches on the implementation of rice projects in Mwea irrigation scheme in a manner that gives logical interpretation of research findings. The collected data was analyzed based study themes developed from the objectives of the study using SPSS version 20.0 and presented in cross tabulation tables with frequencies and percentages. Data was interpreted based on the findings of the study. These findings were compared with qualitative assertions obtained from FGD's. Descriptive and inferential statistics were employed.

4.2 Questionnaire Response Rate

Out of the 382 questionnaires that were administered, 308 questionnaires were returned while fully filled representing 76.9 % response rate. Mugenda and Mugenda (2003), states that a response rate of 50% is adequate, whereas a response rate of more than 70% is very good, the response rate in this study was considered sufficient to be used for making sound inferences. Hence the response rate obtained satisfactory and is indicated in Table 4.1.

Table 4.1: Questionnaire Response Rate

Cluster	Sample Size	Responses	Response Rate %
Scheme Farmers	360	292	81.1
Out growers	22	16	72.7
Total	**382**	**308**	**76.9%**

4.3 Demographic Characteristics of Respondents

The study sought to gather information on demographic characteristics of respondents that related to influence of monitoring approaches on the implementation of rice projects in Mwea irrigation scheme. The information gathered included gender, age of respondents, highest level of education, and literacy level of respondents, average income, and number

of years in rice farming among others. The demographic characteristics of respondents obtained are tabulated as follows:

Table 4.2: Distribution of Respondents by Gender

Gender	Frequency	Percentage
Female	145	47
Male	130	42.2
Missing Response	33	10.7
Total	**308**	**100**

From Table 4.2 it is clear that gender distribution was even with 47% female and 42% male satisfy constitutional threshold 30% either gender in development matters.

4.3.1 Distribution of Respondents by Age

Table 4.3: Distribution of Respondents by Age

Age Bracket	Frequency	Percentage
20-25 Years	15	4.8
31-35 Years	45	14.6
36-40 Years	57	18.5
40-45 Years	138	44.8
Over 45 Years	53	17.2
Total	**308**	**100**

Age distribution was employed while analyzing the study population.

Table 4.3 indicates cross tabulation by age where most respondents (14.6%) were found to be above 31 years and majority (44.8%) were over 40 years. Respondents between the ages of 20-25 years were the least at 4.8% of the sampled population. This distribution is as shown in Table 4. 3:

To measure the level of experience the farmers have on rice farming the distribution of respondents by age is a powerful attribute that can inform the reliability of data obtained

from the farmers. It was assumed that more reliable data would be obtained from more experienced (aged) respondents.

4.3.2 Distribution of Respondents by Highest Level of Education

Table 4.4: Distribution of Respondents by Highest Level of Education

Highest Level of Education	Frequency	Percentage
No Formal Education	23	7.4
Primary School Level	120	38.9
Secondary School Level	145	47.07
Certificate Level	15	4.8
Diploma Level	5	1.6
Total	**308**	**100**

According to the table above 38.9% of the respondents had attained the primary school level of qualification while 47.07% of respondent had attained the secondary education. Also over 5.9% of respondents had post-secondary level of education. Table 4.4 shows the distribution of the level of education by respondents.

Understanding questionnaires and parameters measured in it is shaped by the level of education. That is why this measure was important. Higher education levels are desirable in any research since educated respondents would not only understand the study parameters but also articulate items more effectively. As shown on Table 4.4, this study therefore obtained data from well informed farmers with better levels of education.

4.3.3 Distribution of Respondents by Level of Literacy

It was found that a very large number of respondents in this study were literate, with 84.3% of them being able to read and write without difficulty. This therefore imply that the study findings were based on better informed respondents. The distribution of respondents by levels of literacy is as shown in Table 4.5:

Table 2.5: Distribution of Respondents by Level of Literacy

Level of Literacy	Frequency	Percentage
Can Read	10	3.24
Can Write	25	8.11
Can Read and Write	215	69.8
Cannot Read and Write	40	12.98
Missing Response	18	5.84
Total	**308**	**100**

High levels of literacy can be attributed to their levels of education seen previously in Table 4.6. Combination of the education and literacy levels of study respondents is an indication of more reliability of the results under this study. Better educated farmers are ideally more aware and better informed. Literacy and levels of education were desirable in this study since enlightened farmers would understand what was being investigated more easily and respond appropriately. The distribution of respondents by age is significant since it would be useful in indicating levels of farming experience; a parameter that would have a direct impact on reliability of data obtained. Reliable data would be obtained from more aged.

Table 4.6: Distribution of Respondents by Number of Year in Farming

Number of Years	Frequency	Percentage
Less than 1 Year	15	4.8
2- 5 Years	35	11.36
6-10 Years	69	22.4
11- 15 Years	158	51.29
Above 16 Years	31	10.06
Total	**308**	**100**

4.4 Descriptive Statistics

In this section, frequencies and respective percentages are used to present distribution of responses. Consequently, mean is used to present the average responses and standard deviation to report how far the responses are from the mean. The total number of respondents is represented by N, while the number of respondent to a particular category is represented by n. A Likert scale comprising of responses from strongly disagree (SD) to strongly agree (SA) was used to indicate responses. The Descriptive statistics is as below.

4.4.1 Descriptive Statistics for Implementation of Rice Projects

A structured questionnaire was designed with a purposive question that were meant to capture the variable 'implementation of rice projects' was. The descriptive analysis of the indicators under this variable that specifically include; increased farm productivity, accessed more support, increased farm profits, sold produce more easily and farmers encouraged to produce more. These parameters were measured and are reported in Table 4.4

Table 4.4: Descriptive Statistics for Implementation of Rice Projects

		Frequency and Percentages							
Description		SD	DS	NE	AG	SA	N	Mean	SDV
Increased farm productivity	n	0	5	38	98	110	250		
	%		2%	14.7%	38.2%	43.1%	98%	4	1
Accessed more Support	n	0	13	35	155	48	250		
	%		4.9%	13.7%	60.8%	18.6%	98%	3.95	0.73
Increased farm profits	n	0	53		108		248		
	%		20.6%	15 5.9%	42.2%	73 28.4%	97.1%	3.81	1.09
Sold produce more easily	n	2.5		30	138		250		
	%	1%	8 2.9%	11.8%	53.9%	73 28.4%	98%	4.08	0.79
Encouraged me to produce more rice	n	45							
	%	17.6%	75 29.4%	33 12.7%	35 13.7%	60 23.5%	248 97.1%	2.96	1.47

SA = Strongly agree, AG = Agree, NE = Neutral , DS= Disagree, SD = Strongly disagree, n = Number of Responses, N= Sample Size, SDV = Standard Deviation

From Table 4.4 , it was observed that quite a large number 81.3% (agreed and strongly agreed) were of the opinion that since they were enlisted on project, their productivity had increased. Nonetheless, 15% were neutral about the contribution of the projects to productivity, while 2%, of all respondents disagreed that the projects had contributed to increase in productivity on their farms. In general, it could be seen that productivity of the farmers responded positively to these projects, this is supported by the mean response of 4 which coincides to agree in the distribution. The standard deviation of 1 was small, implying that a lot of the responses were close to the mean, as most of them tended to agree.

4.4.2 Descriptive Statistics for Result-Based Management

Table 4.5: Descriptive Analysis for Results-Based Management

		Frequency and Percentages							
Description		SD	DS	NE	AG	SA	N	Mean	SDV
Developed results	n								
matrix	%	33	53	27.5	105	35	253		1.28
		12.7%	20.6%	10.8%	41.2%	13.7%	99%	3.23	7
Developed project	n								
outputs	%	23	80	23	75	55	255		1.33
		8.8%	31.4%	8.8%	29.4%	21.6%	100%	3.24	6
Developed Project	n								
outcomes	%	2.5	23	40	110	80	255		0.95
		1%	8.8%	15.7%	43.1%	31.4%	100%	3.95	8
Involved in tracking	n								
project results	%	15	18	48	123	53	255		1.05
		5.9%	6.9%	18.6%	48%	20.6%	100%	3.71	9
Project results	n	20	83	38	75	40	255		1.24
satisfactory	%	7.8%	32.4%	14.7%	29.4%	15.7%	100%	3.13	8

SA = Strongly Agree, AG = Agree, NE = Neutral , DS= Disagree, SD = Strongly Disagree, n = Number of Responses, N= Sample Size, SDV = Standard Deviation

The section of results-based management in the questionnaire was to verify that farmers actually participated in monitoring of rice project interventions. To capture this aspect, various questions were administered regarding this parameter so as to make inquest if farmers participated in these projects; developed results matrix, developed project outputs, developed project outcomes been involved in tracking project results, project results been successful and project results been satisfactory. Responses obtained are shown in Table 4.5

From Table 4.13, 50% (41.2% and 13.7%) of the farmers agreed that they participated in the developing project matrix and design meetings used to layout the projects. Nonetheless, a significant number 33% (12.7% and 20.6%) disagreed hence they did not participate in any meetings. The average response was at 3.23 which imply that average distribution of the responses was neutral, there was therefore no conclusive evidence about this indicator. On the aspect of tracking project results, 31.4% of respondents disagreed that they were involved. However, an accumulation of 29.4% (agree) and 21.6% (strongly agree) indicate that at least 50% of the respondents participated in developing project outputs.

The average response stood at 3.24, implying neutrality, thus on the indicator; participation in meetings, farmers were neutral hence no strong views were found on this parameter. Neutral findings were also expressed on most of the indicators under this section. On average, response distribution stood at 3.71 which was approximately 4; that indicate on average the respondents agree that they participated in designing the monitoring instruments.

4.4.3 Descriptive Statistics on Participatory Monitoring

Table 4.6: Descriptive Analysis for Participatory Monitoring

		Frequency and Percentages							
Description		SD	DS	NE	AG	SA	N	Mean	SDV
Involved in Project design	n	33	53	27.5	105	35	253		1.28
	%	12.7%	20.6%	10.8%	41.2%	13.7%	99%	3.23	7
Involved in developing objectives	n	23	80	23	75	55	255		1.33
	%	8.8%	31.4%	8.8%	29.4%	21.6%	100%	3.24	6
Involved in Routine tracking	n	2.5	23	40	110	80	255		0.95
	%	1%	8.8%	15.7%	43.1%	31.4%	100%	3.95	8
Involved in tracking project results	n	15	18	48	123	53	255		1.05
	%	5.9%	6.9%	18.6%	48%	20.6%	100%	3.71	9
Involved in project reporting	n	20	83	38	75	40	255		1.24
	%	7.8%	32.4%	14.7%	29.4%	15.7%	100%	3.13	8

SA = Strongly Agree, AG = Agree, NE = Neutral , DS= Disagree, SD = Strongly Disagree, n = Number of Responses, N= Sample Size, SDV = Standard Deviation

The descriptive statistics on participatory monitoring in the questionnaire was undertaken to verify if rice farmers actually participated in monitoring of rice project interventions. To capture this aspect, various questions were administered regarding this parameter so as to make inquest if farmers participated in these projects. Parameters measured included; farmers involved in project design, involved in developing project outputs and outcomes, involvement in developing project objectives and involvement in routine project tracking. Responses obtained are shown in Table 4.6 where the average response was at 3.23 which imply that average distribution of the responses was neutral, there was therefore no conclusive evidence about this indicator. On the aspect of involvement in tracking project results, 31.4% of respondents disagreed that they were involved. However, accumulation of 29.4% (agree) and 21.6% (strongly agree) indicate that at least 50% of the respondents participated in developing project outputs

From Table 4.6, 50% (41.2% and 13.7%) of the farmers agreed that they participated in the development of project design and objectives and 23% were involved in routine tracking. Nonetheless, a significant number 33% (12.7% and 20.6%) disagreed hence they did not participate project tracking activities. The average response was at 3.23 which imply that average distribution of the responses was neutral, there's therefore no conclusive evidence about this. On the aspect of tracking project results, 31.4% of respondents disagreed that they were involved. However, an accumulation of 29.4% (agree) and 21.6% (strongly agree) indicate that at least 50% of the respondents participated in developing project outputs.

The average response stood at 3.24, implying neutrality, thus on the indicator; participation in meetings, farmers were neutral hence no strong views were found on this parameter. Neutral findings were also expressed on most of the indicators under this section. On average, response distribution stood at 3.71 which was approximately 4; that indicate on average the respondents agree that they participated in designing the monitoring instruments.

4.4.4 Descriptive Statistics for Rapid Appraisal

Table 4.7: Descriptive Analysis for Rapid Appraisal

		Frequency and Percentages							
Description		SD	DS	NE	AG	SA	N	Mean	SDV
Developed appraisal techniques	n	33	53	27.5	105	35	253		1.28
	%	12.7%	20.6%	10.8%	41.2%	13.7%	99%	3.23	7
Was part of the appraisal team	n	23	80	23	75	55	255		1.33
	%	8.8%	31.4%	8.8%	29.4%	21.6%	100%	3.24	6
Involved in appraisal outcomes	n	2.5	23	40	110	80	255		0.95
	%	1%	8.8%	15.7%	43.1%	31.4%	100%	3.95	8
Involved in appraisal outputs	n	15	18	48	123	53	255		1.05
	%	5.9%	6.9%	18.6%	48%	20.6%	100%	3.71	9
Excellent appraisal techniques used	n	20	83	38	75	40	255		1.24
	%	7.8%	32.4%	14.7%	29.4%	15.7%	100%	3.13	8

SA = Strongly Agree, AG = Agree, NE = Neutral , DS= Disagree, SD = Strongly Disagree, n = Number of Responses, N= Sample Size, SDV = Standard Deviation

The descriptive statistics on rapid appraisal parameter in the questionnaire was undertaken to verify if rice farmers actually participated in monitoring of rice project interventions. To capture this aspect, various questions were administered regarding this parameter so as to make inquest if farmers participated in these projects. Parameters measured included; farmers involved in the development of project appraisal techniques, farmers being part of the appraisal team, involvement in the development of appraisal outputs and outcomes, excellent appraisal techniques used and appraisal techniques rated very successful. On this aspect of project appraisal, 31.4% of respondents disagreed that they were involved. Meaning 0. 695 of respondents were involved in the appraisal process.

From Table 4.7, 50% (41.2% and 13.7%) of the farmers agreed that they participated in the development of project design and objectives and 23% were involved in routine tracking. Nonetheless, a significant number 33% (12.7% and 20.6%) disagreed hence they did not participate project tracking activities. The average response was at 3.23 which imply that average distribution of the responses was neutral, there's therefore no conclusive

evidence about this. On the aspect of tracking project results, 31.4% of respondents disagreed that they were involved. However, an accumulation of 29.4% (agree) and 21.6% (strongly agree) indicate that at least 50% of the respondents participated in developing project outputs.

The average response stood at 3.24, implying neutrality, thus on the indicator; participation in meetings, farmers were neutral hence no strong views were found on this parameter. Neutral findings were also expressed on most of the indicators under this section. On average, response distribution stood at 3.71 which was approximately 4; that indicate on average the respondents agree that they participated in designing the monitoring instruments.

4.5 Correlation Analysis

Table 4.8: Correlation Matrix

		Implementation of Rice Projects	Participatory Monitoring	Results-Based Monitoring	Rapid Project Appraisal
Implementation of Rice Projects	Pearson Correlation	**1**			
	Sig. (2-tailed)				
	N	**245**			
Participatory Monitoring	Pearson Correlation	**.599****	1		
	Sig. (2-tailed)	**0**			
	N	**240**	250		
Results-Based Monitoring	Pearson Correlation	**.503****	.634**	1	
	Sig. (2-tailed)	**0**	0		
	N	**225**	228	233	
Rapid Project Appraisal	Pearson Correlation	**.687****	.731**	.584**	1
	Sig. (2-tailed)	**0**	0	0	
	N	**235**	238	225	243

** Correlation is significant at the 0.01 level (2-tailed).

Correlation analysis was undertaken to demonstrate relationships among the variables of this study. Distribution of responses discussed earlier show some relationships amongst the

study variables, hence correlation was used show distribution of response on a particular indicator. To verify relationships amongst and between variables under study, a correlation analysis on variables was conducted using the Pearson moment correlation, to explore the direction of the relationships between independent variables against dependent variable. This was determined by checking the positive or negative value before the coefficient of determination (r). Strength of the relationship was based on looking at the correlation value of (r) where a rank (r) of 1 imply perfect positive correlation, a rank of 0.10<r>0.29 implies a weak positive correlation, a rank of 0.30<r>0.50 implies a positive moderate correlation, a rank of 0.5<r>1 implies a strong positive correlation, a rank (r) of -1 implies a perfect negative correlation, a rank of -0.29<r>-0.10 implies a weak negative correlation, a rank of -0.50<r>-0.30 implies moderate negative correlation, a rank of -1<r>-0.5 implies a strong negative correlation.

Since variables in this study were measured on a likert scale, Pearson product moment correlation was used to verify these relationships which was set at a 95% confidence level. This therefore means that any sample proportion (p) that was found to be less or equal to 0.05 is statistically significant. The results of the correlation are presented in Table 4 8:

From the correlation findings, it was demonstrated that all the independent variables were positively correlated with dependent variable as seen in Table 4.8. Results based monitoring was highly positively correlated with implementation of rice projects at a correlation coefficient of 0.599. This correlation is statistically significant at 1% level of significance. This implies that an increase in the application of results-based monitoring as an approach, then implementation of rice projects also improved further. Rapid project appraisal was highly positively correlated with the implementation of rice projects, with a coefficient of 0.687 which was significant at 1% level of significance. This therefore imply with increases application of rapid appraisals in tracking project progress, the implementation of rice projects became better or improved accordingly.

Participatory monitoring also positively correlated with implementation of rice projects, but the magnitude of the correlation was moderate. The correlation between participatory monitoring and implementation of projects was high and positive. This imply there exists

a high positive significant correlation between participatory monitoring and implementation of rice projects at 0.731, with 1% level of significance.

4.6 Hypothesis Testing

The results of the analysis are presented in Table 4.9:

Table 4.9: Hypothesis Test Results for Monitoring Approaches and Implementation of Rice Projects

Model Summary	**Model 1 (Coefficients)**	**Model 2 (Coefficients)**
Constant	6.713 (4.740)	3.835 (4.925)
Results-Based Monitoring	0.045 (0.088)	0.007 (0.096)
Participatory Monitoring	0.257[d]*** (0.136)	0.216[d]** (0.078)
Rapid Appraisals	0.618[d]*** (0.136)	0.708[d]*** (0.145)
Coefficient of correlation (R)[a]	0.774	0.791
R-squared (R^2)	0.599	0.626
Adj. R-squared	0.585	0.607
Durbin-Watson (DW)	1.623	1.516

a. Dependent Variable: Implementation of Rice Projects
b. Predictors: (Constant), Results-Based Monitoring, Participatory Monitoring and Project Rapid Appraisals
c. Predictors: (Constant), Results-Based Monitoring, Participatory Monitoring and Project Rapid Appraisals
d. ***P<0.01 (99% confidence level), **P<0.05(95% confidence level), *P<0.1(90% confidence level).

Hypotheses related the research objectives were tested with quantitative and qualitative components of this research. Findings from both qualitative and quantitative phases of the study have been presented and discussed. Qualitative data was later analyzed to identify areas of convergence, divergence or even statements of interest related to study outcomes. Whereas the quantitative phase of this study was preoccupied with testing hypotheses, in a bid to establish relationships between variables under study, the qualitative component was mainly used for triangulation purposes. Findings from the qualitative phase of the study

were utilized to gain deeper understanding of the relationships to be tested as well as to clarify meanings behind quantitative findings. Responses were organized in themes, just as they were presented during the FGDs so as to facilitate quick analysis and for emerging conclusions to be drawn. Statistical analyses were undertaken using SPSS 22.0.

This study hypothesized a positive relationship between independent variables and the dependent variable. The study hypotheses were tested through linear regression and multiple regression analyses. Regression was considered appropriate since dependent, moderating and independent variables were all measured on interval scale. Since the visual representation of normality was symmetrical, this distribution was adjudged to be normal, hence amenable to regression tests. Moreover, Pearson (r) has is noted to be insensitive to the extreme violation of the basic assumptions of normality and the type of scale (Norman, 2010).

The model developed and used to test the hypothesis is: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$

Where: Y= Implementation of Rice Projects,

X_1=Results-Based Monitoring

X_2= Participatory Monitoring

X_3= Rapid Project Appraisal,

β_0 and β_1 are coefficients.

From the hypotheses tested all the four postulated alternate hypotheses were found significant to the implementation of rice projects. We therefore accept the alternate hypotheses and accept the following four hypothesis: that there is a significant relationship between results-based monitoring and the implementation of rice projects in Mwea irrigation scheme; there is a significant relationship between participatory monitoring and the implementation of rice projects in Mwea irrigation scheme, there is a significant relationship between rapid appraisals and implementation of rice projects in Mwea irrigation scheme and finally there exists is a significant relationship between monitoring approaches and the implementation of rice projects in Mwea irrigation scheme.

These findings corroborate evidence by other M&E commentators that indeed various project monitoring approaches influence the performance of projects. Project monitoring is indeed a critical component that facilitates or improves program delivery.

4.7 Discussion of Findings

There were three research questions that study sought to respond to as well as objectives and hypothesis that various test statistics were employed on. All the quantitative and qualitative data was thoroughly examined to ensure they were computed and coded accordingly just before the data analysis. External validity was enhanced by establishing the response rate. A response rate of 70% is considered to be good enough (Babbie, 1990). Accordingly, Sivo et al., (2006) asserts that high response rate is one of the factors that enhance the external validity. In this study the response rate was 76.9 %.

Various assumptions of quantitative data were tested to establish the appropriateness which included normality, homogeneity of variance interval data and independence. From this testing the data satisfied normality and the other assumptions. The mixed method approach was applied to examine the research questions. Previous research in the field of project monitoring and evaluation particularly on the aspect of project performance tended to rely on pure forms of research with majority of the studies utilizing descriptive survey designs. The approach used allowed the determination of relationship between the dependent and independent variables hence the use of the word influence to examine how the dependent variable is predicted by independent variables as well as the direction and extent of the relationship.

Both the quantitative and qualitative have asserted that the three monitoring approaches influence the implementation of rice projects. Results-based monitoring influence the implementation of rice projects by $F(2,208)=26.224; P<0.05; R^2=0.244$); participatory monitoring influence the implementation of rice projects to an extent $F(2,208)=42.576, P<0.05; R^2=0.467$) and rapid appraisals influence the implementation of rice projects to an extent of $F(2,208)=58.243, P<0.05; R^2=0.484$) and that when all the monitoring approaches are considered jointly, they influence implementation of rice projects at $F(3,208)=33.476$ $P<0.05; R^2=0.585$).

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings of the study and helps in drawing conclusions from data analyzed and proposes a number of recommendations for the growth of the project monitoring and evaluation discipline. The findings of the study have been summarized according to objectives of the study that are: to establish influence of results-based monitoring on implementation of rice projects in Mwea irrigation scheme; to examine influence of participatory monitoring on implementation of rice projects in Mwea irrigation scheme and to assess the influence of rapid appraisals on the implementation of rice projects in Mwea irrigation scheme. It Finally gives conclusions and recommendations

5.2 Summary of Findings

This study sought to examine of monitoring approaches on the implementation of rice projects. The study was achieved by testing four research hypotheses, the study employed descriptive survey design, this study sought to understand extent to which respondents who participated in the various monitoring approaches from project design, to implementation as well as reflection and participation in mid-term review of these projects understood and appreciated the importance of project monitoring. From the study findings, it is clear that results based Results-based monitoring influence the implementation of rice projects by $F(2,208)=26.224; P<0.05; R^2=0.244$); participatory monitoring influence the implementation of rice projects to an extent $F(2,208)=42.576, P<0.05; R^2=0.467$) and rapid appraisals influence the implementation of rice projects to an extent of $F(2,208)=58.243, P<0.05; R^2=0.484$) and that when all the monitoring approaches are considered jointly, they influence implementation of rice projects at $F(3,208)=33.476\ P<0.05; R^2=0.585$). In conclusion, findings from this study as affirmed through multiple regression and testing of the study hypothesis and F-values obtained affirms the widely held view by many commentators such as; Pollack, (2007); Crawford and Bryce, (2003), Shenhar, (2011) and Mulwa, (2006) that monitoring processes are indeed helpful in improving the performance of projects including implementation dynamics. Summary of the hypotheses test results are shown in Table 5.1.

Table 5.1: Summary of Hypotheses Test Results and Findings

Study Objective	Study Hypothesis	Test Results	Interpretation
To establish influence of results-based monitoring on implementation of rice projects in Mwea irrigation scheme.	There is a significant relationship between results-based monitoring and the implementation of rice projects in Mwea irrigation scheme**.**	F(2,208)=26. 224; P<0.05; R^2=0.244)	There exists a positive significant relationship between results-based monitoring and the implementation of rice projects
To examine influence of participatory monitoring on implementation of rice projects in Mwea irrigation scheme.	There is a significant relationship between participatory monitoring and the implementation of rice projects in Mwea irrigation scheme.	F(2,208)=42. 576, P<0.05; R^2=0.467)	There exists a positive significant relationship between participatory monitoring and the implementation of rice projects
To assess the influence of rapid appraisals on the implementation of rice projects in Mwea irrigation scheme.	There is a significant relationship between rapid appraisals and implementation of rice projects in Mwea irrigation scheme	F(2,208)=58. 243,P<0.05; R^2=0.484)	There exists a positive significant relationship between Rapid appraisals and the implementation of rice projects
To examine how monitoring approaches jointly influence implementation of rice projects in Mwea irrigation scheme	There is a significant relationship between joint monitoring approaches and implementation of rice projects in Mwea irrigation scheme	F (3,208) =33.476 P<0.05; R^2=0.585).	There exists a positive significant relationship between joint monitoring approaches and the implementation of rice projects

5.3 Conclusions

This study responded to the need to validate or refute the knowledge claims on the influence of monitoring approaches on the implementation of rice projects. The conclusions deduced from this study are organized according to the objectives of the study:

The four objectives of study sought to examine extent to monitoring approaches influenced the implementation of rice projects. It was confirmed from quantitative data analyzed that that all the variables under study influenced the implementation of rice projects to an extent of $F(2,208)=26.224; P<0.05; R^2=0.244$); for results based monitoring; participatory; $F(2,208)=42.576, P<0.05; R^2=0.467$) participatory monitoring; $F(2,208)=58.243, P<0.05; R^2=0.484$) and $F(3,208)=33.476\ P<0.05; R^2=0.585$) when all monitoring approaches are considered jointly using the F-values.

It is therefore safe to conclude that participatory monitoring approaches are essential components in implementation of projects and to large extend project performance. These findings confirm most commentator's assertions on role of monitoring approaches in project management especially in achievement of project outcomes (Abbot and Forward, 2000; Codd, 2011; Fraser et al., 2006; Aref, 2011). The study findings also confirm study hypothesis that there exists a positive significant influence between monitoring approaches and implementation of projects. The findings from this study therefore give credence and empirical evidence to the adoption and utilization of monitoring approaches in project's results measurement.

5.4 Recommendations

1. Contribution to Knowledge.

The findings of this study may have relevance to and become a critical repository for M&E knowledge for the industry and academia. The study findings could also become a key reference material for GoK and its agencies including County governments and NGO's keen on development programming. Since this study has helped clarify the role of project monitoring approaches, evidence attributed to this research will be useful for researchers and educationists keen to advance the M&E disciple. Study findings and empirical literature developed within this research will become a key reference material for M&E students around the World. Knowledge claims affirmed in this study will also form a basis of further research by researchers and practitioners.

2. Participatory Monitoring.

Results from this study have shown that whenever primary stakeholders and project stakeholders are involved in routine project monitoring, then desirable interventions and better performances are achievable. It is therefore imperative that participation in tracking project progress by beneficiaries be promoted at all costs. Both this study and other literature reviewed have shown that inviting participation in all the aspects of project monitoring, including the more technical data collection and analysis phases. Monitoring approaches therefore leads to effective project delivery and effective implementation.

Therefore, project management teams should engage stakeholders using multiple methods for ongoing communication and participation, building mutual trust and open communication in projects.

3. Suggestions for Further Research

This finding of this research forms a basis for further study on the factors that enhance or inhibit the application of some of the monitoring tools, approaches and concept in projects. This will enable the policy makers and the practitioners of M&E to be better equipped on how to embrace the monitoring approaches in project implementation so as to realize the desired objectives

REFERENCES

Abdul-Rahman, H., Wang, C., & Muhammad, N. A. B. (2011). Project performance monitoring methods used in Malaysia and perspectives of introducing EVA as a standard approach. Journal of Civil Engineering and Management, 17(3), 445-455

ADRA (2007). Monitoring and Evaluation Manual Prepared for ADRA International. Prepared by TANGO International, Inc.

Alhyari, S., Alazab, M., Venkatraman, S., Alazab, M. and Alazab, A. (2013) Performance evaluation of e-government services using balanced scorecard: An empirical study in Jordan, Benchmarking: An International Journal, 20 (4) 512 -536

Alotaibi, M. (2011). Evaluation of contractor performance for pre-selection in the Kingdom of Saudi (Doctoral dissertation). Loughborough University, Leicestershire, UK.

Al-Tmeemy, S. M. H. M., Abdul-Rahman, H., & Harun, Z. (2011). Future criteria for success of building projects in Malaysia. International Journal of Project Management, 29(3), 337-348.

Anderson A. (2005) an Introduction to Theory of Change. The Evaluation Exchange. Vol XI, No, 2 p12

Asaka, C. N., Aila, F. O., Odera, O., & Abongo, B. E. (2012) Projects selection and management implications in Kenyan local authorities. Asian Journal of Business and Management Sciences, 1 (10) 65-75

Baker, B. N., Murphy, D. C., & Fisher, D. (2008). Factors affecting project success. Project Management Handbook, Second Edition, 902-919

Barasa M. R. (2014) Influence of Monitoring and Evaluation Tools On Project Completion in Kenya: A Case of Constituency Development Fund Projects In Kakamega County, Kenya. An unpublished Master's Thesis submitted to the University of Nairobi.

Centre for Learning on Evaluation and Results (CLEAR) Initiative at Wits. (2013) Demand and Supply: Monitoring, Evaluation, and Performance Management Information and Services in Anglophone Sub-Saharan Africa, A Synthesis of Nine Studies. Johannesburg, South Africa: Graduate School of Public and Development Management, University of Witwatersrand

Chan A. (2001) Framework for measuring success of construction projects.

Charles G. Kamau, Humam Bin Mohamed. Efficacy of Monitoring and Evaluation Function in Achieving Project Success in Kenya: A Conceptual Framework. Science Journal of Business and Management. Vol. 3, No. 3, 2015, pp. 82-94.

Cheng, M. Y., Hoang, N. D., Roy, A. F., & Wu, Y. W. (2012). A novel time-depended evolutionary fuzzy SVM inference model for estimating construction project at completion. Engineering Applications of Artificial Intelligence, 25(4), 744-752.

Chin, C. M. M. (2012). Development of a project management methodology for use in a university-industry collaborative research environment (Doctoral dissertation). University of Nottingham, Semenyih Selangor Darul Ehsan, Malaysia

Cooper D R, Schindler PS (2005). Business Research Methods. (8th Ed.). Mc Graw-Hill, New Delhi, India.

Cooper, D.R., & Schindler, P.S. (2003). Business Research Methods. (8th Ed.). Boston: McGraw Hill Irwin

Dvir, D., 2005. Transferring projects to their final users: the effect of planning and preparations for commissioning on project success. International Journal of Project Management 23, 257–265

First Annual Progress Report 2013-2014, Kenya Vision 2030 on the implementation of the Second Medium Term Plan (2013-2017)

Georgieva, S., & Allan, G. (2008). Best Practices in Project Management through a Grounded Theory Lens. Electronic Journal of Business Research Methods, 6(1), 43-52

GUIJT, I. (1999) Participatory monitoring and evaluation for natural resource management and research. Socio-economic Methodologies for Natural Resources Research. Chatham, UK: Natural Resources Institute

Guit I. (1999) Participatory monitoring and evaluation for natural resource management and research. Natural Resources Institute, University of Greenwich

Hassan, A. I. (2013) an Investigation of Structural Capacity as a Component of Monitoring and Evaluation in Project Success of Road Construction Projects in Kenya. International Journal of Academic Research in Business and Social Sciences, 03 (08), 443-452

Hwang, B. and Lim, E. (2013) Critical Success Factors for Key Project Players and Objectives: Case Study of Singapore. Journal of Construction Engineering Management 139(2), 204–215

Ika, L. A. (2009) Project success as a topic in project management journals. Project Management Journal, 40(4), 6-19.

Ika, L. A., Diallo, A., & Thuillier, D. (2010) Project management in the international development industry: the project coordinator's perspective. International Journal of Managing Projects in Business, 3(1), 61-93

Kahilu, D. (2010) Monitoring and evaluation report of "the impact of information and communication technology service (ICTs) among end users in the ministry of agriculture and cooperatives in Zambia". Journal of Development and Agricultural Economics, 3(7), 302-311

Kariungi, S. M. (2014) Determinants of Timely Completion of Projects in Kenya: A Case of Kenya Power and Lighting Company, Thika. ABC Journal of Advanced Research, 3(2), 9-19

Khang, D. B., & Moe, T. L. (2008) Success criteria and factors for international development projects: A life-cycle-based framework. Project Management Journal, 39(1), 72-84.

Kimando, L. N., Njogu, G. W., & Kihoro, J. M. (2012) Factors Affecting the Success of Youth Enterprise Development Funded Projects in Kenya; A Survey of Kigumo District Muranga County. International Journal of Business & Commerce, 1(10), 61-81

Kombo P.O. (2006). Proposal and Writing: An Introduction. Pauline's Publications Africa.

Kothari, C.R. (2004). Research methodology: methods and techniques. New Delhi: New Age International.

Kyriakopoulos, G. L. (2011) Project Management (PM) Prosperity: A Second Half of the 20th Century Literature Review. Journal of Management and Sustainability, 1 (1), 64-81.

Ling, F. Y. Y., Low, S. P., Wang, S. Q., & Lim, H. H. (2009) Key project management practices affecting Singaporean firms' project performance in China. International Journal of Project Management.

Magondu, A. (2013) Factors Influencing Implementation of Monitoring and Evaluation in HIV Research Projects, a Case of Kenya Aids Vaccine Initiative (Kavi) (Masters Dissertation). University of Nairobi, Kenya

Malach-Pines, A., Dvir, D., & Sadeh, A. (2009) Project manager-project (PM-P) fit and project success. International Journal of Operations & Production Management, 29(3), 268-291.

Marangu, E. M. (2012) Factors influencing implementation of community based projects undertaken by the banking industry in Kenya. A case of Barclays Bank of Kenya (Masters Dissertation). Kenyatta University, Nairobi, Kenya Management, 27(1), 59-71.

Marelize G. and Kusek J. Z. (2009) Making Monitoring and Evaluation Systems work: A capacity Development Toolkit. The World Bank

Mladenovic, G., Vajdic, N., Wündsch, B., & Salaj, A. T. (2013) Use of Key performance indicators for PPP transport projects to meet stakeholders' performance objectives. Built Environment Project and Asset Management, 3(2), 228-249

Mugenda O. and Mugenda A. (2008) Social Science Research; Theories and principles. Nairobi, Kenya: Applied Research & Training Services.

Mugenda, A., and Mugenda, O. (2003). Research methods; quantitative and qualitative approaches. Africa Center for Technology (ACTS), Nairobi Kenya.

Müller, R., & Turner, R. (2007) the influence of project managers on project success criteria and project success by type of project. European Management Journal, 25(4), 298-309.

Muriithi, N., & Crawford, L. (2003) Approaches to project management in Africa: implications for international development projects. International Journal of Project Management, 21(5), 309-319.

Mwala F.V. (2012). Effect of project monitoring on implementation of economic stimulus projects in education sector within Nairobi County, Kenya (Masters Dissertation). Kenyatta University, Nairobi, Kenya

Myrick, D. (2013) A Logical Framework for Monitoring and Evaluation: A Pragmatic Approach to M&E. Mediterranean Journal of Social Sciences, 4(14), 423-428

Naidoo, I. A. (2011). The role of monitoring and evaluation in promoting good governance in South Africa: A case study of the Department of Social Development (Doctoral dissertation, University of Witwatersrand)

National Irrigation Board (2017) Public Irrigation Schemes: Mwea Irrigation Scheme https://www.nib.or.ke/projects/public-irrigation-schemes/mwea-irrigation-scheme

Nina F. and Gage A. (2007) M&E Fundamentals: A self-Guided Mini-course. MENTOR

Ochieng, F., Chepkuto, P., Tubey, R., & Kuto, L. Y. (2012) Effectiveness of monitoring and evaluation of CDF projects in Kenya. A case of Ainamoi Constituency.

Ogolla F. and Moronge M. (2016) Determinants of Effective Monitoring and Evaluation of Government Funded Water Projects in Kenya: A Case of Nairobi County. The Strategic Journal of Business and Change Management. Vol 3, Issue 1, Article 15. P 329-358

Papke-Shields, K. E., Beise, C., & Quan, J. (2010). Do project managers practice what they preach, and does it matter to project success? International Journal of Project Management, 28(7), 650-662

Peterson, F., & Fischer, M. (2009) Project Monitoring Methods Exploratory Case Analysis: Industry Responses. In Computing in Civil Engineering (2009) (pp. 105-114). ASCE.

Pfohl. J. (1986) Participatory evaluation: a user guide, New York: USAID. Accessed on 18/12018 from http://www.slideshare.net/kinnu1242/stratified-random-sampling-program-theory-assessment.

Philip R, et al (2008) Local Government and Integrated Water Resources Management (IWRM) Part II: Engaging in IWRM-Practical Steps and Tools for Local Governments.

Pinto, J. K. (2000). Understanding the role of politics in successful project management. International Journal of Project Management, 18(2), 85-91.

Pinto, J. K., & Slevin, D. P. (1988) 20 Critical Success Factors in Effective Project implementation. Project Management Handbook, 479: 167-190.

Prabhakar, G. P. (2008). What is Project Success: A Literature Review? International Journal of Business and Management, 3(9), 1-10.

Pretorius, S., Steyn, H., & Jordan, J. C. (2012) Project management maturity and project management success in the engineering and construction industries in Southern Africa. South African Journal of Industrial Engineering, 23(3), 1-12.

Raymond, L., & Bergeron, F. (2008) Project management information systems: An empirical study of their impact on project managers and project success. International Journal of Project Management, 26(2), 213-220.

Rietbergen-McCracken J. et al (1998) Participation and Social Assessment: Tools and Techniques. Washington: World Bank.

Rist R.C and Kusek J. Z. (2009) Ten Steps to a Results Based Monitoring and Evaluation System. The World Bank

Rossi, P. H., Lipsey, M. W., and Freeman, H. E. (2004). Evaluation: A systematic approach (7th Ed.). Thousand Oaks, CA: Sage

Stem, C., Margoluis, R., Salafsky, N., & Brown, M. (2005) Monitoring and evaluation in conservation: a review of trends and approaches. Conservation Biology, 19(2), 295

World Bank (2010) Participatory Monitoring and Evaluation, in Topics: Community Driven Development (b). Washington D.C: The World Bank. Accessed on 18/1/2018 from www.go.worldbank.

APPENDICES

APPENDIX I:

LETTER OF TRANSMITTAL OF DATA COLLECTION INSTRUMENTS

Edward Onderi Mose
P.O Box 30197-00100
Nairobi, Kenya

17th July, 2018

Dear Respondent,

RE: REQUEST FOR INFORMATION

I am a student undertaking a degree of Master of Arts in Project Planning and Management at the University of Nairobi conducting research study "Influence of Monitoring Approaches on the Implementation of Rice Projects in Mwea Irrigation Scheme in Kirinyaga County".

You have been selected as one of the respondents to assist in providing the requisite data and pertinent information for this research. I kindly request you to spare a few minutes and answer the attached questionnaire. The information you shall offer will be used for academic purposes. Your identity will be kept in utmost confidence.

Kindly do not append your name anywhere on this questionnaire. I request for your cooperation in this endeavor.

Yours Faithfully,

Edward Onderi Mose
Mobile: 0736456403

APPENDIX II

QUESTIONNAIRE

This questionnaire is designed to gather information regarding the influence of monitoring approaches on the implementation of rice projects in Mwea irrigation scheme. Kindly respond as appropriate.

Date……Interviewer…….....

Location……Time…….

SECTION A: Demographic Characteristics of Respondents

Questions	**Codes**	**Response**
Gender of Respondent	1=Female; 2= Male	
Age of Respondent	Below 20	
	20-25	
	26-30	
	31-35	
	36-40	
	40-45	
	Above 45	
Highest Level of Education	1= No formal education	
	2=Primary school level	
	3=Secondary level	
	4= Certificate level	
	5=Diploma level	
	6=Degree level	
	7= Others (Specify)	
Literacy of Respondent	1=Can read	
	2= Can write	
	3=Both	
	4=None	
Average monthly income	Amount in Kshs	
Acreage under rice cultivation		
Number of years in rice farming		

SECTION B: Results-Based Monitoring

To what extent do you agree or disagree with the following statements?

Statement	1=Strongly Disagree	2=Disagree	3=Neutral	4=Agree	5=Strongly Agree
I have participated in developing the result matrix for this project					
I was part of the team that developed project outputs					
I was part of the team that developed project outcomes					
Been involved in tracking project results in this project					
Project results in this rice scheme are satisfactory					
All farmers in this scheme have been focusing on better results					
Our result monitoring approaches have been very successful					

SECTION C: Participatory Monitoring

To what extent do you agree or disagree with the following reform statements?

Statement	1=Strongly Disagree	2=Disagree	3=Neutral	4=Agree	5=Strongly Agree
I participated in the design of this project					
I participated in the development of this project objectives					
I have been involved in the routine tracking of project progress					
I am always involved in tracking project outputs					
I am always involved in tracking project outcomes					
I participate in project reporting					

SECTION D: Rapid Appraisal

To what extent do you agree or disagree with the following statements?

Statement	1=Strongly Disagree	2=Disagree	3=Neutral	4=Agree	5=Strongly Agree
I have participated in developing the project appraisal approaches					
I was part of the team that developed appraisal techniques					
I was part of the team that developed appraisal outcomes					
Appraisal techniques used in this project are excellent					
Project results in this rice scheme are satisfactory					
All farmers in this scheme have been focusing on better results					
Our result monitoring approaches have been very successful					

SECTION E: Implementation of Rice Projects

To what extent do you agree or disagree with the following reform statements?

Statement	1=Strongly Disagree	2=Disagree	3=Neutral	4=Agree	5=Strongly Agree
This intervention has increased farm productivity					
Due to this project, we are now able to access more support					
This rice project has helped us increase farm profits					
As a farmer I am now able to sell my produce with no difficulties					
I am encouraged to undertake more rice farming					

APPENDIX III

RESEARCH PERMIT

THIS IS TO CERTIFY THAT:
MR. EDWARD ONDERI MOSE
of UNIVERSITY OF NAIROBI, 519-605
UTHIRU,has been permitted to conduct
research in *Kirinyaga County*

on the topic: *INFLUENCE OF MONITORING APPROACHES ON IMPLEMENTATION OF RICE PROJECTS IN MWEA IRRIGATION SCHEME, KIRINYAGA COUNTY, KENYA*

for the period ending:
8th August,2019

.....
Applicant's Signature

Permit No : NACOSTI/P/18/28012/24406
Date Of Issue : 8th August,2018
Fee Recieved :Ksh 1000

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

CONDITIONS

1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.
6. This Licence does not give authority to transfer research materials.
7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.
8. The Commission reserves the right to modify the conditions of this Licence including its cancellation without prior notice.

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No.A 19986

CONDITIONS: see back page

APPENDIX IV

TABLE FOR DETERMINING SAMPLE SIZE FOR A GIVEN POPULATION

Table for Determining Sample Size for a Given Population

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

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

Source: Krejcie & Morgan, 1970

APPENDIX V:
PLAGIRISM CERTIFICATE