DETERMINANTS OF PROJECT SCHEDULE CONTROL DURING PROJECT IMPLEMENTATION IN KENYA. A CASE OF NON-GOVERNMENTAL ORGANISATIONS' PROJECTS IN MBEERE NORTH DISTRICT, EMBU COUNTY

JOSPHAT NJERU NTHIGA

D53/CTY/PT/20788/2010

A Research Project Submitted to the School of Business in Partial Fulfillment of the Requirement for the Award of Masters of Business Administration (Project Management Option) of Kenyatta University

June, 2013
DECLARATION

I, the undersigned declare that this research project is my original work and has never been submitted for a degree or any other award in any other University or Institution of higher learning.

Signature..........................Date........................................

Josaphat Njeru Nthiga

D53/CTY/PT/20788/2010

This research project has been submitted with my approval as the university supervisor.

Signature ..........................Date........................................

Ms. Rosemary James

Department of Management Science

This research project has been submitted with my approval as the Chairperson of the Department.

Signature..........................Date........................................

Gladys Kimutai

Department of Management Science
ACKNOWLEDGEMENT

I thank the almighty God for giving me life, intellect, health and energy to carry out this work. I also take this opportunity to thank my employer (Office of the President-Administration Police Department) for allowing me time to attend classes. Were it not for departmental consideration, I would not have managed.

I pass my regards to my supervisor; Ms. Rosemary James. Her continued presence, devotion, guidance, selfless correction, positive criticism and motivation ensured this research project saw the light of the day. Special gratitude goes to my lecturers at Kenyatta University- City Campus. I particularly thank the lecturers in the Management Science Department among them; Mr. Bett, Ms. Kimutai, Lucy Kamau, Dr. Muathe, Mr. Sang and Dr. Namusonge. The knowledge they inculcated has fully enabled me develop this research project. Additionally this is a knowledge that will totally transform my life generally and profession-wise in particular.

I thank my course mates in the project management option. Together we labored and as a weekend class endured the struggles of committing ourselves over the weekends to accomplish our objectives as project managers. Special thanks go to Mr. Bett, Julius Leley, Terry Kunusia, Amani J and Jino Meli in the weekend class. The team work portrayed in undertaking joint assignments, inspiring one another and mutual support made otherwise difficult tasks easier.

I cannot forget the staff of both Kenyatta University library and Chuka University College. Their Co-operation enabled me get all the relevant reference materials I required and in time.

To My colleagues,,, Wincate Mukami, Purity Kathambi and Sophina Kamwara who all acted as voluntary secretaries in typing and printing this work. Thanks for your assistance.

Lastly I thank my wife; Jesca Mukami and daughter Liz Gakii for their moral, physical, emotional support.

God bless you all in abundance.
DEDICATION

I dedicate this research project to my lovely wife, Jesca Mukami and my daughters, Liz Gakii Njeru and Precious Kathoni Njeru.
TABLE OF CONTENTS

Cover page .................................................................................. (i)
Declaration .................................................................................. (ii)
Acknowledgement .......................................................................... (iii)
Dedication .................................................................................... (iv)
Table of contents .......................................................................... (v)
List of figures ................................................................................ (viii)
List of Tables ................................................................................ (ix)
Definition of terms ......................................................................... (x)
Abbreviations ................................................................................ (xi)
Abstract ........................................................................................ (xii)

CHAPTER ONE: INTRODUCTION

1.1 Background of the study ......................................................... 1
1.2 Statement of the problem ....................................................... 3
1.3 Objectives of the study .......................................................... 4
   1.3.1 General objective ............................................................. 4
   1.3.2 Specific objective ............................................................. 4
1.4 Research questions ............................................................... 4
1.5 Significance of the study ....................................................... 5
1.6 Scope of the study ............................................................... 6
1.7 Limitations of study .............................................................. 6
1.8 Assumptions of the Study ..................................................... 6
1.9 Organization of the Study ..................................................... 7

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction ............................................................................ 8
2.2 Theoretical Review ............................................................... 8
   2.2.1 Project control process ................................................... 8
   2.2.2 Causes of project schedule control ................................. 8
   2.2.3 Monitoring and control of time performance .................. 9
APPENDICES

Appendix I: Questionnaire ................................................................. 45
Appendix II: Document Review Schedule ......................................... 51
Appendix III: Focus Group Schedule .................................................. 52
Appendix IV: Sampling Frame ............................................................. 55
REFERENCES .......................................................................................... 59
LIST OF FIGURES

Figure 2.1: Gantt chart showing Schedule Status ......................................................... 9
Figure 2.2: Project Schedule control chart ................................................................. 10
Figure 2.3: Cost and Schedule Variance using EVA..................................................... 12
Figure 2.4: Framework of the Study ................................................................. 19
Figure 4.1: Response Rate by Age Category and Gender................................. 24
Figure 4.2: Histogram on tools and techniques used in estimating project duration.. 26
Figure 4.3: Pie-Chart representing Responsibility for Monitoring and Control........ 31
Figure 4.4: Responsible Stakeholders in Project Schedule Development................. 32
LIST OF TABLES

Table 2.1: Earned value Analysis .................................................................11
Table 3.1: Sampling Frame.................................................................21
Table 4.1: Responses on Variation between Actual and Planned Duration.............25
Table 4.2: Incompetence of the project manager as a cause of schedule slippage........27
Table 4.3: Distribution on whether project managers motivated staff..................27
Table 4.4: Distribution on whether project managers convened consultative meetings...28
Table 4.5: Distribution on whether project managers were strict to deadlines...........28
Table 4.6: Distribution on whether project managers solved project conflicts...........28
Table 4.7: Distribution on whether project beneficiaries were involved in project activity
definition.................................................................29
Table 4.8: Distribution whether project beneficiaries were involved in project duration estimation.................................................................29
Table 4.9: Distribution on whether project beneficiaries were involved in progress reviewing.................................................................30
Table 4.10: Distribution on project beneficiaries involvement in generating requested changes.................................................................30
Table 4.11: Distribution on whether project beneficiaries were involved in approval of changes.................................................................30
Table 4.12: Distribution whether donor policies caused variation in project duration.....32
Table 4.13: Distribution on whether project complexities caused variation in project Implementation.................................................................32
Table 4.14: Distribution on whether technical complexities affected project schedule...33
Table 4.15: Distribution on whether financial complexities affected project schedule...34
Table 4.16: Distribution on whether managerial complexities affected project schedule..35
Table 4.17: Distribution on whether economic complexities affected project schedule...35
Table 4.18: Distribution on whether socio-cultural complexities affected project schedule.................................................................36
Table 4.19: Distribution on whether environmental complexities affected project schedule.................................................................36
Table 4.20: Distribution on whether unanticipated events affected project schedule.....37
OPERATIONAL DEFINITION OF TERMS

**Critical activity** - an activity which when delayed would delay the completion of the project by the same amount of time.

**Critical path** - The longest path in a network diagram and represents the planned project duration.

**Indicators** – Refers to the information that would help determine progress towards meetings project objectives.

**Milestone** – refer to significant project events that mark major accomplishments.

**Non-Governmental Organization (NGO)** – is a legally constituted organization created by natural or legal persons that operates independently from any form of government.

**Project control** – refer to managerial decisions and actions intended to correct poor project performance during project execution.

**Project Evaluation** - This represents a systematic and objective assessment of ongoing or completed project/programs in terms of their design, implementation and results.

**Project monitoring** – It’s an ongoing activity to track project progress against planned tasks.

**Project scheduling** – Refers to the process of laying out all the actual activities of the project in the time order and logical sequence in which they are to be performed.

**Schedule control** – refers to schedule management technique that enables the project manager to verify the status of the project, influence proposed changes to the schedule and manage changes to the schedule.

**Successful Projects** - refer to projects where most stakeholder groups attain their major goals and achieve significant desirable outcomes.

**Triangulation** - a term used to describe the simultaneous use of multiple data collection methods and information sources to study the same topic.

**Total failure projects**- refers to projects where the initiative was either never implemented or was implemented but immediately abandoned.
ABBREVIATIONS AND ACRONYMS

ACK - Anglican church of Kenya
AIDS- Acquired Immune Deficiency Syndrome
AUSaid- Australian Aid
CCF- Christian Child Fund
CDC - Child Development Centre
CDF- Constituency Development Fund
CPM- Critical Path Method
DANIDA- Danish International Development Assistance
EU- European Union
EVA- Earned Value Analysis
FBO- Faith Based Organizations
GTZ - Germany (organizations) for Technical Co-operation
HIV - Human Immune Deficiency Virus
IFAD - International fund for Agricultural Development
IMF- International Monetary Fund
IRDP- Integrated Rural Development Program
JICA - Japanese International Co-operation Agency
M&C - Monitoring and Control
MOA- Memorandum of Agreement
NGO - Non Governmental Organization
NPV - Net Present Value
PERT - Program Evaluation and Review Technique
PMC- Project Management Committee
UNDP- United Nations Development Program
UNOPS- United Nations Office for Project Services
UNICEF-United Nations Children’s Fund
USAID-United States Assistance for International Development
WBS- Work Breakdown Structure
ABSTRACT

Schedule control is a project management tool that enables project managers to verify the project schedule status, influence proposed changes to the schedule and manage changes to the schedule. Schedule control during project implementation enables project managers to handle schedule slippage so that the project is executed within the planned timeframe. It has been observed that approximately 80% of all projects overrun baseline schedule during implementation. The purpose of conducting this research is therefore to study the factors determining project schedule control during project implementation. Various factors namely; project manager’s expertise, donor policies, project complexity and risks arising during project implementation determine the level of schedule control during project implementation. In conducting this research descriptive research design was applied. The target population comprised all the sixty NGOs projects carried out in Mbeere North District, in Embu County within the time frame 2008-2012. Sample selection was done through stratified random sampling. The strata were set to represent various categories of project stakeholders namely; project management, donors, project implementers and beneficiaries. To ease data collection the district was divided into four clusters. These clusters were the four administrative divisions in Mbeere North District. Data was collected using questionnaires, focus group discussions and document review schedules from twenty (20) projects which were sampled across the study area. The response rate was 66.7%, 75% and 50% respectively for the above data collection instruments. Data was then analyzed through descriptive statistics for quantitative data and content analysis for qualitative data. From these data analysis, it was observed that project managers’ expertise during project implementation was not a main cause of schedule slippage. It was also established that donor policies, project complexity and project related risks affected projected schedule control during project implementation. Donor policies, project complexity and risks were identified as the main determinants of project schedule control during project implementation. It is recommended that project plans and designs should factor in these determinants at project formulation phase. The inclusion of these determinants in the initial project plan should be a participatory process for all project stakeholders. Further research is recommended to enable quantification of project loss when projects are over schedule.
CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Project management refers to application of modern tools and techniques in planning, financing, implementing, monitoring, controlling and coordinating unique activities and tasks to produce desired deliverables according to predetermined objectives within the constraints of cost and time. There are five processes involved in project management namely; initiation, planning, implementation, monitoring and control and project closure. Monitoring and Control is a feedback mechanism that compares the performance of the project during the execution process to the project plan. Schedule control is the last element in project time management comprised of activity definition, activity sequencing, activity resource estimation, activity duration estimation, schedule development and schedule control. Schedule control during project implementation enables the project manager to verify the status of the project, influence proposed changes to the schedule, identify changes to the schedule and manage changes to the schedule. Project schedule control consists of four steps namely; setting a baseline plan, measuring progress and performance, comparing plan against actual and taking corrective actions. Schedule control is achieved through application of various tools and techniques and these include progress reporting, schedule change control system, performance measurement, variance analysis, schedule comparison bar-charts etc.

Schedule control is a project monitoring aspect that should be undertaken throughout the project lifecycle. It’s however a very important project management tool during project implementation which constitutes 85% of the project lifecycle. If a project schedule slips out during this phase, then the objectives of the project may not be realized. Thus project schedule control during project implementation should be mandatory in order to keep projects on schedule.

There are many examples however of projects that have been confirmed after evaluation to have slipped out of schedule. A few cases are illustrated here below focusing on global, regional and local project schedule slips.
Galorath, (2012) in Standish Chaos Report defines project success as projects on budget, on schedule and with expected functionality. Ernst & Young, 2009 in an evaluation report entitled “Keys to success for core systems modernization of financial services” sampled various financial institutions including Standard Bank in South Africa, Nationwide in United Kingdom, Citigroup across Asia, Suncorp, National Australia Bank and Commonwealth Bank in Australia. It was observed that these monster projects are notorious for running over budget, overschedule and often over promise and under deliver in benefits. According to this report 29% were successful projects, 53% were challenged projects and 18% failed projects. According to Tata Consultancy (2007), 62% of organizations experienced IT projects that failed to meet schedules. Ernst & Young (2009) in an analysis of over 40 reports on e-government from developing and transitional countries noted that of all projects; 35% were total failures, 50% partial failures and only 15% were successful.

At national level there are abundant cases of projects implementation exceeding the initial schedule plan. One important case in Kenya is the Nairobi-Thika Highway; a 42Km route project implemented by three Chinese Engineering Firms (China Wu-Yi, Sino Hydro and Shengli-Li) and was due for completion in December 2011. However due to unscheduled relocation of utility lines, water and electricity, more work on installation of road signs and painting work on the road; the project duration was extended. Lake Baringo Community-Based Land and Water Management Project, according to Asenath and Segbedzi (2004) had the implementation duration increased by nine months from the initial baseline duration of thirty months. This was to allow time to complete project activities. The project manager also resigned one year prior to project completion. The project was implemented by UNEP and executed by UNOPS through a Memorandum of Agreement (MOA).

In Mbeere North District, there are various cases of projects slipping overschedule during implementation. Examples include MlaChake Irrigation Project in Evurore division under funding of JICA. The project was initially planned to take a total duration of two (2) years. However, by January 2013; the project had taken three (3) years and according to status report was about 30% complete. Also the Kangai Skylimit Irrigation project funded by Trocaire International was initially planned to take two years. However due to uncertainties resulting from low levels of community participation, erratic funding due to prior under budgeting, delays by contractors among others, the project was about 50% complete at the planned project duration. The construction of Nthungiri Earth dam in Ndurumori location funded by Trocaire International also
exceeded the planned schedule by six months. The project objective was to collect surface run-off water for watering livestock during the dry spells. However in the first season when the project was targeted to generate benefits, the target was totally missed. It was noted that towards the end of that rain season the project team was still fixing the dam and therefore missed water collection in that season.

The above cases are just but a few examples of NGO projects slipping out of schedule during implementation.

1.1.1 NGOs Working in Mbeere North District

Due to poverty, arid and semi-arid climatic conditions and low socio-economic levels of residents in Mbeere North District, quite a number of Non-Governmental Organizations (NGOs) have set in to improve the area. These NGOs mostly work through the two main churches i.e. Catholic Church and Anglican Church of Kenya (ACK) as Faith Based Organizations (FBOs). Some of the NGOs undertaking projects in Mbeere North include Christian Child Fund (CCF), herein referred to as Child Fund; Catholic Diocese of Embu- Integrated Rural Development Program (IRDP), Compassion International Kenya, Trocaire International Kenya, Green African Foundation, Forest Action Network, Aids Population and Health Integrated Assistance (APHIA Plus Kamili) etc.

1.2 Statement of the Problem

Statistics quoted by experts show that 60% of all projects are over budget and late (Ernst and Young, 2009; Chris, 2011; and Perry, 2011). In fact 60 - 80% of Non-Governmental project are over schedule (Galarath, 2012; Burns, 2002; Gray and Larson, 2000). In many projects, project managers and even contractors are continually seen championing for more time and budget. These signify serious cost and schedule overruns. There are also many reportsof donors either withdrawing or freezing their aid in many Non-Governmental projects. In Mbeere North district various NGO projects have been noted to have overrun the baseline schedule, a few cases illustrated there above. Since time is one of the projects’ triple constraints, overscheduled projects result in loss of envisaged project objectives as planned by various project stakeholders. The negative impacts arising from overschedule projects include; probable reduction in project relevance, loss of NPV, possible withdrawal of donor funding leading to premature project termination, attrition of project staff, increased project costs etc. These problems are very critical in attainment of project outputs hence the need for project schedule control.
1.3 Objectives of the Study

1.3.1 General Objective

The general objective of this study was to determine the factors affecting project schedule control during implementation of Non-Governmental Projects in Mbeere North District.

1.3.2 Specific Objectives

The specific objectives of this study were:

i) To determine the effect of project managers' expertise on project schedule control during implementation of Non-Governmental projects in Mbeere North District.

ii) To determine the effect of donor policies on project schedule control during implementation of Non-Governmental Projects in Mbeere North District.

iii) To determine the effect of project complexity on project schedule control during implementation of Non-Governmental Projects in Mbeere North District.

iv) To determine the effect of project risks on project schedule control during implementation of Non-Governmental Projects in Mbeere North District.

1.4 Research Questions

The research was guided by the following research questions:

i) What is the effect of a project manager's expertise on project schedule control during implementation of Non-Governmental projects in Mbeere North District?

ii) How do the project donor(s) policies affect project schedule control during implementation of Non-Governmental projects in Mbeere North District?

iii) How does the project complexity affect project schedule control during implementation of Non-Governmental projects in Mbeere North District?

iv) How do project risks affect project schedule control during implementation of Non-Governmental projects in Mbeere North District?
1.5 Significance of the Study

This study will benefit various stakeholders involved in project management. These include; government departments, NGOs, FBOs, CBOs, project managers, donor agencies, project contractors and sub-contractors, project beneficiaries, researchers among others.

The government departments will utilize this information to ensure on-time completion of public projects through schedule monitoring and control throughout project life cycle. This will be enhanced in that they will have a ready reference to avert schedule constraints during project execution. This will result in efficient use of public resources. Governments also allocate their funds to non-governmental projects. Such funds include Constituency Development Fund (CDF), Women Enterprise Development Funds (WEDF), Youth Enterprise Development Fund (YEDF) etc. Since these projects are funded from public coffers, government departments should provide the necessary information to implementing organizations. This research will avail such information.

The NGOs, FBOs and CBOs will benefit from this study in a number of ways. Firstly the information will be useful in M&E of their projects. Also in undertaking projects, these organizations will understand importance of on-schedule project implementation to meet stakeholders’ expectations. As a result beneficiaries and donor confidence will increase.

Project managers and other project experts will also immensely benefit from this study. With this information they can objectively oversee project implementation, advice where schedule compliance seems unrealistic and also undertake necessary schedule control procedures in time to keep the project on schedule. Donors agencies financing the project will with effective use of these research findings be able to formulate and issue schedule control policies to organizations applying for finances. The donors will be assured that the organization undertaking the project understands their time mandate in executing the project. This will reduce the monitoring costs of the project. Donors will also be able to formulate a funds release program consistent with the needs of the project implementers.

The target project beneficiaries will reap from an on-schedule project implementation in various ways. When implemented within the baseline schedule especially for time constrained projects
the project relevance will not change. Hence users will reap the intended benefits. Also with this information the beneficiaries are more proactive in assessing the project progress and status and demand from the implementers that the project should be on schedule. They will lobby against any unjustifiable attempt to alter the project duration if the intended schedule change is to their disadvantage.

Researchers will also benefit from this research in that this information will be available for use in project management studies. This research therefore provides a credible reference on schedule management aspect of project management. They will also utilize these research findings for further research.

1.6 Scope of the Study
This research was only limited to projects funded and implemented by Non-Governmental Organizations (NGOs) in Mbeere North District in Embu County. Scope was also narrowed to sixty (60) Non-Governmental Projects undertaken within the timeframe of the last five years i.e. from 2008-2012. This timeframe was based on the fact that most development projects have a lifespan of five years.

1.7 Limitations of the Study
The main limitation encountered in this study was the ignorance by some respondents on the information being studied. Some respondents were illiterate and even with assistance from research assistants they were not knowledgeable on such aspects. Other stakeholders were also not involved during project implementation but were passive recipients of project benefits. This was however very minimal and was overcome by selecting various categories of stakeholders as respondents. Such respondents understood the concepts of the study. During data collection some projects failed to allow document review. The problem was solved in that those accessed met the threshold response rate required for data analysis.

1.8 Assumptions of the Study
In undertaking this study it was assumed that the respondents would be willing to participate. The response rate was therefore expected to be high. Also it was assumed that the responses obtained were voluntarily submitted and therefore truthful. Another assumption was that the area selected
for this study was a case reflecting other areas in Kenya and therefore the findings from this research could objectively be generalized to other NGO cases in Kenya.

1.9 Organization of the Study
This project report has been organized into five chapters. Chapter one contains the background of the study, statement of the problem, objectives of the study, research questions, significance of the study, scope, limitations of the study and assumptions of the study. Chapter two contains the theoretical and empirical review and the conceptual framework. Chapter three contains research methodology which includes the research design, target population, sampling design, sample size, data collection, reliability and validity and data analysis. Chapter four contains analysis of the response rate, analysis of background information, quantitative analysis and qualitative analysis. Chapter five contains the summary of findings, answers to research questions, conclusions and recommendations.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Literature review refers to a systematic process of identification, location and analysis of documents containing information related to the proposed research problem being investigated. This section contains the theoretical framework, the empirical review and the conceptual framework.

2.2 Theoretical Review

2.2.1 Project Control Process

Project control is the last element in the implementation cycle of planning-monitoring-controlling process. Except for accounting control, according to Gray and Larson, (2,000) other project controls are not performed in most organizations. However for project success, control should be focused on three elements of the project i.e. time, cost and performance. The focus of this research is project schedule control during implementation/ execution phase of projects. According to Klastorin (2004), once project implementation starts, project managers must monitor every aspect of ongoing project in order to concentrate their efforts on identifying those tasks that are “out-of-control” and require corrective actions.

There are several things that can cause a project schedule to require control, namely; initial project time estimation was based on optimistic time values, the task sequencing was initially incorrect, technical difficulties set in that take long to resolve than planned, required inputs of materials, personnel and equipment were unavailable when needed, necessary preceding tasks were incomplete, requested /generated change order requires rework, altered governmental regulations among others.

The above can according to Ford, Lyeis and Taylor (2006) be generally classified as risk factors, donor factors, project complexity and human resource factors that affect project schedule control during project execution.
2.2.2 Monitoring and Control of Time Performance

This is a relatively easy process so long as project managers are actively conversant and involved with/in schedule development process. This is the schedule planning process consisting of: activity definition, activity sequencing, activity resource estimating, activity duration estimation, schedule development and finally schedule control. The output of these processes includes activity list, activity attributes, project baseline schedule, schedule model updates, schedule baseline updates, performance measurement, requested changes, approved changes and recommended corrective actions.

With an effective baseline schedule, schedule controls during project implementation enable the manager to verify the status of project, influence proposed changes to the schedule, identify changes to the schedule and manage changes to the schedule.

The tools and techniques used in schedule control include progress reporting, performance measurement, schedule change control system, variance analysis, schedule comparison bar charts, control charts and earned value analysis. Figures 1 and 2 below illustrate Gantt chart and Schedule control chart respectively:

![Gantt chart showing schedule status](Source: Eric Verzuh pp. 165)
2.2.3 Earned Value Analysis (EVA)

According to Verzuh, this analysis method is appropriate for all projects and can be used to measure cost performance, schedule performance or both at the same time. However, EVA requires a valid baseline to work, otherwise the variances calculated through EVA are meaningless. EVA uses costs and task completion data to create a complete picture of a project's performance against the plan. For example, projects can be ahead of schedule (good) and over budget (bad). Or they can be ahead of schedule and under budget (really good). Project managers should always track both schedule and cost to get a complete picture.

At the centre of EVA is a concept called earned value, the monetary value of work performed at a given point, according to the baseline plan. EVA relies on the WBS with clearly defined tasks, each of which has been assigned a cost.

The figure below shows a project whose tasks have well-defined completion criteria and each task has been assigned a cost estimate.
Table 2.1: Earned Value Analysis

<table>
<thead>
<tr>
<th>Task</th>
<th>Planned cost</th>
<th>Actual cost</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>100</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>100</td>
<td>110</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>100</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>100</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Planned value/week 100 150 100 150 150 200 150 50 100 50

Total planned value 100 250 350 500 650 850 1000 1050 1150 1200

After six weeks, some tasks are ahead of schedule while others are behind.

Total Actual Cost = 760
Earned Value = 800
planned Value = 850

\[
SV\% = \quad CV\% =
\]

\[
SV\% = \quad CV\% =
\]

SV\% = -0.0588 OR 5.88% behind schedule CV\% = 0.05 or 5% under budget

New estimate at completion = Total Planned Value x (AC/EV)

\[
EAC = 1200 \times \frac{760}{800}
\]

EAC = 1140

(Source: Eric Verzuh pp. 163)

Project managers are actually concerned with whether a project is on schedule. In large projects with many concurrent tasks, it's hard to know which activities are on or behind schedule.
With EVA, a project manager compares the amount of work that has been done to the amount of work that was supposed to be done in a given time to compute schedule variance. With EVA formulas, a clearly defined baseline and accurate task status, one can confidently report overall progress in precise and objective terms. However even with EVA, we can fall into the trap of subjective assessment as we report partial progress on detailed tasks. One alternative for reporting partial completion on a task is to apply the 0-50-100 rule of progress i.e. 0 percent complete: (The task has not begun), 50 percent complete: (The task has started but not complete) and 100 percent complete: (The task is complete).

Figure 2.3: Cost and Schedule Variance using EVA.
(Source: Eric Verzuh pp. 165)
In EVA, the actual work packages on the project must be broken down into small units. The planning guideline that is the corollary to this monitoring guide is to breakdown tasks until they are not longer than one reporting period.

2.2.4 Corrective Actions
For experienced managers, developing valid baselines and tracking cost and schedule variance is easy. The difficulty is determining when to take corrective action and selecting an action to take when correction is necessary. Main corrective actions used in schedule control are:

2.2.4.1 Re-Baseline with Better Estimates
Shortly after the project begins, the project managers realizes that even with hard teamwork and best use of time, it will be short against time and cost goals. This may occur as a result of poor estimating. Re-evaluating the baseline to improve the estimates within it is the best cause of action. It involves checking original assumptions in the statement of work (SOW) and work package estimates.

The trade-offs in this case involve developing a more accurate baseline meaning extension of project duration or adding more resources that increase cost. This reduces risks of missing on cost and schedule goals. However this option of delayed finish date or increase budget threatens overall project goals.

2.2.4.2 Crash the Schedule
This is a time-cost trade-off in project control. Crashing refers to shortening of the project time by reducing the time of one or more activities in the project.

To determine where and how much to crash activity times, the management needs to understand information on: normal cost, normal time, crash time, crash cost and activity cost slope.

\[
\text{Activity cost slope} = \frac{\text{Crash Cost} - \text{Normal Cost}}{\text{Normal time} - \text{Crash Time}}
\]

2.2.4.3 Fixed-phase Scheduling
During the early stage of a product development life cycle, it is difficult to pin down the cost, schedule or product quality. Some projects however for very specific reasons need to complete by a specific date. When fixed-phase scheduling is employed, the project phases are apportioned from the top-down and scheduled according to the completion date.

At the end of each phase, the scope of the project is evaluated to fit the remaining schedule. Software is probably the best candidate for fixed-phase estimating because most software designs
are modular. In addition, it’s critical that these products meet delivery dates because their markets success depends on beating a competitor in time.

2.2.4.4 Outsourcing

This can be done either for entire project or a portion of it. It involves carving out a portion of the project and handing over to an external firm to manage and complete. This is especially so if this portion of the project requires specialized skills not possessed by internal workers. This results in greater productivity and a shortened schedule.

2.2.5 Involvement of NGOs in Projects

Research has shown that most donor fund is channeled through NGOs (Nancy and Boriana, 2006). According to the two authors, Africa receives 32.52% of the global NGO Aid. This Aid is aimed at poverty alleviation (44.15%) and Life Expectancy (49.95%) according to IMF Report, 2006. A Non-Governmental Organization (NGO) is a legally constituted organization created by natural or legal persons that operates independently from any form of government (Evans 2005). Apart from “NGO” there are many alternative or overlapping terms in use, including; Third Sector Organization (TSO), Non-Profit Organization (NPO), Voluntary Organization (VO), Civil Society Organization (CSO) etc. (Team Based Consulting, 2012).

Generally, governments have not welcomed NGOs involvement on policy issue processes as there is a feeling in governments that NGOs activities should be limited to their traditional roles of service provision particularly where government lacks capacity (USAID Report, 2002). However donors have according to USAID, relied on NGOs expertise and experience to implement aspects of their support. NGOs have also depended on donors to fund NGO designed programs. However in most such cases, donors exact their interest and priorities to the compromise of the NGO.

In Kenya some donors/ financiers of NGOs include; USAID, USAID, GTZ, DFID, DANIDA, AFK, EU, IFAD, UNDP, JICA, World Vision, Care International, Compassion International etc. (Dorothy, Winnie and Erick, 2007).
2.3 Empirical Review

According to Burns, 2007 most projects are over schedule by over 10%. Gray and Larson also noted that 60-80% of non-governmental projects are overschedule. Various factors according to the above authors contribute to lack of schedule control during project implementation and include; the expertise of the project manager, donor policies, project complexity and risk factors.

Jyothi, 2007 noted that most projects are run by people who lack authority and responsibility in project management. Such can rightly be described as project coordinators, facilitators, administrators or expeditors. They are not project managers and cannot competently manage project timeframe. International Finance Corporation (IFC-2009) defines donor agencies as multilateral agencies such as The World Bank and UNDP, bilateral agencies such as AUSAid or charitable organizations such as Oxfam International. Donors provide funding (often referred to as aid) primarily to developing countries to support endeavors such as poverty reduction, health care, promote good governance, reverse negative environmental trends etc. To execute such endeavors donors have various policies on the aid provided more so on project timeline. According to IFC, 2009, some donor agencies place strict project timeline and reporting procedures that project implementers must adhere to. European Union place their usual project duration as 12, 24, or 36 months. If the beneficiary doesn’t use the funds within the set period they are returned to the donor. Likewise Swiss Confederation projects have reporting fixed on annual basis. UNICEF projects have to be approved in accordance with the Country Program Action Plan, but all the project activities have to be completed during the current plans’ term. In some cases, the implementing NGO is entrusted with project implementation but with regular reporting requirement. In such cases the donor agency has a fixed schedule and control of such baseline schedule is the function of the donor. In some cases, the donors are flexible of timelines leaving some discretion to the implementing agencies. Such donors include JICA, DANIDA, UNDP and GTZ. However these also undertake their own monitoring and control though in consultation with the project implementers. Donors also control the implementation-phase arising required changes. Keulder and Benz (2011) noted that, during the execution of the project, it appears that certain activities cannot be carried out as planned or processes are not as effective as expected but with adjustments better results can be achieved. Under such circumstances, the consent of the donor has to be obtained ahead of the changes in the execution of the project. Only
after written consent of the donor has been obtained may adjustments of the schedule be made and this cause project delay.

Mohan, Wang and Zhao (2000) define project complexity as that which reflects the amount, difficulty and diversity of the characteristics of the product development objectives. It refers to the degree of technology or engineering intensity and sophistication of the project function (Mohan et al). Project complexity is evaluated in addition to project size. Most managers define a project’s size based on; total financial resources available, number of team members involved, complexities of deliverables to be produced and timeframes involved in delivery.

However as the project size increases, the project complexity will often increase as well (Method 123 PMM Ltd). Project complexity is in two dimensions i.e. technical and management complexities.

In the context of projects, risk is the chance that an undesirable event will occur and the consequences of all its possible outcomes. They refer to events that if they materialize, can kill or delay a project. Every project manager understands risks are inherent in project; all risks cannot be eliminated (Gray and Larson, 2000). Though and rarely, the project risks can be positive, project risk events typically have a negative effect on the project objectives of schedule, cost and specification. Risk management identifies as many risk events as possible, minimizes their impact, manages responses to those events that do materialize and provides contingency funds to cover risk events that actually materialize. The probability of a risk event occurring are greatest in the conception, planning and start up phases of the project. However the cost impact of a risk event is less if the event occurs earlier. This is because the early stages represent the period when the opportunities for minimizing the impact or working around a potential risk exists (Gray and Larson). Clearly identifying project risk events and deciding a response before the project begins is a more prudent approach than not attempting to manage a risk.

Chris (2011) indicated that over 85% of projects go over schedule. However he argued that there is never a one concrete answer to the question why project schedules delay. Chris cited four major triggers of project schedule delays namely; inaccurate estimates, lack of real time visibility and control, poor methods to determine project progress and insufficient historical information.
A research by Michael (2011) titled “Stop Runaway Software Development Projects” observed that software projects have a long history of running over schedule and over budget. This research estimated that 49% of such projects run over schedule. It also noted how companies have tried mitigation strategies—adding more developers to each project, inflating the timeline and including a substantial buffer to handle cost overruns. However, the study population and sample, research methodology and data analysis methods are not provided.

Perry (2011) in a research sponsored by Harvard Business Review sampled 1,471 projects in different countries. The objective was to compare project budgets and performance benefits with the actual loss and results. The samples were taken from private companies, government agencies and European organizations. It was found that one in six of the projects was a “black swan” with a cost overrun of 200% on average and a schedule overrun of almost 70%. Flawed technologies and limited understanding by engineers and managers were cited as causes of cost and schedule overruns.

In 2012, Allen and Juan carried out a research to establish the “effect of capital project delays and budget overruns on cost of oil and gas and utility industries”. The International Energy Agency had prior to this research forecast that the energy industry will spend nearly US$138 trillion globally on investments through 2035 chiefly to maintain existing assets such as pipelines, electric grids and to build new assets. The authors carried out a research to understand how much oil and gas companies and utilities worldwide might spend if they didn’t improve the implementation in terms of delivering on time and on budget of these large capital projects. They surveyed 61 energy executives from 21 countries who have capital responsibility for capital projects of at least US$1 Billion. This research was carried out between November, 2011 and February, 2012 through telephone interviews. Using conservative assumptions based on its research, they estimated that the potential overspend across the whole capital budget of the energy industries could be approximately 13% of the International Energy Agency estimates. Only 34% of all respondents said they had delivered to within 25% of their approved budget for all projects and 32% said they had delivered to the approved schedule. The respondents cited regulatory requirements (49%) and workforce/skills availability (25%) as challenges to getting projects launched on time. The increasing size and complexity of major projects also has added to the scale of the challenges for energy companies globally. This research
however advises companies to improve their focus of project management beyond engineering and procurement to include human capital strategy, stakeholder and supplier relations and defining and measuring success.

From analysis of this research, it was observed that project complexity and size, workforce/skills availability, regulatory requirements (by financiers) and human capital determine implementation of capital projects. The shortcomings in this research include that the sample was biased in that only company executives were interviewed. Other stakeholders in oil and gas industries should have been included. Also interviews through telephone as methodology for this research was limiting. Other methods such as email would have been more exhaustive.

Cecilia (2012) carried out a comparative study to establish cost overruns and schedule delays in metal and mining projects respectively. The research was based on 31 interviews with mining and metal executives responsible for capital projects. When asked what typically causes delays in project schedules, survey respondents cited availability of talent (57%), new or unconsidered regulatory requirements (45%) and insufficient detail during the planning phase. It was concluded that the tremendous scale of mining industries compared to metal industries mean that budget overruns and delays in completion are not unusual.
2.4 CONCEPTUAL FRAMEWORK

Figure 2.4: Framework of the study

Independent variables

<table>
<thead>
<tr>
<th>Project manager expertise</th>
<th>Project Schedule Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project donor policies</td>
<td></td>
</tr>
<tr>
<td>Project complexity</td>
<td></td>
</tr>
<tr>
<td>Project risks</td>
<td></td>
</tr>
</tbody>
</table>

Indicators:
- Baseline Schedule
- Work Breakdown Structure
- Schedule Control Chart
- Recommended Corrective Actions Taken

Source: Author, 2013

Project schedule control during project implementation phase is determined by a number of factors as displayed above.

Competence of the project manager and his team will enable an on-schedule completion of project based on affective planning of project schedule and monitoring and control of time aspect of implementation. Donors place different restrictions to NGOs undertaking projects under their financing. Such restrictions include imposed project duration, imposed/phased release of funds without compromising scope, quality and budget. Managers have to work with such schedule restrictions hence the need project schedule control application.

Project complexity entails level of detail, number of activities and degree of technology or engineering intensity. It’s true that the more complex the project is, the more complex schedule control becomes. Risks are more likely to affect the project at start-up phases of a project and this is where it’s cheaper to manage risks. However during project execution phase risks whether anticipated, unanticipated or initially overlooked emerge that derail project progress.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction
This chapter articulates methodology for research. It includes the research design, target population, sampling design, sampling technique, sample size, data collection methods and procedure and data analysis methods.

3.2 Research Design
A research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). According to Mugenda and Mugenda (1999), a research design is the program that guides the investigator in the process of collecting, analyzing and interpreting observations.

To undertake this research, a descriptive research design was applied. These are studies concerned with describing the characteristics concerning individual, group or situation (Kothari, 2004; Cooper, 2006). In this research, a cross-sectional survey was undertaken. Both qualitative and quantitative data was collected, analyzed and interpreted to describe and determine the factors affecting project schedule control during project execution phase of non-governmental projects.

3.3 Target Population
The target population in this study was comprised of all the NGO projects undertaken in Mbeere North District within the timeframe 2008-2012. For each Non-Governmental project, classified stakeholders i.e. project beneficiaries, Project Management Committee (PMC) members, project manager, project execution team, donors, and contractors amongst other stakeholders constituted the key informants from which the study sample per NGO was selected.

3.4 Sampling Design
To enhance representativeness of the sample, cluster sampling was done based on the four administrative division units of Mbeere North District. From the four clusters, a simple random sample of 30% of Non-Governmental projects fitting the scope of this research was selected. The selection of respondents from the sampled projects was done through stratified random sampling.
Project stakeholders, being the respondents in the study were stratified depending on their stake in the projects i.e. project donors, managers, implementers and beneficiaries.

3.5 Sample Size

According to Kasomo (2006), a minimum of 10% of the accessible population should be studied for descriptive statistics. To get a sample which is representative enough for this research, a sample size of 30% of the accessible population was used.

For this research, a sampling frame of all the Non-Governmental projects in Mbeere North District fitting the research scope was drawn. A random sample representing 30% of the target population per division was selected. This gave a total of 20 sample projects. For each sampled project, the respondents were stratified into those in management, implementation, donors and beneficiaries. Two respondents were selected from each of the above strata. However, the project beneficiaries were constituted as focus groups each consisting of 4-6 beneficiaries. Two focus group interviews per project were conducted. This gave a total of eight (8) categories of respondents per project. In total there were 120 individual respondents and 40 focus group interviews.

Table 3.1: Sampling Frame

<table>
<thead>
<tr>
<th>Administrative Division</th>
<th>No. of NGO Projects</th>
<th>Sample (30%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evurore</td>
<td>39</td>
<td>13</td>
</tr>
<tr>
<td>Siakago</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Kanyuambora</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Nthawa</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>60</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: District Commissioners Office Mbeere North, 2013

3.6 Data Collection Instruments

The main instruments used in data collection were; the questionnaire, focus group interview schedule and secondary data review.

Questionnaires consisting of structured and open-ended questions were administered to collect both the qualitative and quantitative data from the respondents.

To enhance uniformity of responses and analysis of data, the contents of questions in the data collection instruments were the same for various respondents they were administered to i.e.
project managers, donors, and implementation team. All types of measurements scales were applied in data collection. Focus group interviews were applied for the project beneficiaries to collect the required data. This was based on diversity of beneficiaries per project depending on the number of beneficiaries, their level of participation and their literacy levels. Likert-type scales were frequently applied in the data collection instruments. Secondary data from project initial plans and reports specifically focusing on WBS, baseline schedule, requested schedule changes, approved changes to the schedule, progress reports and actual project schedule were also reviewed.

3.7 Reliability and Validity
Alternative form method was used in ensuring the reliability of the data collection instruments. Both the questionnaire and focus group interview schedule were initially administered to respondents in two projects in Evuroredivision. These instruments were then aftermodified while maintaining the concepts that were initially being measured. The instruments were then administered to the same respondents. Depending on responses these instruments were restructured to give the same results when variously applied. Validity was enabled through randomization applied in the selection of the study sample. Use of random selection procedures for subjects aided in the control of statistical regression, differential selection and interaction of factors.

3.8 Data Collection Procedure
The study utilized triangulation methods of data collection. Primary data was collected through filling in questionnaires and conducting focus group interviews stated as per part 3.6 above. Secondary data was obtained through reviewing of existing literature of particular projects. Such data was accessed in project official records, project reports, monitoring and evaluation reports, contacting relevant government departments, libraries, and NGO websites among other sources. The researcher informed the relevant government authorities of the intention to undertake this academic research. Also, this information was relayed to various private, Non-Governmental, Faith-Based and Community-Based organizations that were affected by the study. The researcher also recruited and trained two research assistants to undertake data collection processes. The researcher and the assistants then embarked on data collection. Questionnaires were marked for ease of traceability and then dispatched through drop and pick method for the literate
respondents. Where focus group interviews were conducted, research assistants convened a group discussion and recorded the group responses in the interview schedules. The researcher personally collected the secondary data. The entire data collection process was scheduled to take only three weeks.

3.9 Data Analysis
Data analysis involves organization, manipulation and consideration of meaning of the data collected. It refers to reducing accumulated data to manageable sizes, coming up with summaries, identifying existing, patterns and applying statistical techniques (Cooper, 2006). According to Cooper, customarily the first step in data analysis is to edit the raw data. Editing detects errors and omissions, corrects them when possible, and certifies that maximum data quality standards are achieved. To analyze qualitative data content analysis was done. For quantitative data descriptive statistics were applied. Computer statistical package namely SPSS and Excel were utilized in these analyses. Data was presented in tables, charts and frequency tabulation.
CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF RESULTS

4.1 Introduction
This chapter contains the analysis of response rate, analysis of background information, quantitative analysis, qualitative analysis and summary of data analysis.

4.2 Analysis of Response Rate
The study targeted various project stakeholders who were stratified into various categories to ease data collection. The strata were: project management, projection implementation team, donors and beneficiaries. Data from the first three was collected through questionnaires administered by research assistants through drop and pick method while that from project beneficiaries was collected through focus group interview schedules. Data on documents applied in project schedule control was collected through document review. A total of twenty (20) projects were sampled for the study with the instruments administered as follows: 120 questionnaires, 40 interview schedules and 20 document reviews. For the questionnaires those returned back with responses valid for analysis were eighty (80) questionnaires representing 66.67% response rate. Out of the eighty (80) respondents of the questionnaires 42 were females and 38 were males.

![Response Rate by Age Category and Gender](image_url)

Fig.4.1: Response Rate by Age Category and Gender
For the focus groups, only thirty focus group interviews were successfully conducted while for the ten remaining focus groups, in seven projects, beneficiaries lacked the required information and in three other projects groups were hard to convene within the data collection timeframe. The response rate was therefore 75%. In the document review most projects were reluctant to let out their documents. Only Trocaire International, IRDP, Green Africa Foundation and EcoAct funded projects allowed document accessibility. Therefore only ten (10) projects’ documents were studied. Document review response rate was thus 50%.

Following the fact that multiple data collection methods were applied, data from each source was analyzed independently but conclusions were in consideration of all the data collected.

4.3 Analysis of Background Information

This study was carried out in Mbeere North district in Embu County. The four administrative divisions of the district i.e. Evurore, Siakago, Kanyuambora and Nthawa formed the cluster samples. The general objective was to determine what affects project schedule control during project implementation despite initially having a feasible baseline schedule at project start up.

On sampling the projects as per part 3.5 of this report, twenty (20) projects undertaken by NGOs were studied as follows; APHIA Plus (2), Trocaire International (4), EcoAct (2), JICA (1), Green Africa Foundation (2), Child Fund (1), ACK (2), IRDP (2) and Compassion International (4). For the individual respondents studied through questionnaires, 93.8% of the respondents indicated that the projects they were involved in were late in implementation. Only 6.2% indicated that there was no significant variation in timeframe. This is indicated in the table below:

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>75</td>
<td>93.8</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>6.2</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
</tr>
</tbody>
</table>

To develop the project schedule various tools and techniques were applied, namely; expert judgement, three-point estimating, previous knowledge and involving the entire project team in the process. The responses by respondents on the tools and techniques applied in their projects are as indicated below:
Figure 4.2: Histogram of tools and techniques used in estimating project duration

1-Expert judgment; 2-three-point estimating; 3-previous knowledge estimating; 4-team average estimating; 5-don’t know.

The bar-chart represents the tools and techniques used in arriving at the planned project’s duration. It’s clear that previous knowledge estimating at 32% was used in arriving at the planned project’s duration. Expert judgement was 19%, and 20% were ignorant of technique applied in developing the project schedule. Three point estimating was barely used but only at 4% in determining the project’s duration time line at a mean of 3.01 and standard deviation of 1.445. The histogram gives a normal distribution in the tools and techniques used in arriving at the planned project duration.
4.4 Quantitative Analysis

The specific objectives of the study in this section were analyzed as outlined below:

4.4.1 Effect of Project Manager’s Expertise on Project Schedule Control during implementation of NGOs Projects

It was initially thought that NGO projects slip off-schedule in the implementation phase as a result of being run by managers who lack the expertise in project management.

When asked to comment on the competence of their projects' managers as a factor that caused their projects to slip out of schedule during project implementation the respondents answered as tabulated below:

Table 4.2: Incompetence of the project manager as a cause of schedule slippage

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>7</td>
<td>8.8</td>
</tr>
<tr>
<td>Agree</td>
<td>13</td>
<td>16.3</td>
</tr>
<tr>
<td>Not decided</td>
<td>18</td>
<td>22.5</td>
</tr>
<tr>
<td>Disagree</td>
<td>19</td>
<td>23.8</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>23</td>
<td>28.8</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From the above responses, only 8.8% of respondents strongly agreed that schedule variation was caused by incompetent project managers. 16.3% also agreed. Strong disagreement was 28.8%, disagree 23.8% and undecided 22.5%.

On the same analysis, pertaining the expertise of a project manager in controlling project schedule, respondents were asked to rank some general management aspects of the project manager. These aspects were; motivation of project staff, convening of consultative meetings, strictness to deadlines and conflict resolution. The ranking scale was Very Good, Good, Not Decided, Poor and Very Poor. The responses were analyzed as per tables 5, 6, 7 and 8 shown below.

Table 4.3: Distribution on whether project managers motivated staff

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very good</td>
<td>22</td>
<td>27.5</td>
</tr>
<tr>
<td>Good</td>
<td>44</td>
<td>55.0</td>
</tr>
<tr>
<td>Not decided</td>
<td>11</td>
<td>13.8</td>
</tr>
<tr>
<td>Poor</td>
<td>3</td>
<td>3.8</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Respondents indicated that most project managers motivated their staff well.
Table 4.4: Distribution on whether project managers convened consultative meetings

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very good</td>
<td>35</td>
<td>43.8</td>
</tr>
<tr>
<td>Good</td>
<td>38</td>
<td>47.4</td>
</tr>
<tr>
<td>Not decided</td>
<td>7</td>
<td>8.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

About 91% of respondents agreed that managers regularly convened meetings to brief stakeholders on project progress and status. None disagreed while only 8.8% were undecided.

Table 4.5: Distribution on whether Project managers were strict to deadlines.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very good</td>
<td>21</td>
<td>26.3</td>
</tr>
<tr>
<td>Good</td>
<td>30</td>
<td>37.5</td>
</tr>
<tr>
<td>Not decided</td>
<td>18</td>
<td>22.5</td>
</tr>
<tr>
<td>Poor</td>
<td>10</td>
<td>12.5</td>
</tr>
<tr>
<td>Very poor</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Respondents rated very good (26.3%) and good (37.5%) that project managers were strict to project deadlines, 22.5% were undecided, 12.5% rated poor and 1.3% very poor.

Table 4.6: Distribution on whether project managers resolved conflicts

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very good</td>
<td>18</td>
<td>22.5</td>
</tr>
<tr>
<td>Good</td>
<td>35</td>
<td>43.8</td>
</tr>
<tr>
<td>Not decided</td>
<td>23</td>
<td>28.8</td>
</tr>
<tr>
<td>Poor</td>
<td>4</td>
<td>5.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Project managers were rated by respondents as being capable of resolving conflicts arising within the project. Only 5% were of the contrary opinion while 28.8% were undecided.

In the focus group interviews to get feedback from project beneficiaries on a project manager's ability to manage project schedule, project beneficiaries were required to state the levels to which they were involved by project management throughout the execution phase in their respective projects. The levels tested were the project activity definition, activity duration estimation,
project duration estimation, progress reviewing, generating requested changes and approval of requested changes. It is a common knowledge that a competent project manager should practice stakeholders’ involvement throughout the project life cycle. The responses obtained are as outlined in tables below.

Table 4.7: Distribution on whether the beneficiaries were involved in project activity definition

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never involved</td>
<td>11</td>
</tr>
<tr>
<td>Slightly involved</td>
<td>2</td>
</tr>
<tr>
<td>Highly involved</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
</tr>
</tbody>
</table>

From the table, 36.7% of the respondents indicated that they were never involved in the project activity definition. 6.7% were slightly involved while 56.7% of them were highly involved. It’s clear that a majority of the respondents were involved in this activity.

Table 4.8: Distribution of the beneficiaries’ involvement in the project duration estimation

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never involved</td>
<td>9</td>
</tr>
<tr>
<td>Slightly involved</td>
<td>14</td>
</tr>
<tr>
<td>Highly involved</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
</tr>
</tbody>
</table>

From table, 30% of the respondents were never involved in project duration estimation, 46.7% of them were slightly involved while only 23.3% of them were highly involved in the project duration estimation. It’s also the case that a majority of the respondents were involved.
Table 4.9: Distribution on the involvement of the beneficiaries in the project progress reviewing

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never involved</td>
<td>4</td>
</tr>
<tr>
<td>Slightly involved</td>
<td>6</td>
</tr>
<tr>
<td>Highly involved</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
</tr>
</tbody>
</table>

From the table above, 13.3% of the respondents were never involved in project reviewing while 20% of them were slightly involved and 66.7% were highly involved in project progress review.

Table 4.10: Distribution on involvement of the project beneficiaries in generating schedule changes

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never involved</td>
<td>12</td>
</tr>
<tr>
<td>Slightly involved</td>
<td>14</td>
</tr>
<tr>
<td>Highly involved</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
</tr>
</tbody>
</table>

From the table above, 40% of the beneficiaries denied involvement in the project generating schedule changes. Some 46.7% of them agreed that they were slightly involved while 13.3% of them indicated that they were highly involved. It’s the case that majority of the respondents were involved in generating schedule changes.

Table 4.11: Distribution on involvement of beneficiaries in the approval of the requested changes

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never involved</td>
<td>8</td>
</tr>
<tr>
<td>Slightly involved</td>
<td>14</td>
</tr>
<tr>
<td>Highly involved</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
</tr>
</tbody>
</table>

According to the table above, 26.7% of the respondents indicated that they were never involved in project approval of the requested changes but 46.7% indicated that they were slightly involved.
while 26.7% of them indicated that they were highly involved. Therefore, it's the case where majority of the beneficiaries were involved in project approval of the requested changes.

Another task of a project manager in project schedule management is monitoring and control. When asked to state who was responsible for monitoring and control, the responses were as represented in the pie-chart below. From the pie-chart, 65% of the respondents indicated that project managers were responsible for the project monitoring and control throughout the project implementation. 17.5% of the respondents indicated that project monitoring and control was the responsibility of the donor/donor representative and 13.75% of them indicated that the responsibility of project monitoring and control was done by project committee while 3.75% of the respondents indicated that monitoring and control was undertaken by monitoring and evaluation specialist.

![Pie-chart representing those responsible for the project monitoring and control](image)

Figure 4.3: Pie-chart representing those responsible for the project monitoring and control

The task of project scheduling is the responsibility of the project manager. The respondents in this case were asked the question; who developed the project schedule for their projects? It was found that, 57.1% of the male respondents and 42.9% of the female respondents indicated that project managers were responsible for developing the project schedule. 58.3% of the male respondents and 41.7% of the female respondents indicated that PMC members and project implementation team were responsible for developing the project schedule. 20% of the male respondents and 80% of the female respondents indicated that the responsibility of developing project schedule was left to the donors. This is represented in the figure below;
4.4.2 Project Donor Policies effect on Project Schedule Control during Implementation of NGOs Projects

Donors institute policies that dictate how the project will be implemented and thus implementers have to abide by those policies hence limiting their ability to control project schedule.

To get the effect of donor policies on project schedule control, respondents were asked to give their opinion on whether donor policies delayed project implementation.

Table 4.12: Distribution on whether donor policies caused variation in project duration

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>8.8</td>
</tr>
<tr>
<td>Agree</td>
<td>27.5</td>
</tr>
<tr>
<td>Not decided</td>
<td>28.8</td>
</tr>
<tr>
<td>Disagree</td>
<td>18.8</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>16.3</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The responses obtained are as outlined in the table above where, only 8.8% of the respondents strongly agreed that donor policies caused variation in the implementation duration of the project while 27.5% just agreed that donor policies caused schedule variation while 28% were undecided. 16.3% of the respondents strongly disagreed whereas 18.8% merely disagreed.

The donor policies affecting project schedule control include the M&C of the project schedule. Even though the above pie-chart (Fig. 7) shows that M&C is mostly done the project managers, 17.5% of the respondents indicated that project donors were responsible for Monitoring and Control.

The donors alongside other project stakeholders are also involved in project schedule development. Figure 8 above refers, where 80% of females indicated that donor agencies were involved in project schedule development and 20% male respondents had the same opinion.

### 4.4.3 Effect of Project Complexity on Project Schedule Control during Implementation of NGOs Projects.

The basic assumption was that project complexity manifests during project implementation which affects the project implementation schedule.

Respondents in this case were required to give their opinion on the extent to which they felt that project complexity was a factor affecting project implementation schedule. The responses were as tabulated below:

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>10</td>
</tr>
<tr>
<td>Agree</td>
<td>29</td>
</tr>
<tr>
<td>Not decided</td>
<td>13</td>
</tr>
<tr>
<td>Disagree</td>
<td>25</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
</tr>
</tbody>
</table>

Most respondents (48.8%) indicated that project complexities were the cause of projects slipping off schedule during project implementation. A smaller fraction of 35.1% disagreed while 16.3% were not decided.

Having known how project complexity caused variation between the actual and planned project duration, stakeholders were asked to rank various complexities depending on the extent to which they negatively impact on project schedule control. The complexities considered were technical,
financial, managerial, economic, socio-cultural and environmental complexities. The responses are as presented below:

Table 4.14: Distribution on whether technical complexities affected project schedule control

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>13</td>
<td>16.3</td>
</tr>
<tr>
<td>Agree</td>
<td>22</td>
<td>27.5</td>
</tr>
<tr>
<td>Not decided</td>
<td>20</td>
<td>25.0</td>
</tr>
<tr>
<td>Disagree</td>
<td>18</td>
<td>22.5</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>7</td>
<td>8.8</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
</tr>
</tbody>
</table>

It was indicated from this study that 43.8% of the respondents agreed that technical issues during project implementation affected schedule. 25% were of the contrary opinion while 31.3% were not decided.

Table 4.15: Distribution on financial constraints causing delay in the implementation of the project

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>24</td>
<td>30.0</td>
</tr>
<tr>
<td>Agree</td>
<td>10</td>
<td>12.5</td>
</tr>
<tr>
<td>Not decided</td>
<td>15</td>
<td>18.8</td>
</tr>
<tr>
<td>Disagree</td>
<td>19</td>
<td>23.8</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>12</td>
<td>15.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From table 4.15 above, 30% of the respondents strongly agreed that financial constraints caused delay in the implementation of the project, 12.5% agreed, 18.8% were not decided, 23.8% disagreed and 15% of them strongly disagreed that financial constraint was a possible cause of the project duration exceeding baseline schedule.
Table 4.16: Distribution on managerial complexity effect on project timeframe

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>8</td>
<td>10.0</td>
</tr>
<tr>
<td>Agree</td>
<td>20</td>
<td>25.0</td>
</tr>
<tr>
<td>Not decided</td>
<td>21</td>
<td>26.3</td>
</tr>
<tr>
<td>Disagree</td>
<td>17</td>
<td>21.3</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>14</td>
<td>17.5</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From table 4.16 above; 10% of the respondents strongly agreed that complexity in management was a possible cause of delay in the implementation of the project. 20% merely agreed, 21% were not decided, 21.3% disagreed and 17.5% of the respondents strongly felt that the complexity of the project could not be a possible cause of delay in the implementation duration planned.

Table 4.17: Distribution on whether economic complexity cause delays in the implementation of the project

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>10</td>
<td>12.5</td>
</tr>
<tr>
<td>Agree</td>
<td>20</td>
<td>25.0</td>
</tr>
<tr>
<td>Not decided</td>
<td>23</td>
<td>28.8</td>
</tr>
<tr>
<td>Disagree</td>
<td>19</td>
<td>23.8</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>8</td>
<td>10.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From table above, 12.5% of the respondents strongly agreed that economic complexities could be a possible cause of the delay in the implementation of the project, 25% agreed, 8% were not decided, 23.8% disagreed while 10% of the respondents strongly disagreed that economic factors could have caused reasonable delay in project completion.
Table 4.18: Socio-cultural complexities causing delays in the implementation of the project

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>8</td>
<td>10.0</td>
</tr>
<tr>
<td>Agree</td>
<td>14</td>
<td>17.5</td>
</tr>
<tr>
<td>Not decided</td>
<td>27</td>
<td>33.8</td>
</tr>
<tr>
<td>Disagree</td>
<td>16</td>
<td>20.0</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>15</td>
<td>18.8</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From the table, 10% of the respondents strongly agree that complexities in the social-cultural norms were possible cause of the delay. 17.5% agree, 33.8% are not sure, 20% disagree while 18.8% of the respondents strongly disagree that social-cultural norms have a significant influence in the project completion time.

Table 4.19: Environmental constraints causing delays in the implementation of the project

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>15</td>
<td>18.8</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
<td>5.0</td>
</tr>
<tr>
<td>Not decided</td>
<td>21</td>
<td>26.3</td>
</tr>
<tr>
<td>Disagree</td>
<td>22</td>
<td>27.5</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>18</td>
<td>22.5</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From the table, 18.8% of the respondents strongly agree that environmental constrains were possible causes of the project implementation delay, 5% agreed, 26.5% were undecided, 27.5% disagreed while 22.5% strongly disagreed that environmental constrains play a significant role in the delay of the project implementation.

4.4.4 Effect of Projects Risks on Project Schedule Control during Implementation of NGOs Projects.

Risks arising during project execution hinder the attainment of the targeted project timeframe.

Project stakeholders were first asked to confirm whether unanticipated events set in during project implementation that affected project schedule during project implementation thereby resulting in variation between actual and planned project implementation timeframes. The responses by
various stakeholders were 20% strongly agree, 36.3% agree, 16.3% not decided, 23.8% disagree and only 3.8% disagree. In summary 56.3% of the respondents (20% strongly agree and 36.3% agree) were in agreement that unanticipated events were the cause of project schedule slippage during project implementation. This is presented in the table below:

Table 4.20: Distribution on whether unanticipated events delay project implementation

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>16</td>
</tr>
<tr>
<td>Agree</td>
<td>29</td>
</tr>
<tr>
<td>Not decided</td>
<td>13</td>
</tr>
<tr>
<td>Disagree</td>
<td>19</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
</tr>
</tbody>
</table>

4.5 Qualitative Analysis

This analysis is based on qualitative data collected through the questionnaires, focus group interview schedules and document review just as in quantitative analysis above.

The instruments of data collection outlined various reasons as to why projects slip out of schedule during project implementation. These are outlined below according to study objectives.

4.5.1 Effect of Project Managers' Expertise on Schedule Control during Project Implementation

The respondents cited various aspects of a project managers' expertise that lead to projects slipping off schedule during project implementation. They acknowledged that project managers fail to apply hands-on management style. They leave implementation work to implementation team. They are unavailable to physically supervise the project execution process.

Respondents also noted that project managers recruit incompetent contractors, sub-contractors and suppliers. These end up delaying the project execution and delivery of materials respectively. Also project managers do not involve all relevant stakeholders in fixing the project schedule. As a result they come up with schedules that don't put on board local project issues. These unique project issues come up during project execution leading to delays in implementing the project.

Most projects cited human resource issues during project implementation. Project managers underestimate the number of staff required for the project. They also fail to identify and source
particular skills required for specific projects. As a result the available staff cannot execute the project on schedule and to required performance specifications.

**4.5.2 Effect of Donor Policies on Project Schedule Control during Project Implementation**

Various donor policies were cited as affecting project schedule control during project implementation. Donors fix the timeframe of the project even without understanding each project’s unique characteristics. These timeframes turn unachievable to the implementation team. In some cases it was observed that donors required project beneficiaries to finance certain components of the project. In this case donors required beneficiaries to offer free manual labour while the donors finance training, staff allowances and other technical aspects of the project. Beneficiaries take time to buy in the idea and this delay the project. Donors also release funds in phases implying that project must be implemented in those phases. Donors then have to be satisfied that a project phase has been well completed before they release the funds for the next phase which affects implementation timeframe. This is uncertainty on the part of the project manager as such time cannot be accurately estimated. Hence here the donor schedule conflicts that of the implementer. It was established that donors control the request for schedule changes and approval of the same. If the implementation team notices an opportunity to compress the schedule that wasn’t initially in the project plan such opportunity must be granted by the donor; this delays the project. Donors also determine the project reporting period, reporting formats and kind of project documentation to be applied in projects. This limits the flexibility of the project manager including in schedule control.

**4.5.3 Project Complexities affecting Project Schedule Control during Project Implementation**

Several project complexity factors were identified by stakeholders as affecting project schedule control during implementation phase. Respondents expressed concern that projects are started ‘using untested project plans and designs. Such designs later on turn difficult to implement hence mid-way the implementation, the project has to be redesigned to comply with the reality on the ground. This affects the initial project schedule hence delaying the project. Social complexities also resulted when stakeholders and especially beneficiaries involvement throughout the project is lacking. Such stakeholders fail to support project implementation hence more project implementation time is utilized rallying stakeholders to support the project idea.
Respondents argued that some projects architectural designs were too complex to implement at local NGO level and within the resources provided by the donor. These include irrigation projects. Such projects require collaboration with the relevant government agencies, community involvement and even political support. A project implementation that overlooks such complexities end up slipping off-schedule as these players consent has to be secured. According to respondents, most projects got overschedule as a result of lacking proper human resource to undertake specialized project tasks. Most NGOs focus on empowering the local community and thus employ the local human resource that lacks the competence to complete the project. Such policy is retrogressive to schedule control.

4.5.4 Effect of Project Risks on project Schedule Control during Project Implementation
The following project risks during project implementation were found to have undermined the compliance with the project schedule. For agricultural related projects, unfavourable climatic and weather conditions interfered with the projects schedule. Also unanticipated events such as conflicts over project land set in between project stakeholders and members of the community. There were risks of erratic release of project funds, inadequate project funding, delayed procurement and delivery of project materials, underestimation of project budget and lack of project specialized human resource. All these affected project implementation duration.

4.6 Chapter Summary
This chapter started with analysis of response rate and background information. Twenty projects were studied through questionnaires, focus group interviews and document review. The response rates were 66.7%, 75% and 50% respectively. From qualitative and quantitative data analyses, project objectives/ research questions were measured and results presented in tables, pie-charts, and bar-graphs for quantitative data and content analysis for qualitative data.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
This chapter contains the presentations of findings, answers to research questions, conclusions drawn from data analysis and recommendations.

5.2 Summary of Findings
The research problem that necessitated the undertaking of this research was based on the hypothesis that most NGO project get overschedule during project implementation. Statistics showed that 60-80% of NGO projects after implementation were over schedule (Chris, 2011; Gray and Larson, 2000). The general objective of the study was therefore to determine the factors affecting project schedule control during implementation of NGOs’ projects in Mbeere North District in Embu County. Four specific objectives were formulated to determine the effect of independent variable on the dependent variable (project schedule control). The specific objectives were to determine the effect of project manager’s expertise, donor policies, project complexities and project risks on project schedule control during implementation of NGOs projects in Mbeere North District. After the data collection, data analysis and presentation of results, the findings presented hereafter were obtained. The response rates were 66.7% for questionnaires, 75% for focus group discussions and 50% for document review. It was also observed that 85% of projects were overschedule in case of questionnaires, 80% in case of focus groups and 70% after reviewing project documents.

On the effect of project manager’s expertise on project schedule control during project implementation, 25.1% of the respondents were of the opinion that project managers lacked the expertise to implement projects on schedule. However 52.6% thought otherwise while 22.3% were indecisive on the issue. They also on the extent to which the manager allows beneficiaries participation, ranked the manager based on various implementation and schedule control stages. In project activity definition 63.4% of stakeholder were involved and 36.7% never involved; project duration estimation 70% involved and 30% never involved;
progress reviewing 86.7% involved and 13.3% never involved; generating requested changes 60% involved and 40% never involved; and on approval of requested changes 73.3% were involved and 26.6% never involved. In project monitoring and control, 65% of the respondents indicated that this task is done by the project manager.

The effect of donor policies on project schedule control during project implementation was also considered. It was established that 36.3% of the respondents agreed that some donor policies impacted on project implementation timeframe. Some 35.1% respondents disagreed while 28.8% were indecisive. Donors were also found to influence project schedule formulation. By gender 80% of the female respondents and 20% males indicated that donors were responsible for project schedule formulation. Donors also accounted for 17.5% M&C function according to this study.

Project complexities here had various dimensions, namely; technical, financial, managerial, economic, socio-cultural and environmental. Respondents agreed that these project complexities caused variation in project duration in various levels. When these complexities were considered in isolation, they negatively affected the schedule as follows: technical 43.8%, financial 42.5%, economic 37.5%, managerial 35.0%, socio-cultural 27.5% and environmental 23.8%.

Analysis of risks/ unanticipated events that led to variation between the planned and actual projects was also done. Respondents indicated that 56.3% of the projects delayed as a result of unanticipated events. Some 32.6% disagreed with this opinion while the remaining 16.3% were not decided. From qualitative analysis these risks included unpredictable climatic conditions, communal land disputes, inadequate project funding, unreliable suppliers, underestimation of project timeframe and inefficient project workforce.

5.3 Discussion of Findings

5.3.1 Effect of project manager's expertise on project schedule control during implementation of Non-Governmental projects in Mbeere North District

The information generated from data analysis showed that 52.6% of the respondents disagreed with the statement that project managers were responsible for schedule variance. The undecided constituted 22.3% of the respondents. Those who accepted that project delayed as a result of incompetent managers were 25.1%. Therefore a greater percentage of respondents disagreed that
project managers were incompetent to manage project schedule. This finding was further strengthened by responses to other questions testing this variable. Project managers ranked high in project monitoring and control at 65%. This indicated that they were keen on ensuring projects were on schedule. It was also found that project managers took charge of developing project schedules for their project. The tool that they used mostly was expert judgment at 32%. These attributes indicate that managers understand the entire project scheduling process. Pertaining to general management skills, respondents gave high scores to managers in convening consultative meetings (91.2% Agreed), motivation of staff (82.5% Agreed), conflict resolving (66.3% Agreed) and strictness to deadlines (63.8% Agreed). These findings are contrary to those by Jyothi (2007), who argued that most projects are run by people who lack authority and responsibility in project management.

5.3.2 Effect of project donor(s) policies on project schedule control during implementation of Non-Governmental projects in Mbeere North District

From research findings 36.3% of the respondents indicated that donor policies caused project schedule variation during project implementation. A lesser number of respondents disagreed (35.1%) while 28.8% had no idea. It was also established from qualitative analysis that donors institute some restrictions that limit the project implementers in managing project schedule. This study observed that donor agencies were involved in project schedule formulation. Though in consultation with project managers, the donors will definitely have more say over the process since they are the financiers. Also in consultation with other stakeholders, donors perform monitoring and control. They also fix timelines on how funds will be released and determine reporting standards and dates for the projects they fund. This confirms reports by IFC, (2009) who noted that donors place strict project timelines and reporting procedures that project implementers must adhere to. Donors according to EU have fixed reporting standards, and undertake their own monitoring and control in consultation with implementers.

5.3.3 Effect of project complexity on project schedule control during implementation of Non-Governmental projects in Mbeere North District

Research findings indicated that 48.8% of the respondents agreed that project complexities were responsible for delayed project execution. The remaining 35.1% disagreed while 16.3% were not sure. When asked to separately rank the components of project complexities according to how
negatively they caused delays in project execution, respondents gave the most negative as technical which 43.8% said is the main cause of project delay. Others complexities in decreasing order of negative impacts were financial (42%), economic 37.5%, managerial (35%), social (27.5%) and environmental (23.8%). Respondents cited application of untested technologies, unworkable project plans and designs, low adoption of project innovations, inadequate funds, and unskilled labour as some of the complexities encountered in project implementation. It is evident from these research findings that project complexities caused schedule slippage. This is strengthened by findings by Mohan, Wang and Zhao (2000). According to these authors project complexity includes degree of technology, total financial resources available, deliverables to be produced and time frames involved in delivery.

5.3.4 Effect of project risks on project schedule control during implementation of Non-Governmental projects in Mbeere North District

Research findings indicated that projects risks and more so unanticipated risks constitute a considerable cause why projects slip out of schedule. A total of 56.3% of the respondents agreed that schedule variation was caused by risk events, 32.4% disagreed while 16.3% were not decided. Risks cited by project stakeholders were: unfavourable and unpredictable climatic conditions, unreliable recruitment and procurement policies, delays in delivery of ordered materials, communal land disputes over project sites, inadequate project funds, misappropriation of project funds among others. Risk managers recommend that before project implementation starts, risk identification should have been done and contingency funds and plans should be in place to minimize risks in the event that they occur. In all the sampled projects however, none had the contingency reserves.

5.4 Conclusions

From the above research findings and answers to research questions, various conclusions were arrived at. It was concluded that NGOs hire competent managers to implement their projects. The project manager’s expertise in project schedule control was not a factor that significantly caused variation to projects duration during project implementation. Donor policies greatly impacted on project schedule and have been established to affect schedule control during project implementation. Also complexities associated with the particular project mainly; technical, financial, managerial and economic contribute to schedule slippage during project
implementation. It was also established in this study that project risks that occur during project implementation are a major cause of project schedule slippage. Following the statistics it can be concluded that most NGO projects overrun schedule and this is attributed to cropping up of risk factors during project implementation, project complexities and donor policies that are detrimental to implementation of the project within expected time frame.

5.5 Recommendations

5.5.1 Recommendation for Policy Purposes
For policy purposes the following recommendations are made based on conclusions arrived at above. Risk management plan should be a component of every NGO project. Such plan should be formulated with the involvement of all project stakeholders so that they can own the plan and cascade it down all the project levels. Risk management plan must include contingency reserve. On effect of project complexity on schedule control, it is recommended that in addition to recruiting a good manager for the project, other required specific skills should be employed in the project. These include financial specialists, field technicians, environmentalists, sociologists, M&E specialists among others to reduce project complexity. Donors should formulate policies regarding particular projects in liaison with actual project stakeholders. Most donor policies are blanket and fail to focus on unique characteristics of the project hence negatively affecting project schedule.

5.5.2 Recommendation for Further Research
For further research, it's recommended that that a study should be carried to determine the actual losses incurred by project stakeholders when projects delay. The findings will enable project stakeholders to come up with serious project implementation policies that further strengthen the policy recommendations of this research.
Appendix 1

Questionnaire No.

Mr. Josphat N. Nthiga
Kenyatta University- City Campus
P.O. BOX 43,844-00100
NAIROBI

Date: 10/03/2013

The Respondent:

Dear Sir/Madam,

RE: RESEARCH PROJECT (SCU-601)

The objective of this questionnaire is to collect data for the above academic research at Kenyatta University, School of Business in partial fulfillment for the Award of Masters of Business Administration-Project Management option. The information obtained will be treated with utmost confidentiality and will be utilized purely for academic purposes.

The questionnaire will be filled by ticking appropriately the option(s) available and in case of open-ended questions filling in the spaces provided appropriately.

Your co-operation will be highly appreciated.

JOSPHAT NJERU NTHIGA

0713529338
PART ONE
Background Information of the Respondent

1) Name (optional)

2) Gender

3) Age category
[1] 18-30 Years □
[2] 31-40 Years □
[3] 41-50 Years □
[4] 51 Years and above □

4) State the administrative location of your residence

4.1 Location

4.2 Division

5) How long have you lived in the administrative area specified in part 4 above?
[1] Below 1 Year □
[2] 1-5 Years □
[3] 6-10 Years □
[4] Over 10 Years □

PART TWO: Project Information

6.1 Project Name/Title

6.2 Category of stakeholder
i) Project Manager □
ii) PMC member □
iii) Contractor □
iv) Implementation team member □
v) Donor □
vi) Other (Specify) □

7) Which organization(s) funded the project?
   i) □
   ii) □

8) Which organization(s) implemented the project either fully or as sub-contractors?
   i) □
   ii) □
9) What was the planned project implementation duration? Years ........ Months ............
10) What was the duration of actual project implementation? Years ........ Months ............
11) The following were indicators that the project was deviating from schedule. Give your opinion accordingly.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Not Decided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postponing activities due to lack of funds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outsourcing work due complexity of tasks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stakeholders called to re-plan the project</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project stalled then progressed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ad-hoc review meeting convened</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PART THREE: Independent Variables Information

Section A: General Effect of Independent Variables on Project Schedule Control

12) The following factors caused variance between the planned project duration and the actual project duration in part (10) above. Give your opinion by ticking appropriately in table below.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Not Decided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project manager was incompetent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donors policies delayed project implementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The project was too complex to implement as per initial schedule</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unanticipated events set in during project implementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section B: Project Managers Expertise

14) Who developed the project schedule for this project? (Tick appropriately).
   i) Project Manager
   ii) Project implementation team
   iii) Project management committee
   iv) Consultants
   v) Donors
   vi) Don’t know
   vii) Other (specify).................................

15) What tools and techniques did the above use in arriving at the planned project duration?
   i) Expert judgment
   ii) Three-point estimating
   iii) Previous knowledge estimating
   iv) Team average estimates
   v) Don’t know

16) What techniques were applied in developing the project schedule for the project?
   i) Critical Path Method (CPM)
   ii) Program Evaluation and Review Technique
   iii) Drawing Bar/Gantt Charts
   iv) Other (Specify).................................

17) Who was responsible for project Monitoring and Control?
   i) Project Manager
   ii) Monitoring and Evaluation Specialist
   iii) Donor representative
   iv) Project Committee
   v) Don’t know
   vi) Other (specify)..................................

18) What was the project progress and status reporting period? (Tick appropriately)
   i) Weekly
ii) Every two weeks

iii) Monthly

iv) Every two months

v) Other (specify)..............................

19) Which tools did the project implementation team use in project schedule control throughout the project time frame? (Tick appropriately)

i) Progress reporting

ii) Status reporting

iii) Performance measurement

iv) Variance Analysis

v) Schedule comparison bar-charts

vi) Other (specify)..........................

20) How can you rank the project managers' expertise in the project schedule control for the particular project based on the following aspects?

<table>
<thead>
<tr>
<th>Motivating the staff</th>
<th>Very Good</th>
<th>Good</th>
<th>Not Decided</th>
<th>Poor</th>
<th>Very Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convening consultative meetings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strictness to deadlines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolving conflicts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section C: Donor policies

21) What policies had the financiers/donors instituted in line with their mainstream policies that affected the project implementation timeframe?

i) ........................................................................................................

ii) ........................................................................................................

iii) ........................................................................................................

iv) ........................................................................................................

Section D: Project Complexities

22) The following complexities could have caused delays in the implementation of the project. What is your opinion? (Tick appropriately)
23). How can the complexities stated above be alleviated to avoid delaying the project implementation?

i) ........................................................................................................................................

ii) .........................................................................................................................................

iii) .........................................................................................................................................

iv) .........................................................................................................................................

v) .........................................................................................................................................

Section E: Project Risks during Implementation

24). What risks/uncertainties affected the project schedule control during the project execution phase?

i) ........................................................................................................................................

ii) .........................................................................................................................................

iii) .........................................................................................................................................

iv) .........................................................................................................................................

25) What risks management practices did the project manager incorporate in the project management plan to counter risks causing schedule variance?

i) ........................................................................................................................................

ii) .........................................................................................................................................

iii) .........................................................................................................................................
Appendix 11: Document Review Schedule

Mr. Josphat N. Nthiga
Kenyatta University-City Campus
P.O Box 43,844-00100
NAIROBI
Date

The Project Manager
Project Name

Dear Sir/ Madam,

RE: REVIEW OF PROJECT IMPLEMENTATION DOCUMENTS
I am the above named person currently pursuing Masters of Business Administration- Project Management Option at Kenyatta University. My research is on project schedule control during project execution phase. Kindly allow access into the following documents pertaining to the above cited project.

1) Work Breakdown Structure
2) Baseline Schedule
3) Progress Reports
4) Changes request and approval reports
5) Actual Implementation Schedule
6) Project Network
7) Periodic Schedule Status Reports

The information obtained will be treated with utmost confidentiality.

Josphat N. Nthiga
0713529338
Dear Sir/Madam,

RE: RESEARCH PROJECT (SCU-601)

The objective of this Focus Group Interview is to collect data for the above academic research at Kenyatta University, School of Business in partial fulfillment for the Award of Masters of Business Administration-Project Management option. The information obtained will be treated with utmost confidentiality and will be utilized purely for academic purposes.

Your co-operation will be highly appreciated.

JOSPHAT NJERU NTHIGA

0713529338
Background Information

1. As a beneficiary of the above mentioned project, what benefits did the above mentioned project target to deliver?

2. What was the planned project duration? Years Months

3. What was the actual project duration? Years Months

4. What factors in your opinion could have driven the implementation of the project to the variation between the actual and planned timeframes?
   i) ........................................................................................................
   ii) ........................................................................................................
   iii) ........................................................................................................
   iv) ........................................................................................................

Section A: Effect of Project Managers Expertise on Schedule Control

5. The project beneficiaries were involved at different levels of project time management. Tick appropriately.

<table>
<thead>
<tr>
<th></th>
<th>Never involved</th>
<th>Slightly involved</th>
<th>Highly involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project activity definition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity duration estimation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project duration estimation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Progress reviewing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generating Schedule changes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approval of requested changes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. What attributes of the project manager affected the implementation of the project to the planned project timeframe?
   i) ........................................................................................................
   ii) ........................................................................................................
   iii) ........................................................................................................
   iv) ........................................................................................................
Section B: Effect of Donors Policies on Schedule Control

7. In what different ways do you think the project donor/financier influenced the project schedule of the stated project?
   a) .................................................................
   b) .................................................................
   c) .................................................................
   d) .................................................................
   e) .................................................................

Section C: Effect of Project Complexity on Schedule Control

8. What difficulties do you think could have been encountered during project implementation that affected the project timeframe?
   a) .................................................................
   b) .................................................................
   c) .................................................................
   d) .................................................................

Section D: Effect of Project Risks on Schedule Control

9. Which anticipated and un-anticipated project problems cropped in during project implementation that might have affected project schedule?
   a) .................................................................
   b) .................................................................
   c) .................................................................
   d) .................................................................
## Appendix IV

### Sampling Frame of NGO Projects in Mbeere North District

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Sector of Operation</th>
<th>Donor Agency</th>
<th>Administrative division</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kamukanya Water tanks installation</td>
<td>Water &amp; Sanitation</td>
<td>Trocaire</td>
<td>Evurore</td>
</tr>
<tr>
<td>Mang’ote Water tanks installation</td>
<td>Water &amp; Sanitation</td>
<td>Trocaire</td>
<td>Evurore</td>
</tr>
<tr>
<td>Seed Fair/distribution</td>
<td>Agriculture</td>
<td>IRDP</td>
<td>Siakago</td>
</tr>
<tr>
<td>Seed fair/distribution</td>
<td>Agriculture</td>
<td>IRDP</td>
<td>Evurore</td>
</tr>
<tr>
<td>Seed fair/distribution</td>
<td>Agriculture</td>
<td>IRDP</td>
<td>Nthawa</td>
</tr>
<tr>
<td>Silo Construction</td>
<td>Food Security</td>
<td>IRDP</td>
<td>Nthawa</td>
</tr>
<tr>
<td>Silo Construction</td>
<td>Food Security</td>
<td>IRDP</td>
<td>Siakago</td>
</tr>
<tr>
<td>Silo Construction</td>
<td>Food Security</td>
<td>IRDP</td>
<td>Kanyuambora</td>
</tr>
<tr>
<td>Ishiara Community Health Project</td>
<td>Health</td>
<td>APHIA Plus Kamili</td>
<td>Evurore</td>
</tr>
<tr>
<td>Siakago Community Health Project</td>
<td>Health</td>
<td>APHIA Plus Kamili</td>
<td>Siakago</td>
</tr>
<tr>
<td>Green Bicycle Project</td>
<td>Transport &amp; Energy</td>
<td>Green Africa Foundation</td>
<td>Evurore</td>
</tr>
<tr>
<td>Green Bicycle Project</td>
<td>Transport &amp; Energy</td>
<td>Green Africa Foundation</td>
<td>Siakago</td>
</tr>
<tr>
<td>Green Bicycle Project</td>
<td>Transport &amp; Energy</td>
<td>Green Africa Foundation</td>
<td>Nthawa</td>
</tr>
<tr>
<td>Siakago Tree Nursery Project</td>
<td>Agroforestry</td>
<td>Green Africa Foundation</td>
<td>Siakago</td>
</tr>
<tr>
<td>Mang’ote OVC Project</td>
<td>HIV/AIDS</td>
<td>Child Fund</td>
<td>Evurore</td>
</tr>
<tr>
<td>Kambungu School for the Disabled</td>
<td>Education</td>
<td>Child Fund</td>
<td>Evurore</td>
</tr>
<tr>
<td>Project Description</td>
<td>Sector</td>
<td>Implementing Organization</td>
<td>Location</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-----------------------------</td>
<td>-----------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Mang’ote Charcoal Kiln construction</td>
<td>Energy &amp; Environment</td>
<td>Forest Action Network</td>
<td>Evurore</td>
</tr>
<tr>
<td>Kiang’ombe Sand Dam</td>
<td>Environment</td>
<td>Forest Action Network</td>
<td>Siakago</td>
</tr>
<tr>
<td>Kang’ote Sand Dam</td>
<td>Environment</td>
<td>Forest Action Network</td>
<td>Siakago</td>
</tr>
<tr>
<td>Kianjeru solar project</td>
<td>Energy</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Improved Jiko Project in (7) Public Schools</td>
<td>Energy</td>
<td>Baraka Agricultural College</td>
<td>Evurore</td>
</tr>
<tr>
<td>Food For Work-Ndurumori</td>
<td>Nutrition</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Food For Work-Kamarandi</td>
<td>Nutrition</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Food For Work-Ishiara</td>
<td>Nutrition</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Kangai Skylimit Irrigation Project</td>
<td>Agriculture</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Kyeniri Dairy goats project</td>
<td>Livestock production</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Kogari Dairy goats project</td>
<td>Livestock production</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Mang’ote Dairy goats project</td>
<td>Livestock production</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Makuuri Dairy goats project</td>
<td>Livestock production</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Ciangera Dairy goats project</td>
<td>Livestock production</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Kianthenga Dairy goats project</td>
<td>Livestock production</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Nthigirani Dairy goats project</td>
<td>Livestock production</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Muramba Dairy goats</td>
<td>Livestock production</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Project</td>
<td>Sector</td>
<td>Organization</td>
<td>Location</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------</td>
<td>-----------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Kigwambiti Dairy goats project</td>
<td>Livestock production</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Kambungu Dairy goats project</td>
<td>Livestock production</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Nthungiri Earth Dam</td>
<td>Water conservation</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Kambuu Earth Dam</td>
<td>Water conservation</td>
<td>Trocaire International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Sinai CDC borehole project</td>
<td>Water &amp; Irrigation</td>
<td>Compassion International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Kamwaa CDC Irrigation project</td>
<td>Agriculture</td>
<td>Compassion International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Kogari CDC</td>
<td>Child Welfare</td>
<td>Compassion International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Kamigua CDC</td>
<td>Child Welfare</td>
<td>Compassion International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Ngoce CDC</td>
<td>Child Welfare</td>
<td>Compassion International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Ciangera CDC</td>
<td>Child Welfare</td>
<td>Compassion International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Kamutu CDC</td>
<td>Child Welfare</td>
<td>Compassion International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Njarange CDC</td>
<td>Child Welfare</td>
<td>Compassion International</td>
<td>Evurore</td>
</tr>
<tr>
<td>Kathiga-Gaceru CDC</td>
<td>Irrigation</td>
<td>Compassion International</td>
<td>Kanyuambora</td>
</tr>
<tr>
<td>Giti CDC</td>
<td>Child Welfare</td>
<td>Compassion International</td>
<td>Kanyuambora</td>
</tr>
<tr>
<td>Kavengero CDC</td>
<td>Child Welfare</td>
<td>Compassion International</td>
<td>Kanyuambora</td>
</tr>
<tr>
<td>Ngunyumu CDC</td>
<td>Child Welfare</td>
<td>Compassion International</td>
<td>Kanyuambora</td>
</tr>
<tr>
<td>Ovarire CDC</td>
<td>Child Welfare</td>
<td>Compassion International</td>
<td>Kanyuambora</td>
</tr>
<tr>
<td>Organization</td>
<td>Sector</td>
<td>Partner</td>
<td>Location</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------</td>
<td>------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Cieria CDC</td>
<td>Child Welfare</td>
<td>Compassion International</td>
<td>Nthawa</td>
</tr>
<tr>
<td>Kirie Energy Efficient Stoves</td>
<td>Energy and Environment</td>
<td>EcoAct</td>
<td>Nthawa</td>
</tr>
<tr>
<td>Kiambeere Energy Efficient Stoves</td>
<td>Energy and Environment</td>
<td>EcoAct</td>
<td>Nthawa</td>
</tr>
<tr>
<td>Siakago Energy Efficient Stoves</td>
<td>Energy and Environment</td>
<td>EcoAct</td>
<td>Siakago</td>
</tr>
<tr>
<td>MlaChake Irrigation</td>
<td>Agriculture</td>
<td>JICA</td>
<td>Evurore</td>
</tr>
<tr>
<td>Kiambindu Irrigation</td>
<td>Agriculture</td>
<td>JICA</td>
<td>Evurore</td>
</tr>
</tbody>
</table>
REFERENCES


Inocencio, A; Kikuchi, M; Tonosaki, M; Merry, D; Murayama, A; I de Jong; Sally, H and Penning, D (2005). Lessons from Irrigation Experiences. Cost Reducing and Performance Options for Sub-Saharan Africa.


