ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

DEPARTMENT OF PROJECT MANAGEMENT

THE EFFECTIVENESS OF MONITORING AND EVALUATION SYSTEMS: THE CASE OF NON-GOVERNMENTAL ORGANIZATIONS IMPLEMENTING AGRICULTURAL DEVELOPMENT PROJECTS IN ETHIOPIA

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August, 2019

Addis Ababa, Ethiopia

The Effectiveness of Monitoring and Evaluation Systems: The Case of Non-Governmental Organizations Implementing Agricultural Development Projects in Ethiopia

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A Research Project Submitted to Addis Ababa University School of Commerce in Partial Fulfillment of the Requirements for the Degree of Masters of Project Management

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DECLARATION

I, Elias Wolde, declare that the research project entitled “The Effectiveness of Monitoring and Evaluation Systems: The Case of Non-Governmental Organizations Implementing Agricultural Development Projects in Ethiopia” is my own original work, and has not been submitted for any degree in any other University. All sources of materials used for this study have been duly acknowledged.

Name: Elias Wolde

Signature: _____

Date: _____

CERTIFICATION

This is to certify that Elias Wolde has conducted this project work entitled “The Effectiveness of Monitoring and Evaluation Systems: The Case of Non-Governmental Organizations Implementing Agricultural Development Projects in Ethiopia” under my supervision. This project work is original, and suitable for the submission in partial fulfillment of the requirement for the award of Master of Arts Degree in Project Management.

Name of Advisor: Worku Mekonnen (PhD)

Signature: _____

Date: _____

LIST OF TABLES

Table 3. 1: Size of the study target population 25
Table 3. 2: Reliability test 27
Table 4. 1: Characteristics of the respondent organizations 29
Table 4. 2: Availability of M&E plans and their practicability 30
Table 4. 3: The levels of importance of RBM tools 31
Table 4. 4: Purposes of evaluation 36
Table 4. 5: Dimensions of effectiveness of M&E systems 38
Table 4. 6: Adequacy of the budget for different inputs of M&E 41
Table 4. 7: Human resource capacity of the respondent organizations in M&E 42
Table 4. 8: Respondents' year of experience in M&E 42
Table 4. 9: Trainings received in M&E 43
Table 4. 10: The use of information systems in data collection 43
Table 4. 11: The use of information systems in data analysis 44
Table 4. 12: The use of information systems in reporting 45
Table 4. 13: Stakeholders' involvement in M&E processes 47
Table 4. 14: The views of respondent organizations towards learning 48
Table 4. 15: Pearson correlation between independent variable 49
Table 4. 16: Tolerance and VIF tests for multicollinearity 50
Table 4. 17: Descriptive analysis of Cook's Distance 52
Table 4. 18: Model summary 52
Table 4. 19: ANOVA results of regression analysis 53
Table 4. 20: Regression coefficients 53

LIST OF FIGURES

Figure 2. 1: Conceptual framework 23
Figure 4. 1: What the respondent organizations usually monitor (N=88) 32
Figure 4. 2: Types of monitoring undertaken 32
Figure 4. 3: Purposes of monitoring 34
Figure 4. 4: Types of evaluation conducted 35
Figure 4. 5: Impact Evaluation methods used 37
Figure 4. 6: Respondents' levels of agreement on six statements about their perceptions towards M&E practices 39
Figure 4. 7: Proportion of the program budget being spent on M&E (N=88) 40
Figure 4. 8: The involvement of various stakeholders in M&E 46
Figure 4. 9: Scatter plot of residuals 50
Figure 4. 10: P-P plot of regression standardized residual 51

LIST OF ACRONYMS

ADP: Agricultural Development Project

CCRDA: Consortium of Cristian Relief and Development Association

CATI: Computer Assisted Telephone Interview

CAWI: Computer Assisted Web Interview

DAC: Development Assistance Committee

IFRC: International Federation of Red Cross and Red Crescent Societies

INTRAC: International NGO Training and Research Center

IRC: International Rescue Committee

MDGs: Millennium Development Goals

M&E: Monitoring and Evaluation

NBE: National Bank of Ethiopia

NGO: Non-governmental Organization

ODA: Official Development Assistance

OECD: Organization for Economic Cooperation and Development

PFE: Pastoralist Forum Ethiopia

PHE: Population Health and Environment Ethiopia

RBM: Results Based Management

ToC: Theory of Change

UNDG: United Nations Development Group

UNDP: United Nations Development Programme

USD: United States' Dollar

ABSTRACT

The main objective of the study was to assess the effectiveness of M&E systems in agricultural NGOs in Ethiopia. It also assessed the effectiveness in the use of M&E tools and techniques; perceptions towards M&E practices; factors affecting effectiveness of M&E systems; and effectiveness of M&E systems in supporting learning. The study took a form of descriptive design. The cross-sectional study employed quantitative methods that involved a survey of 88 randomly selected agriculture-oriented NGOs that are affiliated to three consortium organizations. Univariate statistics and linear regression methods were used to analyze the data. The results demonstrated that M&E systems were partly traditional despite the popularity of some of the Results-Based Management tools. M&E practices tend to be donor-driven as reflected by the main purposes they served, high ability to meet donors' accountability concerns, and high involvement of donors. Findings also indicated that improper allocation of budget for M&E, minimal use of information systems in M&E, and low involvement of beneficiaries in M&E processes. The effectiveness of M&E systems in the organizations were positively and largely affected by the use of information systems, stakeholder involvement, and human resource capacities. The findings also suggested that many of the organizations lacked strong orientation towards learning as integral part of to their M&E systems. The study recommended the involvement of M&E personnel in project design and budgeting; capacity development in relation to the use of information systems and RBM tools; and M&E policies that promote stakeholder involvement and learning culture.

***Key words**: M&E practices, M&E systems, non-governmental organizations, learning*

TABLE OF CONTENTS

Declaration i

Certification ii

List of tables iii

List of figures iv

List of Acronyms v

Abstract vi

Chapter One: Introduction 1

1.1. Background 1

1.2. Problem Statement 2

1.3. Research Questions 3

1.4. Objectives of the Study 3

1.5. Significance of the Study 4

1.6. Scope of the Study 4

1.7. Limitations of the Study 5

1.8. Operational Definitions 5

1.9. Organization of the Study 6

Chapter Two: Literature Review 7

2.1. Monitoring and Evaluation: Fundamental Concepts 7

2.1.1. Monitoring 7

2.1.2. Evaluation 8

2.2. The Origin and Evolution of M&E 11

2.3. Theoretical Review of Literatures 12

2.3.1. Program Theory 12

2.3.2. Theory of Change 13

2.4. Empirical Review of Literatures 15
2.4.1. Perceptions Towards M&E 15
2.4.2. Factors Affecting the Effectiveness of M&E systems 16
2.4.3. M&E and Learning 19
2.4.4. M & E in Agricultural Development Projects 19
2.5. Conceptual Framework 22
Chapter Three: Methodology 24
3.1. Research Design 24
3.2. Data Sources 24
3.3. Sampling Design 24
3.3.1. Target Population and Sampling Frame 24
3.3.2. Sample size 25
3.3.3. Sampling Procedure 26
3.4. Principal Data Gathering Tools 26
3.5. Validity 26
3.6. Reliability 27
3.7. Data Collection 27
3.8. Data Presentation and Analysis 28
3.9. Ethical Considerations 28
Chapter Four: Findings and Discussions 29
4.1. Characteristics of the Respondent Organizations 29
4.2. M&E Practices 30
4.2.1. Availability of M&E Plan 30
4.2.2. The Use of RBM 31
4.2.3. Monitoring Practices 31

4.3.3. Evaluation Practices 34
4.3. Effectiveness of M&E Systems 37
4.4. Perceptions Towards M&E Practices 38
4.5. Budget Allocation 40
4.6. Human Resource Capacity 41
4.7. Use of Information Systems 43
4.8. Stakeholders' Involvement 45
4.9. Learning 47
4.10. Regression Analysis of Factors Affecting Effectiveness of M&E Systems 48
4.10.1. Regression Model Specification 48
4.10.2. Diagnostic Testing Assumptions 49
4.10.3. Overall Regression Analysis 52
Chapter Five: Conclusions and Recommendations 54
5.1. Conclusions 54
5.2. Recommendations 55
References 57
Appendices i
Appendix 1: Questionnaire i

CHAPTER ONE: INTRODUCTION

1.1. Background

It is conspicuous that a chunk of resources flow from developed to developing countries in the form of Official Development Assistance (ODA). Estimates from OCED (2018) show that the ODA from member states of the Development Assistance Committee (DAC) amounted more than USD 429 billion in 2017. It has shown an increase of USD 179 billion within a decade from USD 249 billion in 2008. In 2017, accounted to 8.8% of Gross National Income (GNI) of low-income countries (World Bank, 2018). ODA is provided in the form of loan (19%) or aid (81%) as a budget subsidy or a financing project interventions. Financing for project and program interventions takes the largest share of the total ODA (Coppard, et al., 2012).

One way grants to support projects and programs are channeled to the developing countries is through NGOs. The ODA allocated to and through NGOs averaged USD 17.3 billion for the period of 2008 to 2011 (OECD, 2013). This excludes the funds raised from private sources. In 2011, NGOs raised more than USD 32 billion. The total amount of funds managed by NGOs in the DAC member states mounted to USD 41.7 billion in 2017 (OCED, 2018).

With the growing resource flows, the aid effectiveness agenda has become the center of attention in international development. In 2005, more than ninety-six countries endorsed the Paris Declaration on Aid Effectiveness to take far-reaching and monitorable actions in order to reform the ways aid is delivered and managed (OECD, 2005). Aiming to reinforce and accelerate the implementation of the Paris Declaration, the countries endorsed the Accra Agenda for Action in 2008 (OECD, 2008).

Monitoring and Evaluation (M&E) is a practice widely accepted by international development organizations to ensure aid effectiveness (OECD, 2009). DAC peer-reviews identified investing in measuring and communicating aid-financed activities as one of the twelve lessons in aid management (Ibid). Therefore, evidences can be generated on the proper management of development projects and programs and achievement of results so as to communicate to stakeholders, and inform decision making.

M&E has been increasingly practiced by NGOs in the past two decades. The growing attention to the aid effectiveness agenda induced a paradigm shift towards the need for measuring results, and

generating evidences on effectiveness. This resulted in to the humongous attention given to M&E by many organization (INTRAC, 2011).

Ethiopia, the largest aid recipient in Sub-Saharan Africa (Tang & Bundhoo, 2017), has more than 1,900 national and international NGOs operating in its different parts (Dessalegn, et al., 2010). In 2017/18, the foreign earnings of the country through NGOs was more than USD 1.029 billion, which accounted to approximately 14% of the total national earnings (NBE, 2018).

Agricultural development is among the thematic focuses of the projects implemented by Ethiopian NGOs (Clark, 2000; Dessalegn, et al., 2010). It appears that large amount of resource investments are involved in the implementation of these projects. Ensuring the effectiveness in the management of these resources entails building well-functioning M&E systems. Hence, assessment of the effectiveness M&E systems in NGOs enables to identify the strengths and weaknesses of the existing systems to identify areas of improvements for proper management of agricultural development projects.

1.2. Problem Statement

Monitoring and evaluation (M&E) plays a central role as a project and program management function in non-governmental organizations. It supports the evidence mechanisms for project success and failure. Decisions can be informed, through evidence-based reporting, to improve project performances (IFRC, 2011). Experiences and lessons learned can be captured and shared. A well-functioning M&E system ensures accountability to beneficiaries and donors, and provide the opportunity to gather stakeholders' feedback (Emmanuel, 2015).

Despite its importance, M&E is not given the due attention among NGOs. In many projects in the NGO environments, it is under-resourced and under-budgeted (ITAD, 2014; KPMG International, 2014). Sometimes, it is marginally prioritized at project inception as high attention rests on launching the project with the limited resources available (Lahey, 2015). On the other hand, lack of technical capacities in M&E prevented proper attention to M&E during program design which in turn led to inadequate resource allocation (Emmanuel, 2015).

The use of M&E practices in NGOs can be considered as donor-driven (ITAD, 2014; KPMG International, 2014; Emmanuel, 2015). The fact that much of the M&E activities occur in donor supported initiatives suggests that M&E is carried out to respond to the accountability concerns of

donors. Although beneficiary participation is fundamental to ensure sustainability, the existing M&E practices often lack community participation (Morsy, 2011). Hence, the existing practices overlook the downward accountability aspects (ITAD, 2014).

There exists an emasculated learning practice manifested by inability of NGOs to use lessons identified on evaluation to change their practices (Emmanuel, 2015). This is partly due to the soared emphasis on upward accountability which emanates from strong interests to attract and maintain donors (Ibid). Relationships with donors can be potentially harmed by the weaknesses and failures disclosed by evaluation. Moreover, clarity is missing on how lessons learned are incorporated to the design of new projects (ITAD, 2014).

Literatures indicated that there is a lot more to explore in the field of M&E (Karani, et al., 2014). Previous studies suggested further studies on the ways M&E systems can effectively support learning (Millstone, et al., 2010; ITAD, 2014). ITAD (2014) also implied the need for assessing factors underlying the effectiveness of M&E systems in NGOs.

Therefore, this study is keen to assess the effectiveness of M&E systems in NGOs that are implementing agricultural development projects, and affiliated to umbrella organizations in Ethiopia.

1.3. Research Questions

1. How effective are the NGOs, engaged in agricultural development interventions in Ethiopia, in the use of M&E tools and techniques?
2. What are the perceptions of agricultural development related NGOs in Ethiopia towards M&E practices?
3. What are the factors affecting effectiveness of M&E systems of agricultural development related NGOs in Ethiopia?
4. How effective are the M&E systems in supporting learning in NGOs working on agricultural development projects in Ethiopia?

1.4. Objectives of the Study

The overall objective of the study is to assess the effectiveness of monitoring and evaluation systems in consortium-affiliated NGOs implementing agricultural development projects in Ethiopia. Moreover, the study seeks to address the following objectives:

- To assess effectiveness of NGOs, engaged in agricultural development interventions in Ethiopia, in the use of M&E tools and techniques;
- To understand perceptions of agricultural development related NGOs in Ethiopia towards M&E practices;
- To identify factors affecting effectiveness of M&E systems of M&E systems of agricultural development related NGOs in Ethiopia; and
- To assess how M&E systems are effectively supporting learning in NGOs working on agricultural development projects in Ethiopia.

1.5. Significance of the Study

Studying the effectiveness M&E systems of NGOs allows identification of gaps in the use of tools and techniques. It also helps to uncover problems in putting M&E systems into practice. Therefore, this study enhances the understanding of M&E and other development practitioners on the issues to be addressed during design and implementation of M&E systems.

The study shows the use of widely accepted M&E practices, and the factors affecting effectiveness of M&E system of NGOs engaged in agricultural development. Thus, the results provide inputs for the consortium organizations, covered under the study, to plan for building the M&E capacities of their members.

The study builds on previous studies on M&E systems of projects while drawing the lessons of agricultural development interventions of NGOs in Ethiopia. It examines the factors affecting effectiveness of M&E systems in agricultural development projects. It also sheds light on how M&E practices are effectively leading to learning. Furthermore, this study serves as a basis for future studies on the M&E systems of NGOs.

1.6. Scope of the Study

The study covered national and international NGOs operating under the aegis of three consortium organizations: Consortium of Christina Relief and Development Association (CCRDA), Population, Health and Environment (PHE) Ethiopia Consortium, and Pastoralist Forum Ethiopia (PFE). These are umbrella organizations for a total of 352 NGOs. Of which, 118 organizations have been implementing agricultural projects. Therefore, the ambit of the study was demarcated to those organizations that are engaged in agricultural development interventions.

1.7. Limitations of the Study

The applicability of findings of the study to the wider context can be affected by issues pertinent to geographical limitations. The study is limited to agricultural development related NGOs that are members of three consortium organizations. It does not cover likeminded NGOs outside those consortium organizations. The study is also restricted to national and international NGOs. It is devoid of attention to regional NGOs due to practical difficulties, and time constraints.

Methodologically, the study faces limitations impacting the completeness of findings, and heterogeneity of the respondents. The absence of qualitative methods, due to resource constraints, results in heavy reliance on quantitative methods lacking strength in generating in-depth information. The fact that participants of the study are the professionals in the head office does not allow to compare the perceptions of professionals in the head office, and field offices towards M&E practices. Inability to include staffs that do not have M&E roles due to resource limitations may diminish the ability of the study to provide understanding of perceptions of NGOs towards M&E practices.

1.8. Operational Definitions

Monitoring: a routine data collection and analysis on the progresses of projects/ programs towards achievement of the intended results.

Evaluation: a periodic assessment and analysis of relevance, efficiency, effectiveness, impact and sustainability of ongoing or completed projects/ programs.

Practice: a set of tools, techniques, procedures and processes that are regarded as standards in the field of M&E.

Monitoring and Evaluation system: a collection of people, procedures, data and technology that interact to provide timely information for authorized decision-makers.

Perception: is the way M&E practices are regarded and understood by NGOs.

Learning: is the process through which information generated from M&E is reflected upon and intentionally used to continuously improve a project's ability to achieve results.

Effectiveness: is the functionality and the ability of a system to produce the results that were intended.

Non-Governmental Organization: a non-profit and voluntary organization that operate independently of any government, and promotes social, political and economic development.

1.9. Organization of the Study

The study is organized in five chapters. It begins with introduction which includes background, problem statement, research questions and objectives, significance of the study, scope and limitations of the study, and operational definitions. Chapters two provides review of theoretical and empirical literatures relevant to M&E. The third chapter deals with the research design and methodology employed to conduct the study. Results of the study, and their discussions are presented in the fourth chapter. Chapter five presents the conclusions and recommendations drawn based on findings of the study.

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

This chapter presents a review of theoretical and empirical literatures relevant to the study area. The areas of focus include basic concepts of M&E; historical overview of M&E; theoretical basis of M&E; factors affecting M&E; and the role of M&E in agricultural development projects. Finally, the chapter provides a conceptual framework to depict the study variables identified based on the review of literatures.

2.2. Monitoring and Evaluation: Fundamental Concepts

2.2.1. Monitoring

Although a slight difference exists in the scope, definition of monitoring in many organizations is derived from OECD. OECD (2002) defined monitoring as "a continuing function that uses systematic collection of data on specified indicators to provide management and the main stakeholders of an ongoing development intervention with indications of the extent of progress and achievement of objectives and progress in the use of allocated funds."

It is commonly agreed that the main purpose of monitoring is to measure progresses of interventions on an ongoing basis. Monitoring generates information helpful to verify whether an intervention is on track. Thus, corrective actions can be taken based on the information and learning gleaned (IRC, 2005). Monitoring also allows donors to make sure that implementers are complying with their regulations and requirements (Mercy Corps, 2005). In some donor agencies, it involves different stakeholders, and uses formal and informal communication mediums to serve as an accountability tool (Finland MFA, 2008).

Monitoring may occur at project, program or policy levels (Kusek & Rist, 2004). However, the scope of monitoring slightly varies among different organizations. The M&E guidelines of various organizations show that monitoring focuses on tracking progresses from inputs to outputs, and outputs to outcomes (IRC, 2005; Mercy Corps, 2005; Shapiro, 2010; IFRC, 2011). For UNDP, the scope of monitoring is extended to review of progresses of an intervention towards achievement of goals (UNDP, 2009).

Types of monitoring differ by purpose. The M&E guidelines of IRC (2005) and IFRC (2011) discussed the common types of monitoring as shown below.

- ***Results/ effects monitoring***: verifies whether an intervention is on the right track towards its intended results. It also helps to identify whether there may be unintended effects. This is where monitoring overlaps with evaluation.
- ***Process/ activity monitoring***: gathers and analyzes data on the daily use of inputs and their conversion into outputs. It helps to check whether activities are undertaken as per the plan. It provides information on the efficiency of time and resources.
- ***Compliance monitoring***: is carried out to check whether the implementers conform to the regulations and contract requirements of donors, local government laws, and ethical standards.
- ***Context monitoring***: is a follow up of external factors affecting the intervention. The external conditions can be identified as risks and assumptions, or unprecedented. These are related to the physical, political, social and environments in which an intervention operates.
- ***Beneficiary monitoring***: gathers evidences on the perception of direct and indirect beneficiaries towards an intervention. It assesses beneficiaries' participation, their access to goods/ services, their satisfaction or complaints, and how they are benefiting from the intervention. It serves as a means of stakeholder feedback mechanism.
- ***Financial monitoring***: verifies efficiency in the use funds to procure inputs and carry out activities. This is done by checking whether the expenses are within the predefined categories of expenditures.
- ***Organizational/ Institutional monitoring***: is carried out to assess sustainability, institutional development and capacity building in an intervention. It may also involve tracking management, coordination, human resource, communications and policy implementation among implementing partners.

2.2.2. Evaluation

Like monitoring, the most popular definition of evaluation is OECD's. According OECD's (2002) glossary of key terms, evaluation is "the systematic and objective assessment of an on-going or completed project, program or policy, its design, implementation and results. The aim is to determine the relevance and fulfillment of objectives, development efficiency, effectiveness, impact and sustainability. An evaluation should provide information that is credible and useful, enabling the incorporation of lessons learned into the decision making process of both recipients and donors". OECD also stated that evaluation can be done to judge the worth or significance of

an intervention, and, in some instances, it involves setting standards and measure of performance against those standards.

Apart from measuring the achievement of results, evaluation uncovers lessons learned in an intervention (Kusek & Rist, 2004). These lessons can be used by stakeholders to replicate successes, and improve future interventions (Finland MFA, 2008; IFRC, 2011). The findings of evaluation can also serve as a basis for accountability while identifying, justifying and communicating successes and failure in the light of the pre-defined result areas (OECD, 1991; Finland MFA, 2008).

Evaluation questions are organized around five areas to address issues related all components in the result chain. These are known as "DAC criteria for evaluating development assistance". As outlined by OECD (2006), the five criteria of evaluation are:

i. **Relevance**: refers to the extent to which an intervention has the needs and priorities of stakeholders, including beneficiaries, implementing partners and donors.
ii. **Effectiveness**: is a measure of whether the intended results of an intervention are achieved, and how the intervention contributed to these results.
iii. **Efficiency**: is the extent to which the intervention produced the outputs with an economical use of resources.
iv. **Impact**: refers to the positive or negative changes that are directly or indirectly effected by an intervention. This is also concerned with how the external factors affected the intervention. The results can be intended or unintended.
v. **Sustainability**: involves the extent to which benefits and impacts of an intervention continue after its completion.

Evaluation can be classified in different ways. The typologies of evaluation can be identified with respect to the persons involved, the timing of occurrence, and technicalities/ methodologies. However, these categories and types of evaluation are not mutually exclusive, and employed in conjunction (IFRC, 2011).

In terms of the persons involved, evaluation can be classified into four types: internal, external, participatory and joint evaluation. Internal evaluation is conducted by those who have direct role in the intervention. When evaluation is conducted by persons external to the project/ program, it

is called “external or independent” evaluation. Participatory evaluation is the one that involves beneficiaries and key stakeholders to empower them, and gain their buy-in. In joint evaluation, more than one implementing partners collaborate to assess the effects of their joint intervention (IFRC, 2011).

According to the timing, evaluation can be broadly divided into formative and summative. Formative evaluation is conducted anytime during the implementation of an intervention to inform adjustments. Whereas, summative evaluation is conducted to measure effects, and identify learnings of a completed intervention (IFRC, 2011; Shapiro, 2010). Respective of the time it occurs, evaluation can be further divided into:

a) **Ex-ante evaluation**: is carried out before launching or the implementation in order to inform proposal formulation and project design, and/ or provide baseline data (European Commission, 2001; JICA, 2014).
b) **Mid-term evaluation**: is done at the midterm of implementation in order to provide information on the need to revise implementation strategies (UNDP, 2009; IFRC, 2011).
c) **Final / terminal evaluation**: is performed at the end of project period in order measure the effects of an intervention (UNDP, 2009; IFRC, 2011).
d) **Ex-post/ impact evaluation**: is carried out after the completion of a project/ program in order to measure its long-term impacts, and assess sustainability (UNDP, 2009; IFRC, 2011; JICA, 2014). In most cases, it is undertaken two years or more after the termination of project period.

Classification of evaluation types also base the technicalities involved. As delineated by IFRC (2011), four types of evaluation can be identified based on methodology:

a) **Real-time evaluation (RTE)**: are conducted during implementation of an intervention in order to provide immediate feedback for adjustments on an ongoing implementation. RTEs are mostly used in emergency interventions.
b) **Meta-evaluation**: is an audit of evaluation processes by combining and review of the results of previous evaluations. This is an assessment of how well previous evaluations were conducted; compliance of the evaluations to policies; and how well results were utilized for learning and shared.
c) **Thematic evaluation**: is an evaluation focused on an assessment of a particular thematic issue. The themes may include gender, environment, etc.

d) **Cluster/ sector evaluation**: is an evaluation of interrelated interventions across different locations or organizations.

2.3. The Origin and Evolution of M&E

Two underlying views exist in understanding the origin and evolution of M&E, the traditionalist and modernist perspectives. The traditionalist view, which can be considered as a Pan-Africanist view, argues M&E is a long-existed practice which is not new for Africa. On the other hand, the modernist view considered M&E as a recent discipline originated in the Western world.

According to Masuku and Ijeoma (2015), M&E was a traditional governance approach which existed during Stone Age. By then, reporting and decision making was based on plans agreed on traditional gatherings. Traditional leaders used to report to their community members they lead. This indicates the modernist view ignores the traditional governance systems.

Masuku and Ijeoma (2015) claimed that Ancient Egyptians were the first to introduce M&E, as a formal management practice, to the world. Ancient Egyptians regularly monitored crop and livestock production 5,000 years ago. Mentioning this, the authors strongly disagree with the modernist argument on the origin of M&E in the Western world.

However, the modernist perspective argued that M&E is short-lived as a knowledge management discipline, though recording official statistics evolved through centuries. M&E began in the 1970s in the public sector organizations. Initially, M&E was a field of applied research with a focus on "E", i.e. evaluation. Those who viewed M&E as a management tool transformed it into a means of budget and schedule performance management. In those days, M&E was project-based practice with the purpose of tracking inputs and outputs to inform decisions. Thus, M&E units existed in larger projects to support such functions (Edmunds & Marchant, 2008).

In the 1980s, the focus of governments was shifted from project to sectoral level. This involves adoption of a "Sector-wide approach (SWAP)" to manage national development programs (Edmunds & Marchant, 2008). The use of new public sector management strategies drove interests towards enhancing effectiveness and efficiencies of public service delivery (Hailey & James, 2003). Performance measurement and effectiveness criteria were widely used with a shift of focus from inputs and outputs to results (Ibid). This in turn led to the birth of result-based management,

which entailed gathering data from beneficiaries. As a result, M&E functions were established in sectoral and ministerial offices (Edmunds & Marchant, 2008).

In the 1990s, the rising income inequalities induced the growing attention of governments and civil societies towards poverty. These concerns heightened the need for poverty monitoring practices which required measuring and tracking changes in living standards. Hence, governments established by national poverty monitoring units to lead the poverty monitoring activities (Edmunds & Marchant, 2008).

In the 2000s, the nascent of poverty reduction strategies, such as MDGs, entailed the use both project-based and sector-based M&E practices (Edmunds & Marchant, 2008). In this connection, paradigm shift occurred in the way effectiveness was viewed (Hailey & James, 2003). Quality-based measures, and holistic approach for performance measurement became widespread (Ibid). National M&E programs were launched to support the monitoring and evaluation of poverty reduction strategies. NGOs started to operate in an environment surrounded by the need for measuring performance and ensuring accountability. Therefore, M&E was transformed from result management and decision-making tool to an accountability tool with its use by the civil society (Edmunds & Marchant, 2008).

2.4. Theoretical Review of Literatures

2.4.1. Program Theory

Program theory explains how and why an intervention results in the intended outcomes. It demonstrates the hypothesized link between the intervention packages and the expected outcomes. It provides description of the actions, the issues to be addressed by the issues, and why the action addresses those needs/ issues. It also depicts the different stages at which the change occurs. Program theories usually take a form of "if- then" statements (Albert, et al., 2004; Davidson, 2007; Wilder Research, 2009; Edmonds, 2012).

Literatures highlighted that program theory involves "a common understanding [developed between the evaluator and stakeholders] of how a program is presumed to solve social problem(s)." ((Donaldson, 2003) cited in (Davidson, 2007)). Intervention stakeholders such as implementer's donors and beneficiaries have their own perspective and expectations regarding how the intervention should be undertaken (Vaessen, 2016). Hence, stakeholders' involvement is a

profound means of generating insights that can lead towards the intended change, "whether that is program improvement, program replacement, or something else". (Davidson, 2007).

In addition to intervention stakeholders, Vaessen (2016) identified academic theory and empirical data as major sources of program theory. Substantive academic theories and empirical data also provide theoretical ground for specification of program theory. However, the extent to which the program theory relies on each source depends on its purpose and use in design and evaluation.

Vaessen (2016) conceptualized three levels of program theory specification:

- **Level 1: Simple successionist causation**- This level of specification involves a series of causal steps showing how a process or component leads to another. This theory specification is widely used in international development interventions
- **Level 2: Successionist causation with warrants**- This is concerned with justifying why process or component leads to another. The warrants are the possible reasons that an intervention leads to the intended results.
- **Level 3: Causation with warrants and causal assumptions**- This is the most detailed level of theory specification that provides information on both the warrants and the circumstances in which it is more or less likely for the intended results as a result of the intervention. The circumstances are human factors intervening in the causal link.

Program theory is often confused with logic model. The two are highly interrelated, but differ in level of details. Logic model uses short phrases and pictorial form (flow chart) to encapsulate the details provided by program theory. Logic model uses arrows to depict how each component of an intervention leads to another; whereas, program theory provides detailed justifications for the causations. To put simply, logic model is a diagrammatic illustration of the program theory (Wilder Research, 2009).

2.4.2. Theory of Change

Theory of Change (ToC) has its derivation from the program theory (Stein & Valters, 2012). It is evolved from Kirkpatrick's Four Levels of Learning Evaluation Model in the 1950s; Daniel Stufflebeam's CIPP (Context, Input, Processes and Products); and logic models, such as Logical Framework Approach (LFA) in the 1970s. However, the term "theory of change" was popularized in the 1990s after the work of Carol Weiss (The Center for Theory of Change, 2013).

In its early conceptualization, ToC has been referred in many ways, such as a roadmap, a blueprint, an engine of change, a theory of action and more. In 1995, Carol Weiss defined ToC as "a theory of how and why an initiative works." ((Weiss, 1995) cited in (Stein & Valters, 2012)). Based on this definition, ToC can be understood as a means to describe a set of assumptions associated with the steps leading towards the long-term goal, and the logical connections between these steps. However, definitions of ToC lack consensus as some defined these assumptions as components of ToCs, while others regard ToCs themselves as assumptions and beliefs about change (Ibid).

ToC is emphasized on bridging what a change initiative does, and how these lead to the desired goal (The Center for Theory of Change, 2013). It involves "an ongoing process of reflection to allow iterative learning" while exploring why and how change happens (Child, et al., 2015). Therefore, the outputs of ToC are outcome map and list of assumptions about change (Msila & Setlhako, 2013).

An outcome map is "a visual diagram that spells out relationships between initiative strategies and intended results" (Msila & Setlhako, 2013). It provides a framework for identifying what type of activity will lead to the intended outcomes (The Center for Theory of Change, 2013). These casual relationships are underpinned by assumptions, "things taken for granted, accepted as certain to happen" (UNDG, 2014).

ToC plays vital role in development interventions. It enables planners to analyze the root causes of complex development challenges, and their dependencies while prioritizing what is to be addressed. Its iterative nature allows learning within and between program cycles. The need for stakeholder involvement builds consensus, and strengthens partnerships among stakeholders. Therefore, it serves as a common language for communications (UNDG, 2014).

UNDG (2014) underlines on three key principles in the development of ToC. First, it should be based on stakeholders' consultation. Second, it requires a strong evidence base. Third, it has to support learning from design to closure.

Though various literatures identified various processes to develop ToC, these can be summarized in four steps. The first step is identifying the desired long-term goal of the intervention. The second step is identifying all the outcomes that must be in fulfilled for the achievement of the goal. The third step involves making assumptions associated with the ladder of change. In the fourth step

indicates the role of each stakeholder to achieve each result (Msila & Setlhako, 2013; UNDG, 2014; Child, et al., 2015).

2.5. Empirical Review of Literatures

2.5.1. Perceptions Towards M&E

"M&E activities have traditionally been used primarily for auditing and accounting purposes." (Millstone, et al., 2010). In the view of this, the attitudes held by management teams and project/ program staffs towards M&E practices determine the effectiveness of M&E systems.

Many organizations lack shared understanding of M&E among staffs. The findings of Mebrahtu's (2002) study in eight UK-based international NGOs in Ethiopia indicated lack of shared meaning of M&E among head office and field staffs. The head office staffs were found to be emphaiszed on the use of M&E for organizational learning; whereas, field staffs were focused on its use for the accountability to donors.

In some organizations, M&E is not seen as part of the wider organizational strategy. In some others, program staffs have not positive attitude towards M&E with the perception of it as policing. However, in many organizations, M&E is an extra work left to the so called "M&E Officers" without support from other staff or management (Emmanuel, 2015).The work of Düvel (2002) survey, cited in Düvel (2007), shows results of a survey on the importance rank order of seven factors, including accountability, towards improvement of agricultural extension programs in six provinces of South Africa. Among all factors, accountability was not equally important across the provinces. As per the explanation of Düvel (2007), this is due to "the fact that frontline extension personnel perceive evaluation predominantly as a control measure and with it the associated fears and anxieties of not achieving what is expected."

Evidences show that the widespread acceptance of M&E processes in large organizations. The survey conducted by Coe & Majot (2013) on M&E practices of advocay projects in nine international NGOs, with annual budgets ranging from USD 14- 590 million, found that advovcay staffs, M&E staffs, and senior managers agreed on systematizing and integrating M&E into project management system to improve adovocay effectiveness.

However, emperical literatures that examined how perceptions of organizations towards M&E contributed to the use of M&E practices are scare.

2.5.2. Factors Affecting the Effectiveness of M&E systems

2.5.2.1. Use of Results-Based Management (RBM)

RBM is a project/ program management approach based on identification of what to measure, and how to measure. RBM employs clear logical framework to manage interventions with an emphasis on the intended results (IFRC, 2011). Stakeholders ensure that activities and outputs of the intervention are contributing to outcomes and goal. (UNDG, 2010). Doing so, RBM supports improved performance, and accountability.

M&E lies at the center of RBM. Results-based M&E systems are designed to address "so what questions about activities and outputs. It focuses on whether goals are being achieved, and the ways achievements can be proven (Kusek & Rist, 2004). This implies the understanding of 'results' in RBM extends beyond activity management (systems, scorecards, metrics, reporting). Results should be dynamic and transformative to inform decision-making and lead to continuous improvement and change (UNDG, 2010).

Empirical evidences show that results-based M&E systems can produce better results compared to the traditional implementation-focused practices. One of these is case study of Arif, et al. (2015) on the use of RBM for monitoring public sector education projects in Pakistan. The explatory research that employed qualitative methods shows tradional monitoring practices lack standardization based on baseline, use obsolete technique of data analysis, and do not indicate whether the project is heading towards the attainment of its objectives. By using content analysis of MDGs, Vision 2030, the years strategic plan of the conutry and the case project's plan, the study identified relationship between the project and strategic targets, mapped project data on RBM framework, and identified indicators for measuring outcomes and impact. Supported by a comparative analysis, the study concluded that results-based monitoring is more effective than the traditional practices.

Despite the common understanding on the purposes, literatures slightly vary on the procedures to develop results-based M&E system. Various literatures suggest four to seven steps to develop M&E systems. The steps adapted from (Kusek & Rist, 2004) and (ILO, 2011) are:

i. **Formulating outcomes and goal**: involves succinctly spelling out the results, and developing a framework depicting how the results will be achieved.

ii. **Defining indicators**: is related to specification of scales and dimensions to measure the performance of each component in the result area.
iii. **Gathering baseline and setting targets**: involves setting benchmarks and expected levels of the results to be achieved with in specific timeframes.
iv. **Monitoring results**: is regularly collecting data to assess whether the targets are being met.
v. **Analyzing, reviewing and reporting results**: involves judging performances by comparing actual results against the targets.
vi. **Integrating evaluation**: conducting evaluation periodically to complement the information gathered through monitoring.
vii. **Using performance information**: using the information generated through the M&E system for decision making, learning and accountability.

2.5.2.2. Budget Allocation

Financing is one of the major determinants for the effectiveness of M&E systems. Budget stress may affect the quality of information gathered as the information gathered owes to the issue of credibility, and essential information can be missed. This is highly detrimental to the utility of the data (Kithinji, et al., 2017).

Previous studies investigated budget allocation for M&E, and its relationship with the effectiveness of M&E systems. A survey conducted by KPMG International (2014), on the M&E practices of 35 world's leading development organizations, identified that 53% of the organizations allocate less than 2% of the total program budget for M&E. Moreover, the study of Karani, et al., (2014), on the effective use of M&E systems in HIV/AIDS projects of 24 organizations in Kenya, detected positive relationship ($r= 0.229$, $p<0.05$) between adequacy of finance and effectiveness of M&E systems.

2.5.2.3. Human Resource Capacity

An effective M&E system requires skilled and competent human resource. An M&E plan identifies individuals responsible for gathering data for each indicator. The plan also needs to show people responsible for data management and reporting (IFRC, 2011). Organizations acquire knowledge and skills required to run these processes in three ways: by hiring trained and experienced people; by capacitating staffs through on-job training or external courses; and by hiring external consultants (Kithinji, et al., 2017).

Empirical results of proved that human resource capacity affects M&E system, and project performances. The findings of Kithinji, et al. (2017) comfirmed positive and strong relationship of hiring qualified personnel ($r= 0.724$, $p< 0.05$) with utilization of results generated through M&E. The study also detected positively moderate relationship between allocationg resources for M&E training ($r= 0.490$, $p< 0.05$), and M&E result utilization. On the other hand, the regression analysis on the study of Murei, et al. (2017) revealed M&E human resource capacity explains 59.9% of the variance in the performances of holticulture projects.

2.5.2.4. Use of Information Systems

One of the salient features of an effective M&E system is its ability to provide timely information to support operational as well as strategic management requirements (Lai, et al., 2012). This can be realized when M&E systems are supported by effective management information systems. Information systems supports collection, storage, transformation and dissemination of information by integrating people, hardware, software, networks and data resources in an organization ((Kyalo, Mulwa, & Nyonje, 2012) cited in (Micah & Luketero, 2017)).

The use of ICT-enabled technologies for M&E in the development sector is still at infancy. The survey of KPMG International (2014) indicated that the majority of respondent organizations used ICT-enabled M&E tools such as data visualization (91%), GPS (82%), mobile-based tools (69%), open source database (57%), and web-based survey tools (54%) “rarely” or “never”. The survey also identified access to expertise, cost of data management and analysis, ease of data accessibility and standardization, and the use of technology by beneficiaries as roadblocks for using the technologies for M&E. The findings of survey conducted by Micah & Luketero (2017) on the M&E systems and performance of NGO-based maternal health projects in Kenya also identified minimal use of electronic data collection tools (such as Computer Assisted Personal Interview (CAPI) tools), advanced data analysis software, and electronic databases.

Previous results suggest that performance projects heavily rely on the use of information systems. The regression analysis on the study of Micah & Luketero (2017) revealed that a unit of increase in the adoption of information systems would lead to 0.282 increase on performance of in maternal health projects. However, the way information systems affect the effectiveness of M&E systems is not properly investigated.

2.5.3. M&E and Learning

In the context of M&E, organizational learning occurs in two ways: through reflexivity and exchange. “Reflexivity” or “introspection” refers to “conscious reflection based on the one’s own experience” (Morris & Lawrence, 2010). The “exchange” or “interactive” side involves sharing of lessons and experiences among various stakeholders. Participatory M&E optimizes both reflexive and interactive learning (Ibid).

The most important essence of M&E systems lies in their ability to trigger learning and adaptation (Lai, et al., 2012). “M&E can only be useful if it answers the question why has there been success or failure?” ((Woodhill, 2007) cited in (Muller–Praefcke, et al., 2010)). The value of uncovering the underlying knowledge and learning is embodied with the recently growing demand for accountability and impact. Hence, “there is now a call for learning-oriented M&E paradigm.” (Muller–Praefcke, et al., 2010).

The development of organizational learning culture is essential to embed learning in M&E systems. Organizations with learning culture promote open and honest M&E systems, even for reporting failures. In such organizations, M&E systems emphasize on what did not work, and involve stakeholders in all processes. The flow of information is not unidirectional. Rather, feedback mechanisms are institutionalized to ensure that people at all levels of the organization can regularly contribute to, and use the new learnings (Simister, 2008).

According to the previous studies, the use of M&E for learning varies by the type of organizations. The study of ITAD (2014) on the M&E systems of 77 UK-based NGOs identified that implementing NGOs tend to use information from M&E systems to assist day-to-day management of projects, and support accountability. The comissioning and intermediate NGOs were found to use such information for learning. Likewise, KPMG International’s (2014) survey, which involved only comissioning and intermediate NGOs, found that learning was the major purpose of evaluation for 85%. However, empirical evidences have deficiencies on how M&E is effectively supporting organizational learning.

2.5.4. M & E in Agricultural Development Projects

Agricultural Development Projects (ADPs) are emphasized on improving crops and livestock productivity, and rural livelihood. Many of ADPs are concerned with agricultural extension services that extend new knowledge agricultural practices and innovations. Projects that are

engaged in agricultural research and development, and expansion and distribution of agricultural innovations can be categorized under ADPs. Projects that promote sustainable natural resource management can also constitute ADPs. In addition, there are ADPs that support development of agricultural infrastructures, and agribusiness and rural financial inclusion.

M&E of ADPs often gather evidences on progresses towards the result areas which indicate the sequence of steps by which the project should unfold. Development of those plans bases "a set of assumptions that consider that the underlying theory of change is correct; and those assumptions are typically neither tested nor questioned by the project team or by their sponsors" (Millstone, et al., 2010). Mostly, the M&E systems of ADPs utilize the combinations of approaches including logical framework (log-frame) approach; results-based framework (simplified log-frame); formal surveys; rapid appraisal methods; participatory methods; impact evaluation; cost-benefit and cost effectiveness analysis. These approaches are by no means mutually exclusive (Muller–Praefcke, et al., 2010).

Muller–Praefcke, et al. (2010) reviewed the implementation completion reports of 74 ADPs in South and East Asia to assess the design and implementation of M&E systems in ADPs. The projects were completed between 1994 and 2009. The weaknesses in the design of M&E systems that were identified by the findings include too much emphasis on physical progress rather than outcomes; inadequacy and irrelevance of performance indicators to result chain; poor use of tools as results framework and log-frame; lack of stakeholder orientation and involvement in the M&E system. On the side of system implementation, the study pinpointed weaknesses as delays or inability to operationalize the planned M&E systems and procedures; high attention on physical achievement to the neglect of outcomes; conducting monitoring to meet donors' requirement rather than as an internal management tool; and lack of effectiveness in the use of the information produced by the M&E system for project management.

The work of Hailemichael (2013) that analyzed and reviewed impact evaluation reports of 21 agricultural extension programs in 10 Sub-Saharan African countries found results conflicting with extension performance reports. The article challenged the positive impact reported by 71% of the evaluation studies as opposed to the crop productivity (measured by yield per hectare) that remained stagnant over decades as shown in official statistics. The findings also revealed thematic, methodological and capacity related factors affected the quality of evaluation results. These

include difficulties of establishing counterfactuals due to the nature of extension programs; specification of inappropriate impact indicators; use of inappropriate impact evaluation design; use of sampling design lacking statistical power; use of data analysis methods lacking statistical rigor; unavailability and inadequacy of baseline data; having M&E systems poorly organized to collect and store data; lack of staff capacity to conduct rigorous impact evaluation; and allocation of inadequate budget.

Muller–Praefcke, et al. (2010) and Suvedi & Stoep (2016) proposed mechanisms to address aforementioned and other issues in order to enhance M&E systems of ADPs. These are collated and summariezed as shown hereinafter:

- **Integrating M&E with the project management system**: An important aspect of RBM is to provide up-to-date information to the project management team, and other stakeholders on whether and why a project is succeeding or failing. While adopting result-based M&E frameworks, proper care shall be taken to ensure that M&E processes and results constitute the integral part of the overall project management process.
- **Clear definition of M&E criteria**: What to monitor and evaluate shall be determined based on the criteria: relevance, cost-effectiveness, efficiency, impact and sustainability of the system. The selection of performance indicators shall be relevant to project objectives; simple and unambiguous; realizable given logistical, time, technical, or other constraints; conceptually well grounded; and can be updated at regular intervals.
- **Increased stakeholder involvement**: A participatory M&E system ensures accountability and transparency. It facilitates sharing of responsibilities among all stakeholders. This provides common resources for gathering information, communications and mutual learning. This in turn leads to ownership of the system and empowerment of stakeholders.
- **Linking project design, annual work plan, budget and M&E**: Log-frame matrix aids the design and redesign of projects to go hand-in-hand with the process of determining M&E requirements. Development of log-frame at the beginning of a project helps to connect the processes of annual planning and budgeting with data gathering and reporting requirements. However, it is important to use log-frames flexibly with updates and revisions.
- **Improving data collection and Analysis**: Using a mix of quantitative and qualitative approaches provides complete information to address M&E questions. In the use of these methods, ensuring validity and reliability of data collection instruments enables to measure

results objectively. Careful selection, training and follow up of data collectors is helpful to obtain high quality data. Powerful sample size and probability sampling methods allow to draw a representative sample with high ability to detect the effect of the intervention. Proper use of experimental and quasi-experimental methods, and econometric models (such as propensity score matching and difference-in-difference) can help to generate strong evidences on the impact of the intervention.

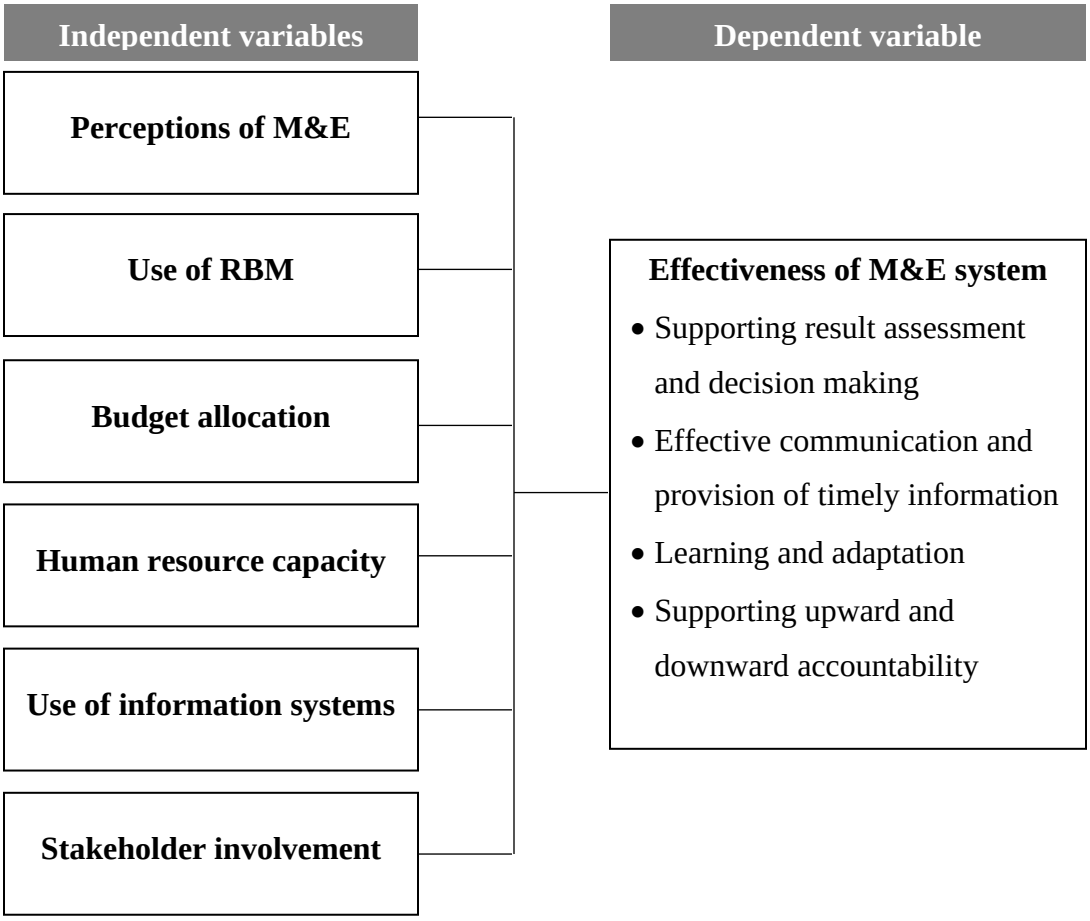
- **Proactive communication and dissemination**: Communication of M&E findings to the stakeholders, and gathering feedback require clear institutional linkage of the M&E and other units of the project, and unequivocal mandate of M&E personnel. The use of ICTs provide cost effective and transparent way of making M&E findings accessible. Besides, it is important to include communications and dissemination strategy in the M&E system.

2.6. Conceptual Framework

In order to describe the phenomenon under study, a conceptual framework was developed based on the theoretical and empirical literatures reviewed. These were related to the research questions. The key variables of the study were identified and their relationships were diagrammatically illustrated in the figure below.

The study was keen to assess the effectiveness, and the factors affecting effectiveness of M&E systems in NGOs implementing agricultural development projects in Ethiopia. The independent variables of the study were perceptions towards M&E; use of RBM; budget allocation; human resource capacity; use of information systems; and stakeholder involvement. The dependent variable was the effectiveness of M&E systems.

Figure 2. 1: Conceptual framework



CHAPTER THREE: METHODOLOGY

3.1. Introduction

This chapter elucidates the processes and methods involved the study. It focuses on the research design, target population, sampling strategy, data collection, and data analysis techniques employed in the study.

3.2. Research Design

The study adopted descriptive research design. Descriptive research design involves the use of scientific approaches to describe the current status of a situations, phenomenon, service or program (Kumar, 2011). This is a cross-sectional study that employed quantitative techniques to assess the existing M&E practices in NGOs implementing agricultural development projects in Ethiopia. The study attempted to describe and draw inference on how effective the existing M&E practices are, and various factors affecting effectiveness of M&E systems in the NGOs. The study employed approaches in descriptive and inferential statistics to investigate the relationships between the variables, and the extent to which the independent variables explained the effectiveness of M&E systems of the organizations.

3.3. Data Sources

The study used both primary and secondary sources to gather data on the existing project M&E practices of agricultural development related NGOs in Ethiopia. Data was elicited from primary sources through structured questionnaire. The questionnaires were completed by M&E experts or project/ program officers/ managers who have M&E roles in the organizations. The study also gathered data from secondary sources such as books, journal articles, periodicals, website articles, guidelines, discussion papers, and technical briefs.

3.4. Sampling Design

3.4.1. Target Population and Sampling Frame

Target population is a domain to which samples might be drawn, and to which findings of the study are meant to be generalized (McLeod, 2014). In the context of the study, the target population encompasses 352 NGOs that are members in one or more of the three consortium organizations: CCRDA, PHE Ethiopia, and PFE. Of which, 118 NGOs were implementing agricultural and rural development projects in different regions of Ethiopia.

Sampling frame is the list identifying each element/ unit in the study population (Kumar, 2011). Based on this, the sampling frame for the study was the list of 118 NGOs with active agricultural and rural development projects. Each NGO was considered as a sampling unit.

Table 3. 1: Size of the study target population

Name of the consortium	Total number of members	Number of members with ADPs
CCRDA	336	112
PHE Ethiopia	66	34
PFE	25	25
Total	**352***	**118***

* The total figure shows the sum that cleaned membership in more than one consortium.

3.4.2. Sample size

Calculation of the sample size assumed 95% confidence level and 5% margin of error. It also assumed a population proportion of 0.5 in order to obtain the maximum sample size. The formula developed by Krejcie & Morgan (1970) was employed to calculate sample size based on the above shown (see Table 3.1) figures:

$n = \frac{x^2 \mathrm{Np}(1-\mathrm{p})}{d^2(\mathrm{N}-1)+x^2\mathrm{p}(1-\mathrm{p})}$ Where,

- n is the sample size
- x^2 is the table value of Chi Square distribution for 1 degree of freedom at the desired confidence level
- N is the number
- p is proportion of the population
- d is the degree of accuracy (margin of error)

Accordingly, $n = \frac{3.84\times118\times0.5\times(1-0.5)}{0.05^2(118-1)+3.84\times0.5\times(1-0.5)} = \underline{\underline{90}}$

Literatures suggested accounting non-response rates during sample size determination in order to reduce non-response bias. (Bartlett, et al., 2001). The study anticipated 10% non-response rate. Adjustment of the sample size based on the non-response rate can be made by using the formula:

$n_2 = \frac{n}{(1-\mathrm{r})}$ Where,

- n_2 is the effective sample size

- r is the non-response rate

$n_2 = \frac{90}{(1-0.1)} = \underline{\underline{100}}$

Therefore, the effective sample size is 100.

3.4.3. Sampling Procedure

Random sampling gives each unit of the population equal and independent chance of selection in the sample (Kumar, 2011). Hence, sample statistics are unbiased estimates of population parameters, without any weighting (Bhattacherjee, 2012).

The study employed Simple Random Sampling (SRS) procedures to select respondents from the sampling frame. First, the names and contact details of the 128 NGOs were listed alphabetically in a Microsoft Excel 2016 sheet. Then, each row was assigned a sequential number staring from 1 to 118. Finally, 100 respondents were selected by using "Random sampling" and "LOOKUP" functions in Microsoft Excel 2016.

3.5. Principal Data Gathering Tools

Questionnaire was the principal tool for gathering the data required for the study. It consists of close-ended questions most of which are measured at ordinal level. It also consists of few questions that can be measured at nominal and interval-ratio level.

The questionnaire was organized into nine sections. The first seeks basic information about the organizations. The second section solicits information on the existing M&E practices. The third section asks few questions on respondents' perceptions towards M&E practices. The fifth section gathers information on budget allocation for M&E. The sixth section assesses human resource capacities on M&E. The seventh and eighth sections examine stakeholders' involvement in M&E, and the use of M&E for organizational learning, respectively. The ninth section assesses the effectiveness of M&E systems.

3.6. Validity

In order to ensure the validity of the research instrument, the researcher sought opinion of experts, including the researcher's supervisor, and two M&E experts working in agricultural development projects. The researcher did a pilot test with three agricultural development related NGOs in order to assess the clarity and understandability of the questions. The organizations which were part of the pilot

test were not part of the main study. This facilitated the necessary revision and modification of the research instrument thereby enhancing validity.

3.7. Reliability

One way of estimating reliability is internal consistency reliability, which is a measure of consistency between different items of the same construct. Internal consistency reliability can be measured by using Cronbach's alpha. This test can be used to estimate reliability in terms of average inter-item correlation or average item-to-total correlation (Bhattacherjee, 2012).

The study applied Cronbach's alpha to measure reliability in terms of average item-to-total correlation for the use of the use of RBM; perceptions towards M&E; M&E budget allocation; use of information systems; stakeholder involvement; learning; and effectiveness of M&E systems. The alpha values of the items range from 0.830 to 0.874.

Alpha values within the range of 0.70 and 0.95 are considered as acceptable (Tavakol & Dennick, 2011). Based on this, the values for all items were found to be acceptable.

Table 3. 2: Reliability test

Category	**Cronbach's Alpha based on standardized items**	**Number of items**
Use of RBM	0.804	4
Perception towards M&E	0.873	6
M&E budget allocation	0.855	5
Use of information systems	0.860	10
Stakeholder involvement	0.838	10
Learning	0.866	3
Effectiveness of M&E systems	0.874	7
Overall reliability statistics	**0.827**	**46**

3.8. Data Collection

Data was gathered digitally through Computer Assisted Web Interview (CAWI), and Computer Assisted Telephone Interview (CATI) platforms. The CAWI and CATI were supported by Survey

Solutions, a web-based application that enables to administer questionnaires online on computers or smartphones or tablets.

Prior to releasing the survey, the list of the selected organizations was communicated to the consortium organizations respective of membership. The consortium organizations recommended their member NGOs to participate in the survey. Email reminders were sent three times after releasing the questionnaires through CAWI platform. Those organizations that did not respond were contacted via phone to schedule a CATI. Therefore, the remaining respondent organizations were interviewed through CATI as per the appointments scheduled.

3.9. Data Presentation and Analysis

The survey data was analyzed by using Statistical Package for Social Sciences (SPSS). The study employed descriptive and inferential statistical analysis techniques. The descriptive analysis generated frequencies, percentages, mean and standard deviation. These results were presented by using univariate charts and tables. The descriptive analysis was applied to assess the existing M&E practices, and how M&E systems are effectively supporting organizational learning. In order to aggregate the variables, composite means were developed for each category of variables. A correlation analysis was conducted to identify the strength of the relationship between the study variables. The researcher carried out a linear regression analysis so as to determine the relative and cumulative effects of perceptions towards M&E, budget allocation, human resource capacity, use of information systems, and stakeholder involvement on the effectiveness of M&E systems.

3.10. Ethical Considerations

According to Bhattacherjee (2012), some of the ethical principles in scientific research are voluntary participation and harmlessness, confidentiality and disclosure. Research ethics was put into consideration when developing and administering data collection tools and techniques, to avoid any form of harm, suffering or violation. This was done through obtaining the consent of respondents before participation in the study, informing the respondents about the purpose of the study, and ensuring confidentiality of data.

CHAPTER FOUR: FINDINGS AND DISCUSSIONS

4.1. Characteristics of the Respondent Organizations

Table 4.1 presents the characteristics of the respondent organizations. The majority (68.2%) of the organizations were local NGOs while the remaining 31.8% were international NGOs. Most of the respondent organizations operate as an implementing NGO. Intermediate and commissioning NGOs, those contracting others to deliver interventions on their behalf, account to 11.8% and 6.8%, respectively. This indicates many of the agricultural NGOs in Ethiopia are locally established, and engaged in direct implementing agricultural projects.

Table 4. 1: Characteristics of the respondent organizations

Variable	Level	Frequency	Percent
Type of NGO	Local	60	68.2
	International	28	31.8
	Total	**88**	**100.0**
Mode of operation	As an implementing NGO	72	81.8
	As a commissioning NGO	6	6.8
	As an intermediate NGO	10	11.4
	Total	**88**	**100.0**
Years of operation	Less than 5 years	6	6.8
	6-10 years	17	19.3
	11-15 years	25	28.4
	Above 16 years	40	45.5
	Total	**88**	**100.0**
Annual budget (USD)	Below 1,000,000	48	54.5
	1,000,001- 3,000,000	13	14.8
	3,000,001- 5,000,000	14	15.9
	Above 5,000,000	13	14.8
	Total	**88**	**100.0**
Number of employees	Below 50	71	80.7
	51- 100	9	10.2
	101- 150	4	4.5
	Above 150	4	4.5
	Total	**88**	**100.0**

Source: Survey data (2019)

The respondent organizations have shown long-existence, but with low financial capacities. Little lower than half (45.5%) of the respondents operated for over 16 years, followed by 11-15 years

(28.4%), 6-10 years (19.3%), and less than 5 years (6.8%). The majority (54.5%) operated annual budget of less than USD 1,000,000. Those operating with USD 1,000,001- 3,000,000 accounted for 14.8%. The remaining 15.9%, and 14.8% had annual incomes 2,000,001- 4,000,000, and above 5,000,000, respectively. The large majority (80.7%) of the respondent organizations had less than 50 employees.

4.2. M&E Practices

4.2.1. Availability of M&E Plan

Large proportion (65.9%) of the organizations involved in the study have organizational guidelines for M&E. Slightly higher than one-third did not have the guideline. M&E plans were prepared for all projects in 60.2% of the respondent organizations. For the 29.5%, M&E plans existed only for some projects. This agrees with Karani, et al. (2014) who found the widespread use of plans to guide M&E processes. This finding also suggests many of the NGOs that are engaged in agricultural development had M&E systems in place. In most cases, the practicalities of these plans were found to be difficult (27.3%) or somewhat difficult (23.9%). The respondents who found the M&E plans easy and very easy accounted to 27.3% and 10.2%, respectively. These findings were in agreement with Micah & Luketero (2017) who indicated the importance of staff capacity on th top of availability and accessibility of M&E plans.

Table 4. 2: Availability of M&E plans and their practicability

Variable	Level	Frequency	Percent
Availability of organizational M&E manual	Yes	58	65.9
	No	30	34.1
	Total	**88**	**100.0**
Availability of M&E plans for projects	Yes	53	60.2
	Yes, but only for some projects	26	29.5
	No	9	10.2
	Total	**88**	**100.0**
Practicability of the M&E plans	Very difficult	10	11.4
	Difficult	24	27.3
	Somewhat difficult	21	23.9
	Easy	24	27.3
	Very easy	9	10.2
	Total	**88**	**100.0**

Source: Survey data (2019)

4.2.2. The Use of RBM

Table 4.3 shows the importance of various RBM tools for the respondent organizations. Logic models or logical frameworks were "important" or "very important" for more than half (55.7%) of the respondents. This suggests logical framework as widely used RBM tool. This is consistent with the finding of KPMG International (2014) which showed logical framework was the most frequently used RBM tool. This is possibly associated with the wide acceptance of logical framework approach among the donor community, and its use as a major requirement for grantees. Result frameworks had low importance as the large majority (60.2%) rated it as "not important" or "slightly important". Smaller proportion (20.5%) of the respondents identified result frameworks as "moderately important". Over two-thirds (67%) of the respondents found outcome mapping as "not important" or "slightly important". The little importance of result frameworks and outcome mapping can be explained by their little use as a requirement of donors. Based on this, one can argue that the use of RBM tools among implementers is dictated by their use as a requirement of donors.

Table 4. 3: The levels of importance of RBM tools

Variable	NI		SI		MI		I		VI	
	F	%	F	%	F	%	F	%	F	%
The importance of result frameworks (N=88)	28	31.8	25	28.4	18	20.5	9	10.2	8	9.09
The importance of logic model/ logical frameworks (N=88)	9	10.2	3	3.4	27	30.7	32	36.4	17	19.3
The importance of outcome mapping (N=88)	31	35.2	28	31.8	12	13.6	10	11.4	7	7.95

Note: NI= Not important; SI= Slightly important; MI= Moderately important; I=Important; and VI= Very Important

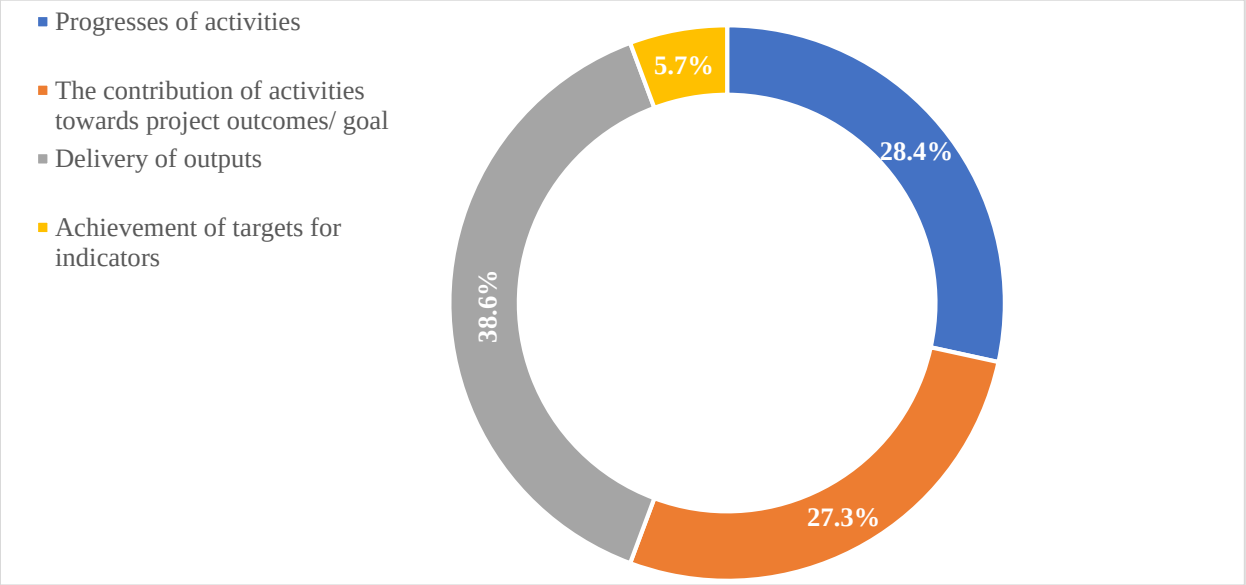
Source: Survey data (2019)

4.2.3. Monitoring Practices

Figure 4.1 demonstrates the project components that are focused by the respondent organizations in monitoring. Delivery of outputs (38.6%) was the major area of focus, followed by progresses of activities (28.4%), contribution of activities towards outcomes/ goal (27.1%), and achievement of targets for indicators (5.7%).

Kusek & Rist (2004) stated that result-oriented monitoring involved gathering and analyzing information on an ongoing basis to compare how well an intervention is being implemented against expected results. On the other hand, traditional implementation-focused monitoring systems are emphasized on progress of activities and delivery of outputs. Based on this, the findings suggest that the monitoring systems in the respondent organizations tend to be traditional.

Figure 4. 1: What the respondent organizations usually monitor (N=88)

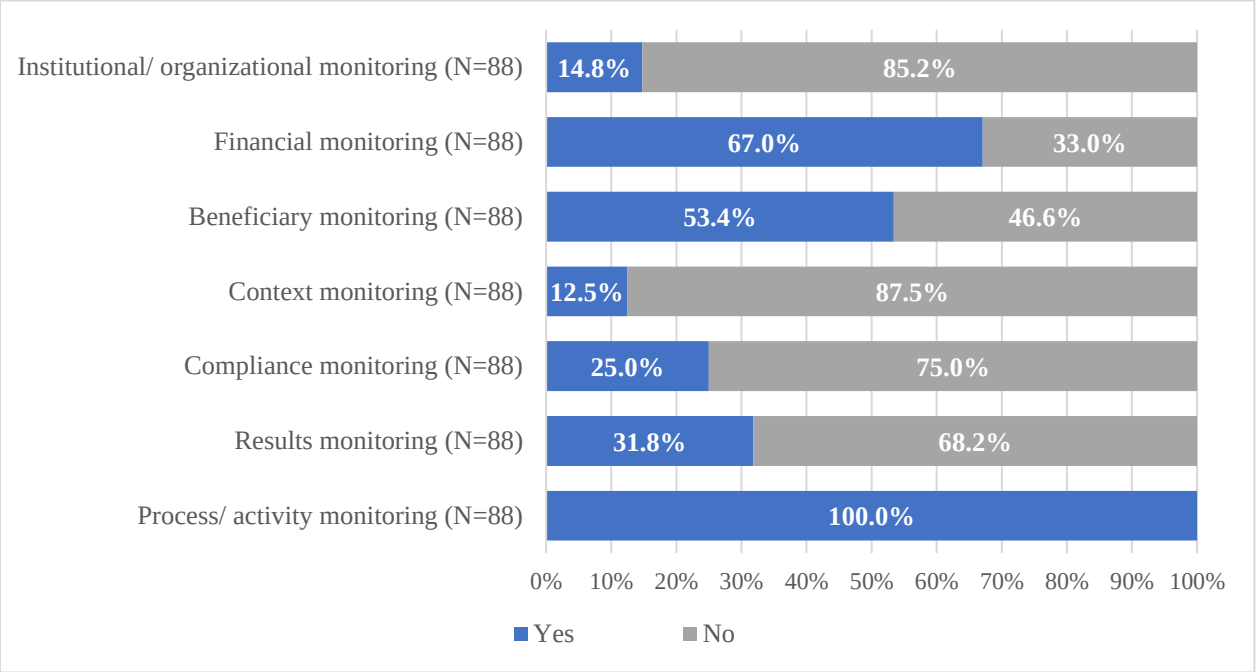


Source: Survey data (2019)

As illustrated on **Figure 4.2**, all the respondent organizations undertook process monitoring. Little more than two-thirds (67%) practiced financial monitoring. More than half (53.4%) of the respondent organizations applied beneficiary monitoring. Moderate proportions of the respondents practiced compliance monitoring (31.8%), and result monitoring (25%). Few respondent organizations adopted institutional monitoring (14.8%), and context monitoring (12.5%).

These widespread uses of activity/ process monitoring, and financial monitoring indicate the monitoring systems emphasized on the measure of the conversion of inputs in to outputs. The low use of result monitoring further indicates that verification of the progresses of project activities towards the outcomes received little attention in many of the respondent organizations. This bolsters the conclusion that the monitoring systems in these organizations are skewed towards the traditional implementation-focused approaches.

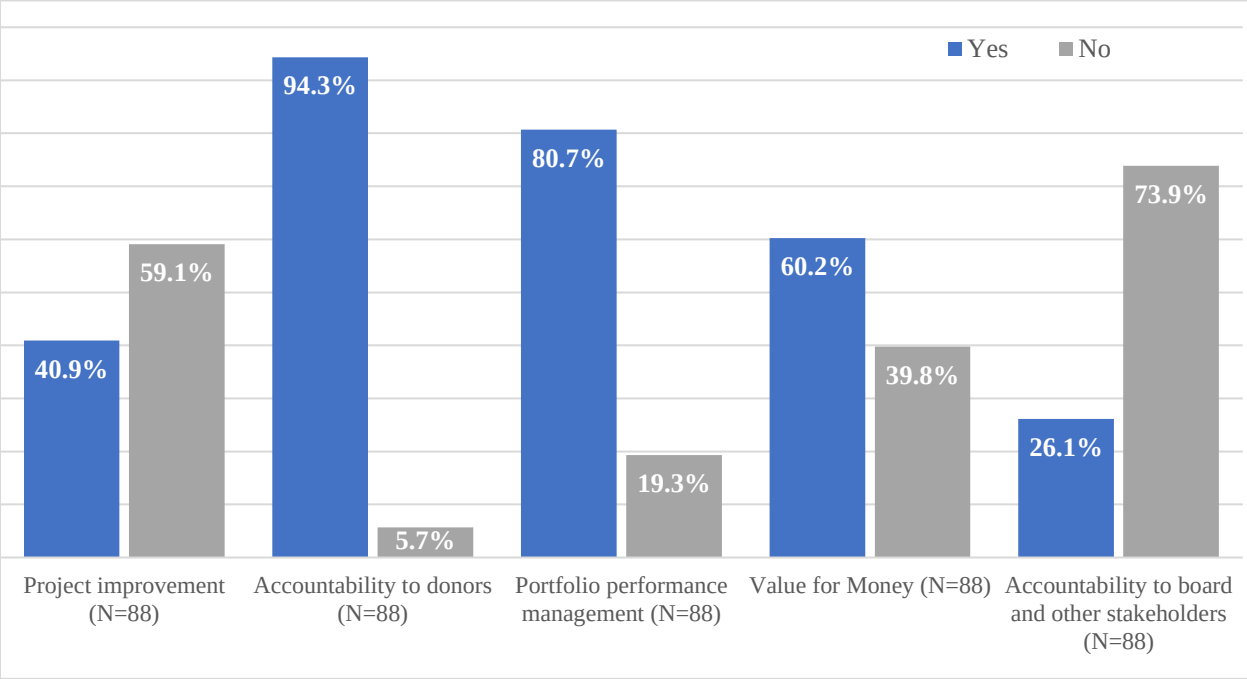
Figure 4. 2: Types of monitoring undertaken



Source: Survey data (2019)

The overwhelming majority (94.3%) of the respondent organizations conducted monitoring to respond to accountability to donors. Similarly, the considerable majority (80.7%) of the respondent organizations monitored projects for portfolio performance management. Monitoring also serves the purpose of ensuring value for money for 60.2%. A bit more than two-fifth (40.9%) of respondents employed monitoring for project improvement. The purpose of accountability to board and other stakeholders was served in 26.1% of the respondent organizations. This coincides with KPMG International (2014) which identified that NGOs were more accountable to donors than their own boards. Furthermore, these results signify that the focus of monitoring, in these organizations, tends to be process-oriented, and donor-driven.

Figure 4. 3: Purposes of monitoring



Source: Survey data (2019)

4.3.3. Evaluation Practices

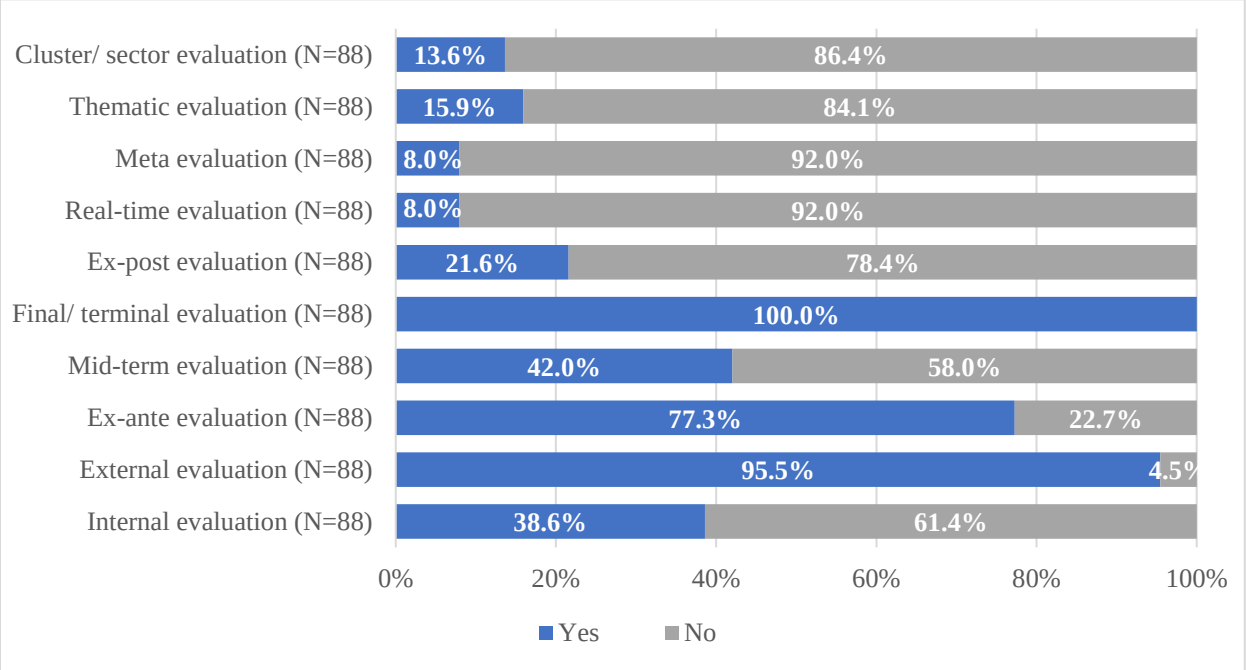
Virtually all the respondent organizations conduct project evaluation externally. Less than two-fifth (38.6%) performed evaluation internally. This finding concurs with KPMG International (2014) which indicated more frequest use of commissioned consultancy evaluations and the rare use of self evaluation by grantees/ recipients. This implies most donors prefer external evaluation to internal evaluation as results generated externally are believed to be independent and value free. The other reason for lower use of internal evaluation is that the organizations may not have the in-house expertise to conduct evaluation.

All the respondents used final/ terminal evaluation. More than three quarters (77.3%) of the respondent organizations conducted ex-ante evaluation. Less than half (42%) practiced midterm evaluation. Those who conducted ex-post evaluation were quite few (21.6%). This implies the organizations are more emphasized on measuring outcomes rather than synthesizing evidences on the long-term impacts of their interventions.

The practices of types of evaluation based on technicalities were quite low. Thematic evaluation and cluster/ sector evaluation were practiced by 15.9% and 13.6%, respectively. This agrees with

the findings of KPMG International (2014) which indicated the less frequent use of thematic and sector evaluations. The practices of meta evaluation (8%) and real-time evaluation (8%) were found minimal.

Figure 4. 4: Types of evaluation conducted



Source: Survey data (2019)

Table 4.4 shows the different purposes respondents conduct evaluation. The finding that all the respondents conduct evaluation to meet donors' requirements indicates evaluation practices tend to be donor-driven. This is reinforced by the result that 76.1% undertake evaluation to attract additional funds. Similarly, improving accountability and transparency was identified by 76.1% as a purpose of evaluation. The majority of the respondents mentioned piloting the effectiveness of innovative approach (67%), improving developing impact (62.5%), and improving value for money (56.8%) as purposes of evaluation. Undertaking evaluation for documenting lessons learned (35.2%), and provide evidence for policy makers (20.5%) was less common. The little use of evaluation for learning is opposed to the finding of KPMG International (2014) which indicated identification of lessons as the most important purpose of evaluation. This suggests the use of evaluation for identifying and documenting lessons learned depends on the context, and the size of the organization.

Table 4. 4: Purposes of evaluation

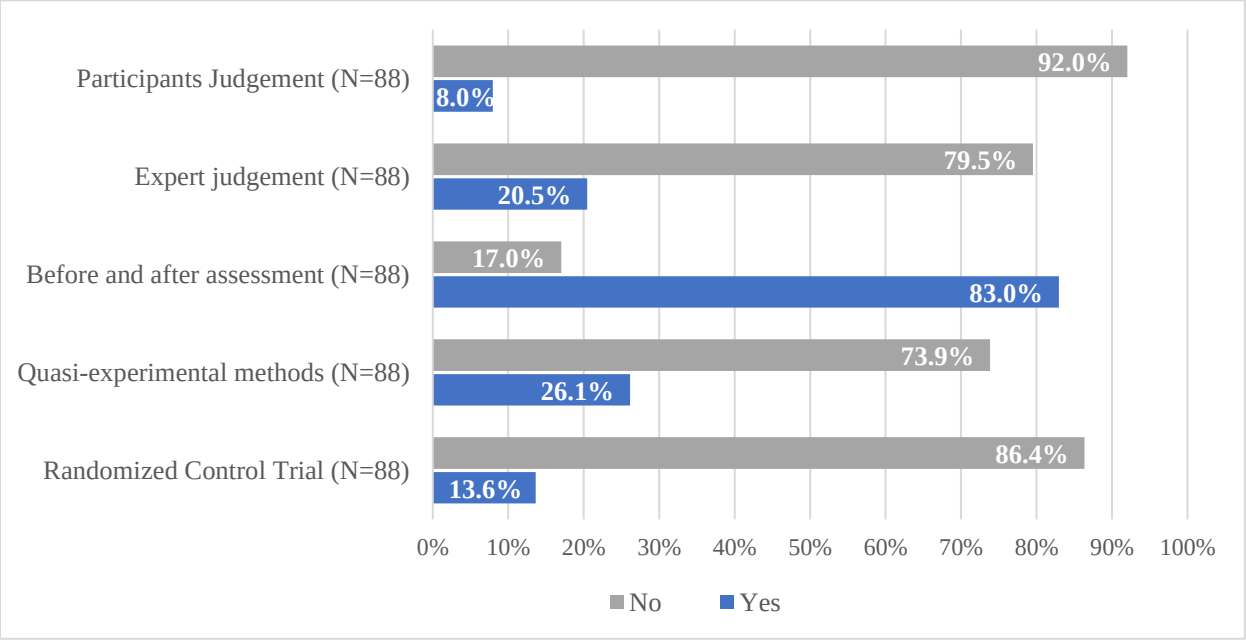
Variable	Level	Frequency	Percent
Document lessons learned from ongoing/ completed projects/ programs	Yes	31	35.2
	No	57	64.8
	Total	**88**	**100.0**
Improving development impact	Yes	55	62.5
	No	33	37.5
	Total	**88**	**100.0**
Providing evidence for policy makers	Yes	18	20.5
	No	70	79.5
	Total	**88**	**100.0**
Piloting the effectiveness of innovative approaches	Yes	59	67.0
	No	29	33.0
	Total	**88**	**100.0**
Improving value for money	Yes	50	56.8
	No	38	43.2
	Total	**88**	**100.0**
Improving transparency and accountability	Yes	67	76.1
	No	21	23.9
	Total	**88**	**100.0**
Attracting additional funding	Yes	67	76.1
	No	21	23.9
	Total	**88**	**100.0**
Meeting donors' requirements	Yes	88	100.0
	No	-	-
	Total	**88**	**100.0**

Source: Survey data (2019)

Figure 4.5 demonstrates the methods used by the respondent organizations to measure the impacts of their interventions. Before and after assessment was found the most popular (83%) method of impact evaluation. The results also show minimal use of quasi-experimental methods (26.1%) and expert judgement (20.5%). In addition, the respondent organizations rarely used randomized control trials (13.6%) and participant judgement (8%) to assess impacts of interventions. This is in line with the results of KPMG International (2014) that identified "low emphasis on quantified techniques which involve counterfactual analysis with potential attribution of impact".

Impact evaluation methods, such as experimental and quasi-experimental studies, involve the application of complex models with high technical rigor. The marginal use of these methods can be linked to the limited financial and technical capacities of the respondent organizations. It can also be associated with the interests of donors on reporting of performance indicators irrespective of the methodological rigor involved in verifying these indicators. As the respondents indicated fulfilling donors' requirements as a major purpose of evaluation, they may tend to use evaluation methods that are acceptable to donors, but with little rigor. The reason for widespread use of before and after assessments may concur to this.

Figure 4. 5: Impact Evaluation methods used



Source: Survey data (2019)

4.3. Effectiveness of M&E Systems

Table 4.5 shows respondents' ratings for various dimensions of effectiveness of M&E systems in their organizations. The ratings used five-point scales ranging from "very low" to "very high". The results showed "high" or "very high" (65.9%) ability of the M&E systems to meet donors' requirements. The large parts of respondents indicated medium to high performances with respect to abilities of their M&E systems to measure results (62.2%), to meet other stakeholders' requirements (50%), and provide timely information (48.9%). The large segments of respondents also reflected "low" or "very low" performances with respect to the abilities of M&E systems to

identify, capture and share lessons learned (57.9%), inform decisions (50%), and make information accessible to all stakeholders (51.1%). These results imply the respondent organizations placed high attention on the use of M&E to comply with donors' requirements rather than any other purposes, such as supporting organizational learning, informing decisions, and responding downward accountability to other stakeholders.

Table 4. 5: Dimensions of effectiveness of M&E systems

Variable	VL		L		M		H		VH	
	F	%	F	%	F	%	F	%	F	%
Ability to measure results (N= 88)	9	10.2	17	19.3	28	31.8	25	28.4	9	10.2
Ability to inform decisions (N= 88)	12	13.6	32	36.4	21	23.9	17	19.3	6	6.8
Ability to provide timely information (N= 88)	9	10.2	25	28.4	24	27.3	19	21.6	11	12.5
Ability to make information accessible to all stakeholders (N=88)	19	21.6	26	29.5	22	25	13	14.8	8	9.1
Ability to identify, capture and share lessons learned (N= 88)	23	26.1	28	31.8	19	21.6	11	12.5	7	8
Ability to meet donor's requirements (N= 88)	7	8	3	3.4	20	22.7	32	36.4	26	29.5
Ability to meet information requirements of other stakeholders (N= 88)	11	12.5	21	23.9	25	28.4	19	21.6	12	13.6

Note: VL= Very low; L= Low; M= Medium; H=High; and VH= Very High

Source: Survey data (2019)

4.4. Perceptions Towards M&E Practices

Figure 4.6 depicted perceptions of respondents towards M&E with their levels of agreement to six statements. More than two respondents in five (45.4%) strongly disagreed or disagreed to the statement indicating that M&E should be given the least priority during project design. This suggests more or less affirmative views, despite the finding that more than half (54.6%) of the respondents held neutral position or opposed the statement.

Those who strongly disagreed or disagreed that M&E is fundamentally controlling the program team accounted for 56.8%. This implies M&E is less perceived as a control measure or policing. For the statement indicating that the only benefit of M&E is measuring project performance, 46.6% disagreed or strongly disagreed, 39.8% agreed or strongly agreed, 13.6% held a neutral position.,

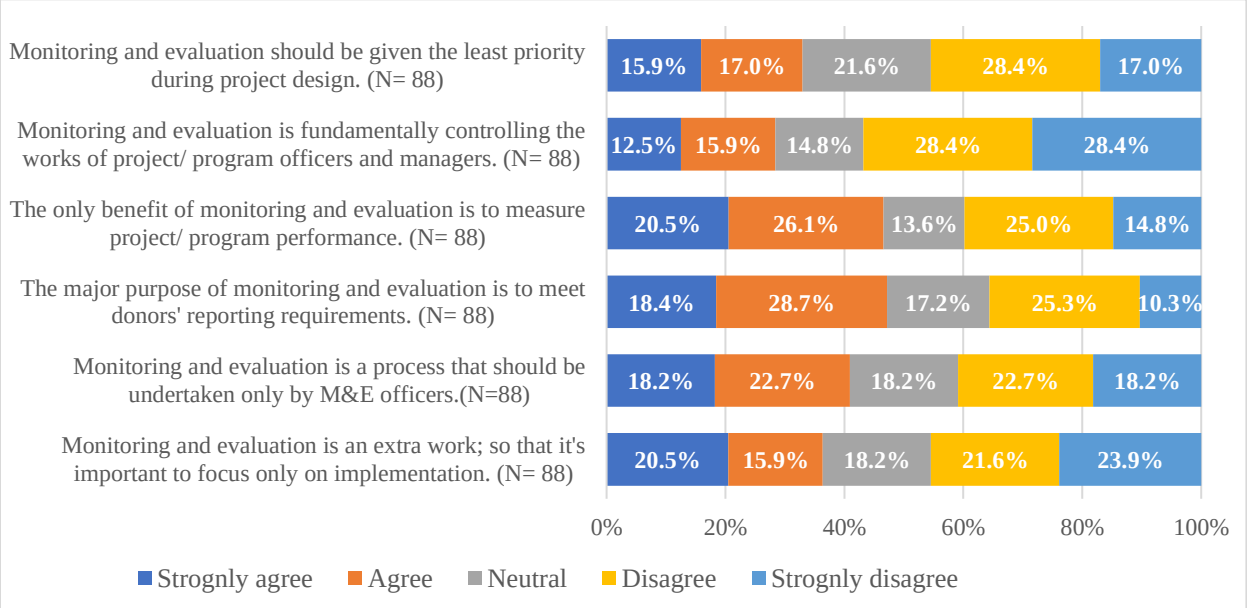
This indicates it is still largely believed that M&E can only be used for measuring results, although the majority of the respondents opposed the statement.

Little lower than half (47.1%) of the respondents agreed or strongly agreed to the statement that specifies meeting donor's reporting requirement as the major purpose of M&E. This corroborates the findings that M&E practices in the respondent organizations highly oriented towards responding to upward accountabilities.

Opinions were equally divided on whether M&E should only be undertaken by M&E officers as the statement was strongly agreed or agreed by 40.9%, and similarly disagreed or strongly disagreed by 40.9%. This implies it is still widely believed that M&E does not require support from other staffs and the management. The finding somehow supports the claim of Emmanuel (2015) that M&E is perceived as a process that should be undertaken by M&E personnel without the support from other staffs.

The statement that underlines on the importance of focusing only implementation was disagreed or strongly disagreed by 45.5%, and agreed or strongly agreed by 36.4%.

Figure 4. 6: Respondents' levels of agreement on six statements about their perceptions towards M&E practices



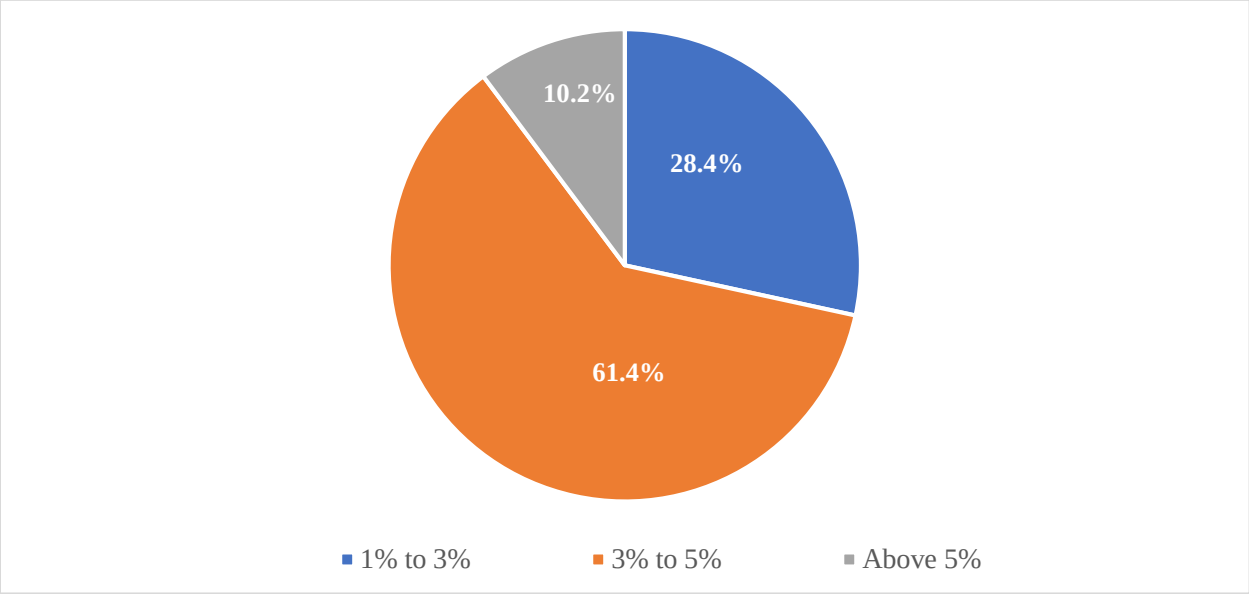
Source: Survey data (2019)

4.5. Budget Allocation

As shown in **Figure 4.7**, the majority (61.4%) of the respondent organizations allocated 3% to 5% of their program budgets for M&E. The respondents that allocated less than 3% constituted 28.4%. The remaining 10.2% allocated above 5%. This finding is in agreement with KPMG International (2014) which identified that M&E constitutes less than 5% of the trotal program budget in the majority of the organizations surveyed.

According to Pasanen, (2017), It is a rule of thumb that 5% to 10% of the total program budget should be spent on M&E. In some instances, the budget for M&E may rise up to 20%. Considering this, it can be said that M&E is underbudgeted in the respondent organizations. The improper allocation of budget can be associated with inadequate attention given to M&E during project design.

Figure 4. 7: Proportion of the program budget being spent on M&E (N=88)



Source: Survey data (2019)

Table 4.6 shows the ratings of respondents on the adequacy of budget for different inputs of M&E. The budget for hiring staff tend to be inadequate as indicated by 61.2% of the respondents. The budget for purchase of hardware and subscription of software was mostly rated as “inadequate” or “very inadequate” (72.7%). The budget for travel resources for data collection was rated as “adequate” or “very adequate” by 45.9% of the respondents, while 43.9% rated it as “inadequate” or “very inadequate”. With the majority of respondents rating as “inadequate” or “very

inadequate", the budgets for staff training (67.1%), and result dissemination (58%) implied inadequacy. These results indicated that M&E is under-resourced in the respondent organizations as the budget is not adequate enough to support M&E related activities. The results support the findings of Kithinji, et al. (2017) which identified some allocations only in the form of salaries for M&E personnels. In addition, these findings bolster KPMG International (2014) indicated lack of finacial resources as the most frequently cited challenge for improving evaluation systems.

Table 4. 6: Adequacy of the budget for different inputs of M&E

Variable	VI		I		NO		A		VA	
	F	%	F	%	F	%	F	%	F	%
The adequacy of budget for hiring staff (N= 88)	24	27.3	21	23.9	8	9.1	28	31.8	7	8
The adequacy of budget for purchase of hardware and software subscriptions (N= 88)	44	50	20	22.7	1	1.1	17	19.3	6	6.8
The adequacy of budget for travel resources for data collection (N= 87)	11	12.6	27	31	9	10.3	29	33.3	11	12.6
The adequacy of budget for staff training (N=88)	29	33	30	34.1	9	10.2	16	18.2	4	4.5
The adequacy of budget for organizing result sharing events (N= 88)	19	21.6	32	36.4	11	12.5	21	23.9	5	5.7

Note: VI= Very inadequate; I= Inadequate; NO= No opinion; A= Adequate; and VA= Very adequate

Source: Survey data (2019)

4.6. Human Resource Capacity

Although the large parts of the respondent organizations had well-organized M&E teams, noticeable segments did not even have personnel totally dedicated to M&E activities. The majority (62.5%) of respondent organizations hired M&E experts to support M&E functions. This concurs with of Kithinji, et al. (2017) who found that a number of ordinary personnel led M&E activities. Project/ program officers/ managers supported M&E functions in the 29% of the respondent organizations. In very few (8%) organizations, M&E related activities were performed by others such as part-time consultants, and volunteers. Close to three-quarters (74.5%) of the respondent organizations that hired M&E experts had separate departments/ units for M&E.

Table 4. 7: Human resource capacity of the respondent organizations in M&E

Variable	Level	Frequency	Percent
Who supports monitoring and evaluation functions in the organization?	M&E experts	55	62.5
	Project/ program officers/ managers	26	29.5
	Others	7	8.0
	Total	**88**	**100.0**
Do you have a separate department/ unit for monitoring and evaluation?	Yes	41	74.5
	No	14	25.5
	Total	**55**	**100.0**

Source: Survey data (2019)

In the sizable (61.4%) proportions of the respondent organizations, M&E functions were led by experts with M&E work experiences less than five years. This agrees with the findings of Micah & Luketero (2017) who detected an average M&E work experience of less than five years. Those who had 5-10 years of experience accounted to 26.1%. Few (12.5%) had M&E experiences of more than 10 years. This implies M&E activities are mostly led by early career professionals.

Table 4. 8: Respondents' year of experience in M&E

Years of experience in M&E	Frequency	Percent
Less that 5 years	54	61.4
5- 10 years	23	26.1
More than 10 years	11	12.5
Total	**88**	**100.0**

Source: Survey data (2019)

The vast majority (87.5%) of the respondents received trainings related to M&E. Of which, 66.2% received both on-job and formal training. The remaining 20.8% and 12.5% received on- job and formal training, respectively. This indicates the adequate access to training services in M&E. This is corroborated by researcher's observation that M&E is one of the areas in which the NGO consortium organizations provide technical capacity building to their member organizations.

Table 4. 9: Trainings received in M&E

Variable	Level	Frequency	Percent
Did you receive any training/s related to monitoring and evaluation?	Yes	77	87.5
	No	11	12.5
	Total	88	100.0
In what form did you receive the training/s?	On-job training	16	20.8
	Formal training course	10	13.0
	Both	51	66.2
	Total	77	100.0

4.7. Use of Information Systems

The use of information systems is data collection was found to be low or marginally low. The majority of respondents indicated Tablet-based applications (65.9%) and GPS-based tools (62.5%) as "slightly important" or "not important". The considerable majority also regarded web-based surveys (91.9%), and SMS surveys (90.9%) as "slightly important" or "not important". These results support the findings of KPMG International (2014) that indicated the rare use of ICT-enabled tools in M&E. The findings also confirm the findings of Micah & Luketero (2017) who identified the widespread use of paper-based questionnaires for a data collection. This indicates the data collection systems in the organizations are not digitized yet. Rather, manual/ traditional ways of gathering data are widespread.

Table 4. 10: The use of information systems in data collection

Variable	NI		SI		MI		I		VI	
	F	%	F	%	F	%	F	%	F	%
The importance of Tablet-based applications (N= 88)	43	48.9	15	17	10	11.4	8	9.1	12	13.6
The importance of SMS surveys (N= 88)	70	79.5	10	11.4	2	2.3	4	4.5	2	2.3
The importance of telephone surveys (N= 88)	69	78.4	11	12.5	3	3.4	3	3.4	2	2.3
The importance of GIS tools (N= 88)	40	45.5	15	17	14	15.9	15	17	4	4.5

Note: NI= Not important; SI= Slightly important; MI= Moderately important; I=Important; and VI= Very Important

Source: Survey data (2019)

Table 4.11 shows the use of digital solutions in data analysis. Statistical software packages, such as SPSS and STATA, were found to be "moderately important" for 31.8%; "important or very important for 30.6%; and slightly important or not important for 37.5%. The large majority (68.1%) indicated data visual software as slightly important or not important. Furthermore, three quarters (75%) regarded qualitative data analysis tools, such as Atlas ti and Nvivo, as slightly important or not important. The findings agree with Micah & Luketero (2017) who found the rare use of advanced data analysis software packages. The results also show somehow moderate use of information systems for quantitative data analysis, but its minimal for data visualization and quantitative data analysis.

Table 4. 11: The use of information systems in data analysis

Variable	NI		SI		MI		I		VI	
	F	%	F	%	F	%	F	%	F	%
The importance of statistical analysis software packages (N= 88)	14	15.9	19	21.6	28	31.8	15	17	12	13.6
The importance of data visualization software (N= 88)	48	54.5	12	13.6	11	12.5	11	12.5	6	6.8
The importance of qualitative data analysis software (For e.g. Atlast ti, Nvivo) (N= 88)	52	59.1	14	15.9	11	12.5	5	5.7	6	6.8

Note: NI= Not important; SI= Slightly important; MI= Moderately important; I=Important; and VI= Very Important

Source: Survey data (2019)

Results indicated that email was to the most important tool that supports reporting in M&E. It was found to be "important" or "very important" for 62.5%, and moderately important for 25%. The findings also revealed little or no relevance of web-based reporting applications (59.3%), and cloud storage and file sharing systems (70.5%). These findings concur with Micah & Luketero (2017) who found that project data were mainly stored in paper files, and identified email as a principal means of information dissemination. The results implied that online knowledge repositories, that support storage and sharing of M&E products, are of little significance.

Table 4. 12: The use of information systems in reporting

Variable	NI		SI		MI		I		VI	
	F	%	F	%	F	%	F	%	F	%
The importance of email for report sharing (N= 88)	4	4.5	7	8	22	25	22	25	33	37.5
The importance of web-based reporting applications (N= 88)	46	52.3	15	17	3	3.4	11	12.5	13	14.8
The importance of cloud storage and file sharing systems (For e.g. google drive) for storing and sharing reports (N= 88)	49	55.7	13	14.8	11	12.5	9	10.2	6	6.8

Note: NI= Not important; SI= Slightly important; MI= Moderately important; I=Important; and VI= Very Important

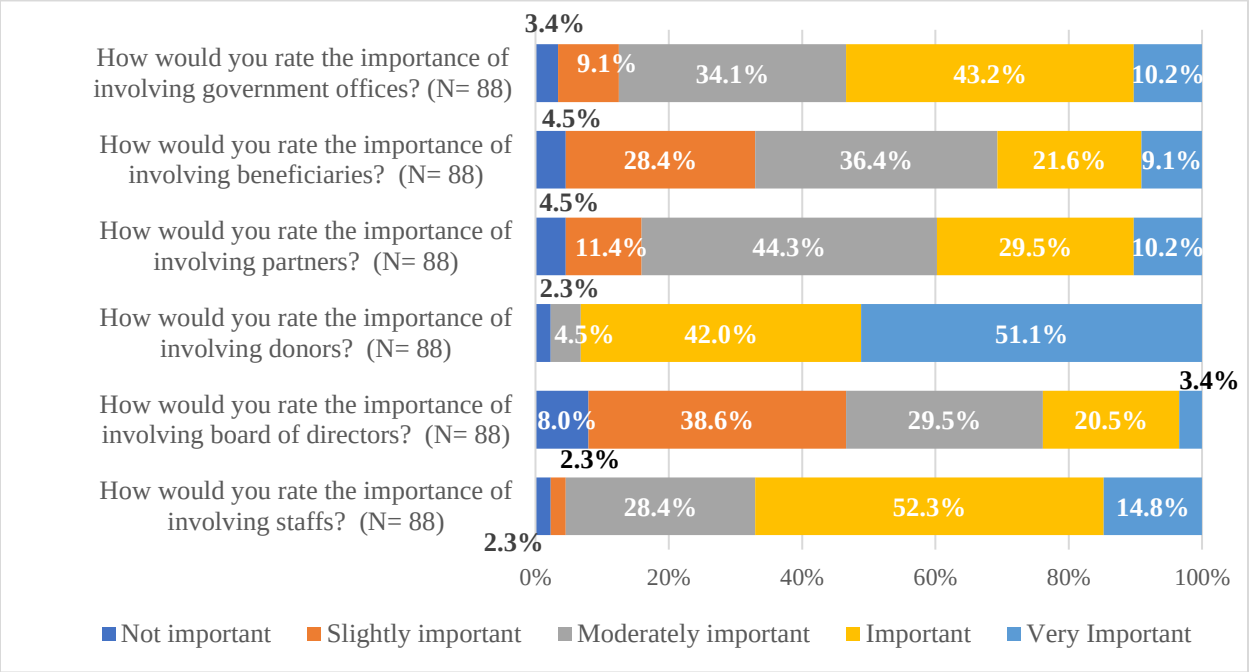
Source: Survey data (2019)

4.8. Stakeholders' Involvement

Figure 4.8 demonstrates the involvement of various stakeholders in M&E. Donors were found to be the most important stakeholders as their involvements were termed as "important" or "very important" by 93.1% of the respondents. The large majority of respondents also indicated the involvement of staffs (67.1%) and government offices (53.4%) as "important" or "very important". For most of respondents (44.3%), the involvement of partners was moderately important. It was also termed as "important" or "very important" by 39.7%. The involvement of beneficiaries was moderately important for 44.3%, but also "important" or "very important" for 30.7%. Board of directors were found to be the least important stakeholders as rated by 46.6% as "slightly important" or "not important". These findings are consistent with the findings of Karani, et al. (2014) who identified donors and staffs as highly involved, and beneficiaries as slightly involved stakeholders.

The above results imply that the level of involvement of stakeholders is directly related to their ability to influence processes. Stakeholders that have high influence, such as donors, staffs and government, were highly involved. Those stakeholders with low abilities to influence process, such as beneficiaries board of directors, seemed to be slightly involved in M&E.

Figure 4. 8: The involvement of various stakeholders in M&E



Source: Survey data (2019)

Table 4.13 shows the ratings of respondents on the importance of stakeholders' involvement in planning for M&E, data collection, result validation, and decision making. The results indicated high involvement of stakeholders in result validation as it is termed as "important" or "very important" by 73.9%. The same is true for the involvement of stakeholders in planning for M&E (59.1%). However, low involvements of stakeholders were identified as suggested by the "slightly important" or "not important" ratings for involvement in decision making (61.3%) and data collection (56.8%). These findings are in agreement with Micah & Luketero (2017) who found low stakeholder involvement pronounced in data collection and decision making.

The above results signal the role of stakeholders in the respondent organizations was mainly approval-related. It seems that their say is much needed in the endorsement M&E plans, and results generated on a periodic basis. This is indicated by the slight participation of stakeholders in decision making for project improvement, and data collection.

Table 4. 13: Stakeholders' involvement in M&E processes

Variable	NI		SI		MI		I		VI	
	F	%	F	%	F	%	F	%	F	%
The importance of involving stakeholders in planning for monitoring and evaluation (N= 88)	3	3.4	7	8	26	29.5	34	38.6	18	20.5
The importance of involving stakeholders in data collection (N= 88)	15	17	35	39.8	24	27.3	9	10.2	5	5.7
The importance of involving stakeholders in result validation and performance review (N=88)	3	3.4	7	8	13	14.8	36	40.9	29	33
The importance of involving stakeholders in decision making (N= 88)	17	19.3	37	42	18	20.5	10	11.4	6	6.8

Note: NI= Not important; SI= Slightly important; MI= Moderately important; I=Important; and VI= Very Important

Source: Survey data (2019)

4.9. Learning

Table 4.14 shows the views of respondents towards learning. Opinions seemed to be divided with regard to the importance of focusing on successes rather than failures as indicated by 42.1% of the respondents who strongly disagreed or disagreed, and 39.7% who agreed or strongly agreed. Likewise, the results found divided opinion on the statement "Identifying and sharing lessons learned is the least priority in M&E". Many (43.2%) respondents expressed disagreement or strong disagreement to the statement, but a roughly equal percentage (42.1%) of respondents indicated that they agreed or strongly agreed. The majority (52.3%) of the respondents agreed or strongly agreed to the statement that "reporting failures reduces attractiveness to the donors". This statement was disagreed or strongly disagreed by 40.7%. These findings somehow agree with Karani, et al. (2014) who found the rare practice of lessons learned documentation among NGOs implementing HIV/AIDS projects.

The affirmative responses on the importance of focusing on successes and the least priority to be given to learning indicate that views that are against learning culture are still common. The affirmative views on reduced attractiveness to donors due to reporting failures suggest lack of interest to report failures due to fear of tarnished reputation among donors. In general, the M&E systems in many of the respondent organizations lack integration of learning.

Table 4. 14: The views of respondent organizations towards learning

Variable	SG		D		N		A		SA	
	F	%	F	%	F	%	F	%	F	%
When reporting, it is important to focus on successes rather than failures. (N= 88)	21	23.9	16	18.2	16	18.2	20	22.7	15	17
Reporting failures reduces attractiveness to donors. (N= 88)	10	11.4	17	19.3	15	17	22	25	24	27.3
Identifying and sharing lessons learned is the least priority in monitoring and evaluation. (N= 88)	19	21.6	19	21.6	13	14.8	21	23.9	16	18.2

Note: SG= Strongly disagree; D= Disagree; N= Neutral; A= Agree; and SA= Strongly

Source: Survey data (2019)

4.10. Regression Analysis of Factors Affecting Effectiveness of M&E Systems

4.10.1. Regression Model Specification

The study used the composite indexes of perception of M&E, use of RBM, budget allocation, Human resource capacity, use of information systems, and stakeholder involvement as independent variables. The dependent variable was effectiveness of M&E system. In this respect, the following model was formulated:

$EFF = a + \beta_1 PME + \beta_2 RBM + \beta_3 BUA + \beta_4 HRC + \beta_5 UIS + \beta_6 SHI + e$ Where,

- EFF represents effectiveness of M&E systems
- a is the constant
- β_1 to β_6 are the beta coefficients
- PME is perception of M&E
- RBM is use of RBM
- BUA is budget allocation for M&E
- HRC refers to human resource capacity
- UIS is use of information systems
- SHI is stakeholder involvement
- e is the error term

4.10.2. Diagnostic Testing Assumptions

4.10.2.1. Multicollinearity test

Multicollinearity is a state of strong association between independent variables. It can be detected in three ways. Variance Inflation Factor (VIF) values less than 1 and greater than10 indicate multicollinearity. The other way to test multicollinearity is a tolerance level a less than 0.2. In addition, multicollinearity can be detected with a Pearson's correlation coefficient greater than 0.8 (Field, 2009).

Three independent variables failed to meet the above three criteria. PME, RBM and BUA had VIF values greater than 10 and tolerance levels less than 0.2. The coefficients for correlations with the other variables were found greater than 0.8. Therefore, the initial model experienced multicollinearity.

One way of addressing the issue of multicollinearity is removing highly correlated independent variables and re-specifying the model (Frost, 2019; Wang, 2016). Accordingly, the independent variables PME, RBM and BUA were removed and the model was re-specified as:

$$EFF = a + \beta_1 HRC + \beta_2 UIS + \beta_3 SHI + e$$

Following the specification, correlation test was run again. As shown in **Table 4.15**, the coefficients of Pearson correlation between all the independent variables were below 0.8.

Table 4. 15: Pearson correlation between independent variable

Variable		HRC	UIS	SH
HRC	Pearson Correlation	1.000	-	-
	Sig. (2-tailed)	1	-	-
	N	88	-	-
UIS	Pearson Correlation	0.088	1	-
	Sig. (2-tailed)	0.416	-	-
	N	88	88	-
SHI	Pearson Correlation	0.350	0.705	1
	Sig. (2-tailed)	0.001	0.000	-
	N	88	88	88

Source: Survey data (2019)

Table 4.16 shows the tolerance levels and VIF test results of each independent variable. All the variables had tolerance levels greater than 0.2, and a VIF value between 1 and 10. Based on this, it can be concluded that there is no symptom of multicollinearity in the re-specified model.

Table 4. 16: Tolerance and VIF tests for multicollinearity

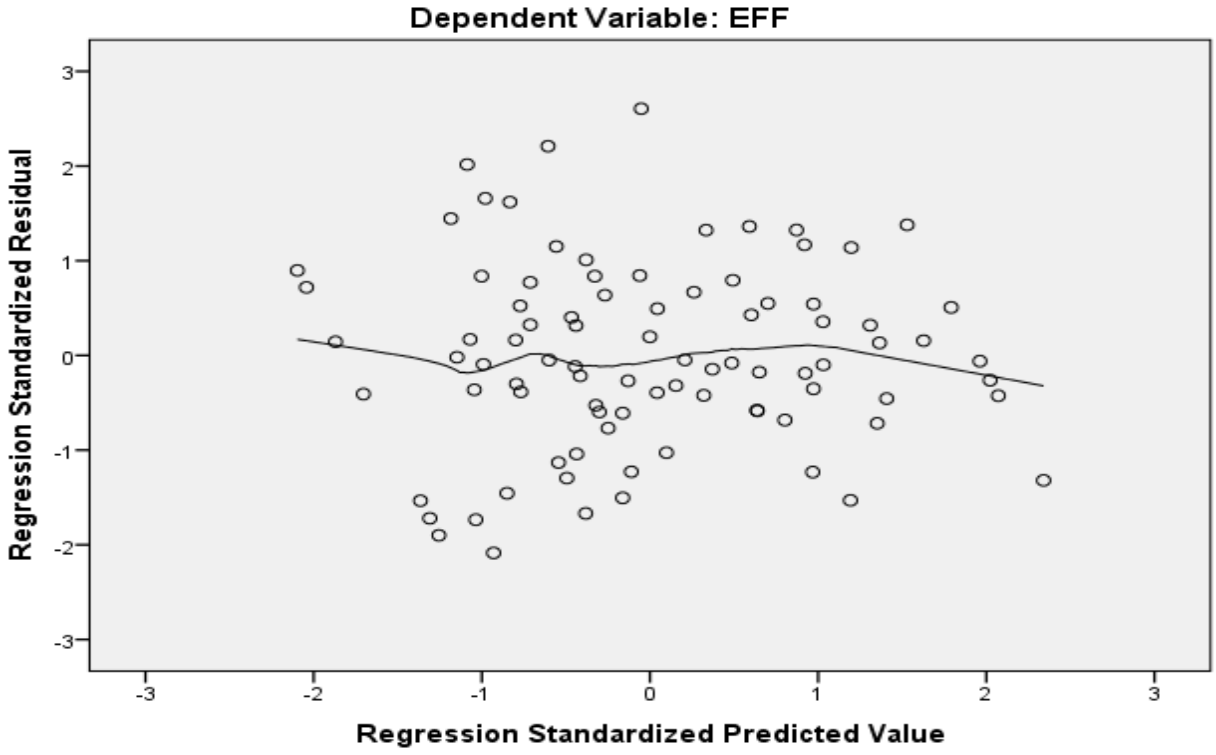
Variable	Tolerance	VIF
HRC	0.770	1.298
UIS	0.310	3.230
SHI	0.274	3.653

Source: Survey data (2019)

4.10.2.2. Linearity and Homogeneity

Linearity is the assumption that the relationship between dependent and independent variables is linear. The most common method of detecting linearity is the use of scatter plot of residuals. The linearity assumption is met when residuals are randomly scattered around zero (Osborne & Waters, 2002). Based on this, **Figure 4.9** reflected linearity as the residuals seem to be randomly scattered around zero.

Figure 4. 9: Scatter plot of residuals



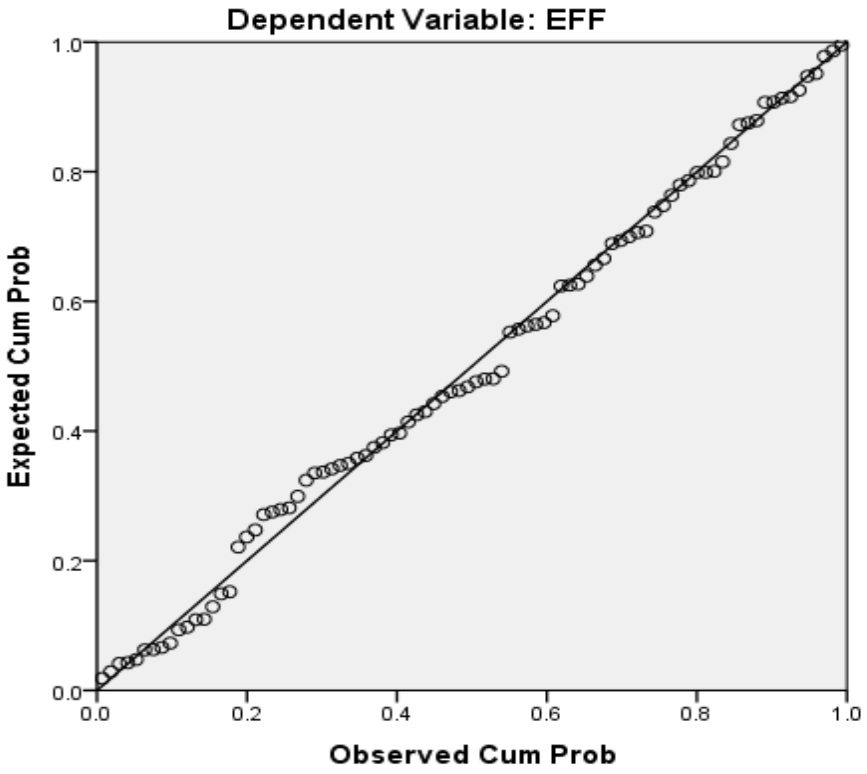
Source: Survey data (2019)

On the other hand, homogeneity of variance or homoscedasticity is the assumption that the variation in the residuals (or amount of error in the model) is similar at each point across the model. In other words, the spread of the residuals should be fairly constant at each point of the predictor variables (or across the linear model) (Field, 2009). When this assumption is met, the scatter plot chart looks like a random array of dots. If the distribution of dots has a pattern or funnel shape, then it is likely that the assumption has been violated (Ibid). **Figure 4.9** shows no obvious sign of funneling in the distribution of dots. Therefore, it appears that the assumption of homoscedasticity is met.

4.10.2.3. Normality

Normality is the assumption that the values of residuals should be normally distributed. This assumption can be tested by looking at the P-P plot for the model. The closer the dots lie to the diagonal line, the closer to normal the residuals are distributed (Field, 2009). According to the P-P Plot shown in **Figure 4.10**, the data points closely follow the diagonal line. This shows that residuals are normally distributed.

Figure 4. 10: P-P plot of regression standardized residual



Source: Survey data (2019)

4.10.2.4. Independence

This is the assumption that residuals are independent or uncorrelated. This assumption can be tested with Durbin-Watson statistics. The assumption of independence is met when this value close to 2. It is violated when the value of is below 1 or above 3 (Field, 2009). **Table 4.18** (the model summary table) shows a Durbin-Watson statistics value of 2.181, which is close to 2. This implies that the residuals are independent.

4.10.2.5. Influence

Influence is the assumption that there are no influential cases biasing the model. This assumption can be tested with Cook's Distance statistics. Any values of over 1 are likely to be significant outliers, which may place undue influence on the model (Field, 2009). In the light of this, the minimum and maximum values of Cook's Distance statistics, shown in **Table 4.17**, are way lower than 1. This suggest that individual cases were not influencing the model.

Table 4. 17: Descriptive analysis of Cook's Distance

	N	Minimum	Maximum	Mean	SD
Cook's Distance	88	0.00001	0.09202	0.0128923	0.01997530

Source: Survey data (2019)

4.10.3. Overall Regression Analysis

Table 4.18 presents the model summery of regression analysis. The result shows an R-Square value of 0.738, which means 73.8% of the variance in effectiveness of M&E systems (EFF) is explained by human resource capacity (HRC), use of information systems (UIS), and stakeholder involvement (SHI).

Table 4. 18: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.859	0.738	0.735	0.31924	2.181

Source: Survey data (2019)

Table 4.19 shows the results of ANOVA for the regression analysis. The findings of ANOVA indicated that the model significantly improved prediction of effectiveness of M&E systems, $F(3,84) = 320.264$, $P<0.001$. Therefore, the model was fit.

Table 4. 19: ANOVA results of regression analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	97.920	3	32.640	320.264	0.000
	Residual	8.561	84	0.102		
	Total	106.481	87			

Source: Survey data (2019)

Table 4.20 shows the relative effects of the three independent variables on the effectiveness of M&E systems. Use of information systems had the strongest (β = 0.555, p<0.001) and positive effect, followed by stakeholder involvement (β = 0.423, p<0.001), and human resource capacity (β = 0.108, p<0.01).

Table 4. 20: Regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.784	0.184		-4.271	0.000
	HRC	0.823	0.269	0.108	3.056	0.003
	UIS	0.571	0.057	0.555	9.990	0.000
	SHI	0.595	0.083	0.423	7.153	0.000

Source: Survey data (2019)

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

Based on the findings, many of the agriculture-oriented respondent organizations had M&E systems in place. Organizational M&E guidelines were available in the majority of organizations. It was found to be a common practice to prepare plans for M&E. However, the practicalities of these manuals and plans were linked to certain level of difficulty.

Logic models/ logical frameworks were the most popular RBM tools, for the majority of the respondent organizations, as they are the major requirements of donors. On the other hand, the results indicated little or no importance of result frameworks and outcome mapping for the respondent organizations.

Monitoring practices lend themselves towards the traditional rather than result-oriented monitoring systems. Instead of measuring the contribution of project activities towards outcomes, the focus of monitoring is on the delivery of outputs. The use of process/ activity monitoring was common to all. Financial monitoring and beneficiary monitoring were also widely used. The major purposes of monitoring were addressing the accountability concerns of donors, portfolio performance management, and ensuring value for money.

The results suggested project evaluations tend to be donor-driven as the respondents indicated that the major purposes of conducting evaluation were to meet donors' requirements, and attract additional funding. Virtually all evaluations were conducted by external experts. Ex-ante and final evaluations were the most common types of evaluation used. This is in line with the finding that the vast majority of the respondent organizations used before and after assessment as a means of measuring project impact. Nevertheless, the uses of rigorous and complex evaluation methods, such as randomized control trials and quasi-experimental methods, were found to be low.

The study disclosed that M&E practices were perceived as processes that are mainly oriented towards meeting donors' reporting requirements. There exists somehow common view that M&E can only be used for measuring results. Opinions were equally divided on whether M&E should only be undertaken by M&E officers. With respect to the attention to be paid to M&E during project design and implementation, the respondents reflected more or less affirmative views.

The findings revealed high abilities of M&E systems of the respondent organizations in meeting donors' requirements. The M&E systems showed moderate to high performances in their abilities to measure results, and provide timely information. Poor performances were detected with respect to the abilities of M&E systems to document and share lessons learned, inform decisions, and make information accessible.

The budget allocation indicated M&E lacks the due attention during project design and budgeting. Most of the respondent organizations allocated less than 5% of their program budget for M&E, which is lower than the recommended percentage. Results also showed inadequacies of budget for purchase of hardware and software, training staff, hiring staff, and dissemination of result.

The study identified M&E processes were mostly led by experts and functions separately dedicated to M&E. The results also suggested adequate access to training services in M&E. However, M&E personnel of the respondent organizations were dominated by early career professionals.

The use of information systems for data collection was found to be marginally low. The use of information systems for quantitative data analysis seemed to be moderate. Slight use of information systems was identified for data visualization and qualitative data analysis. Information systems also had little significance in information storage and sharing.

Regression analysis found that the effectiveness of M&E systems was vastly affected by human resource capacities, use of information systems, and stakeholder involvement. Among all, the use of information systems had the strongest and positive effect.

The results showed that learning was not much integrated to the M&E systems. Views that are against learning culture were reflected. The findings also indicated lack of interest to uncover failures due to fear of the potential harms on attractiveness to donors.

5.2. Recommendations

Based on the results identified, and the conclusions made, the study proposes the following recommendations:

- Result-oriented M&E systems can play a pivotal role in ensuring aid effectiveness. It is important to adopt RBM tools (such as outcome mapping) as integral part of M&E systems, and enhance the capacity of staff in the area.

- The results indicated M&E is underbudgeted due to lack of attention during planning and budgeting. It is required for the NGOs to involve M&E personnel during project design and budgeting.
- The use of information technologies improves the accuracy, quality, timeliness, and accessibility of information used in M&E. Agricultural NGOs are required to invest on their material and technical capacities in order to be able to use information technologies for data collection, data analysis, and information sharing.
- Transparency of M&E systems can be improved through increased involvement of stakeholders such as beneficiaries. Participation of such stakeholders also enhances buy-in and ownership of the projects to foster sustainability.
- One of the key characteristics an effective M&E system is its ability to identify lessons learned, and inform improvements in practices. Therefore, it is essential to have M&E policies that promote learning culture.

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APPENDICES

Appendix 1: Questionnaire

Introduction

Welcome to this survey. This questionnaire is intended to gather information on the practices of project monitoring and evaluation in NGOs implementing agricultural development projects. Participation is voluntary. The information you provide will be kept confidential, and will only be used for study purpose. Please read each question, and provide your answers.

Section I: Basic Information

1.1. Name of the NGO: _____

1.2. Type of NGO: ☐ Local ☐ International

1.3. How do you function as an NGO?

- ☐ As an implementing NGO
- ☐ As a commissioning NGO
- ☐ As an intermediate NGO

1.4. When did the organization start its operation in Ethiopia? _____

1.5. How much is the average budget (USD) of the organization in the past three years? _____

1.6. How many employees does the organization manages? _____

Section II: M &E Practices and the Use of RBM

2.1. Do you have organizational monitoring and evaluation manual/ guideline?

☐ Yes ☐ No

2.2. Do the projects in your organization have written plans to guide M&E processes?

☐ Yes ☐ Yes, but not for all ☐ No

2.3. How do you rate the practicability/ difficulty of monitoring and evaluation plans?

☐ Very difficult ☐ Difficult ☐ Neutral ☐ Easy ☐ Very easy

2.4. The following questions will ask you to rate the importance of different **monitoring and evaluation frameworks, and different types of monitoring and evaluation** for your organization. (Scale: 1= Not important; 2= Slightly important; 3= Moderately important; 4= Important; and 5= Very important)

Question	Scale				
	1	2	3	4	5
Monitoring and evaluation frameworks					
How would you rate the importance of **result frameworks**?					
How would you rate the importance of **logic models/ logical frameworks**?					
How would you rate the importance of **outcome mapping**?					
Types of monitoring					
How would you rate the importance of **results monitoring**?					
How would you rate the importance of **compliance monitoring**?					
How would you rate the importance of **context monitoring**?					
How would you rate the importance of **beneficiary monitoring**?					
How would you rate the importance of **financial monitoring**?					
How would you rate the importance of **organizational monitoring**?					
Types of evaluation					
How would you rate the importance of **Internal evaluation?**					
How would you rate the importance of **External evaluation?**					
How would you rate the importance of **Participatory evaluation?**					
How would you rate the importance of **Joint evaluation?**					
How would you rate the importance of **Ex-ante evaluation?**					
How would you rate the importance of **Mid-term evaluation?**					
How would you rate the importance of **Final/ terminal evaluation?**					
How would you rate the importance of **Ex-post evaluation?**					
How would you rate the importance of **Real-time evaluation?**					
How would you rate the importance of **Meta evaluation?**					
How would you rate the importance of **Thematic evaluation?**					
How would you rate the importance of **Cluster/ sector evaluation?**					

2.5. What do you usually monitor?

- ☐ Progresses of activities
- ☐ The contribution of activities towards project outcomes/ goals
- ☐ Delivery of outputs
- ☐ Achievement of targets for indicators

2.6. For what purpose do you undertake project monitoring?

- ☐ Project improvement
- ☐ Accountability to donors
- ☐ Portfolio performance management
- ☐ Value for Money
- ☐ Accountability to board and other stakeholders

2.7. For what purpose do you conduct evaluation?

- ☐ Document lessons learned from ongoing/ completed projects/ programs
- ☐ Improving development impact

- ☐ Providing evidence for policy makers
- ☐ Piloting the effectiveness of innovative approaches
- ☐ Improving value for money
- ☐ Improving transparency and accountability
- ☐ Attracting additional funding
- ☐ Meeting donors' requirements

2.8. The following questions will ask you to rate the importance of various methods for measuring impacts of interventions in your organization. (Scale: 1= Not important; 2= Slightly important; 3= Moderately important; 4= Important; and 5= Very important)

Question	**Scale**				
	1	**2**	**3**	**4**	**5**
How would you rate the importance of **Randomized Control Trial**?					
How would you rate the importance of **quasi-experimental methods**?					
How would you rate the importance of **Before and after assessment**?					
How would you rate the importance of **expert judgement**?					
How would you rate the importance of **participants judgement**?					

Section III: Perceptions

3.1. Please, identify to what extent you agree or disagree to the following statements. (Scale: 1= Strongly disagree; 2= Disagree; 3= Neutral; 4= Agree; and 5= Strongly agree)

Statement	**Scale**				
	1	**2**	**3**	**4**	**5**
Monitoring and evaluation is an extra work; so that it's important to focus only on implementation.					
Monitoring and evaluation is a process that should be undertaken only by M&E officers.					
The major purpose of monitoring and evaluation is to meet donors' reporting requirements.					
The only benefit of monitoring and evaluation is to measure project/ program performance.					
Monitoring and evaluation is fundamentally controlling the works of project/ program officers and managers.					
Monitoring and evaluation should be given the least priority during project design.					

Section IV: Budget allocation

4.1. What proportion of program budget would you say is being spent on monitoring and evaluation? _____

4.2. The following questions will ask you to rate adequacy of the budget for acquisition of the resources of monitoring and evaluation. (Scale: 1= Very inadequate; 2= Inadequate; 3= No opinion; 4= Adequate; and 5= Very adequate)

Question	**Scale**				
	1	**2**	**3**	**4**	**5**
How would you rate the adequacy of budget for **hiring staff**?					
How would you rate the adequacy of budget for **purchase of hardware and software subscriptions**?					
How would you rate the adequacy of budget for **travel resources for data collection**?					
How would you rate the adequacy of budget for **training of staff**?					
How would you rate the adequacy of budget for **organizing result dissemination events**?					

Section V: Human resource capacity

5.1. Who supports monitoring and evaluation functions in the organization?

- ☐ M&E experts
- ☐ Project/ program officers/ managers [skip to 5.3]
- ☐ Others _____ [skip to 5.3]

5.2. Do you have a separate department/ unit for monitoring and evaluation?

☐ Yes ☐ No

5.3. How many years of previous monitoring and evaluation experience do you have? _____

5.4. Did you receive any training/s related to monitoring and evaluation?

☐ Yes ☐ No [skip to 5.7]

5.5. In what form did you receive the training/s?

☐ On-job training ☐ Formal training course ☐ Both

Section VI: Use of Information systems

6.1. The following questions will ask you to rate the importance of information and communications technologies for data collection, data analysis, and report sharing in your organization. (Scale: 1= Not important; 2= Slightly important; 3= Moderately important; 4= Important; and 5= Very important)

Question	Scale				
	1	2	3	4	5
Data collection					
How would you rate the importance of **Tablet-based applications?**					
How would you rate the importance of **SMS surveys**?					
How would you rate the importance of **telephone surveys**?					
How would you rate the importance of **GIS tools**?					
Data Analysis					
How would you rate the importance of **statistical analysis software packages**?					
How would you rate the importance of **data visualization software (For e.g. tableau)**?					
How would you rate the importance of **qualitative data analysis software (For e.g. Atlast ti, Nvivo)**?					
Report sharing					
How would you rate the importance of **email**?					
How would you rate the importance of **web-based reporting applications**?					
How would you rate the importance of **cloud storage and file sharing systems (For e.g. google drive)**?					

Section VII: Stakeholder involvement

7.1. The following questions will ask you to rate the importance the involvement of the different stakeholders in different monitoring and evaluation processes of your organization. (Scale: 1= Not important; 2= Slightly important; 3= Moderately important; 4= Important; and 5= Very important)

Question	Scale				
	1	2	3	4	5
Types of stakeholders involved					
How would you rate the importance of involving **staffs?**					
How would you rate the importance of involving **board of directors?**					
How would you rate the importance of involving **donors?**					
How would you rate the importance of involving **partners?**					
How would you rate the importance of involving **beneficiaries?**					
How would you rate the importance of involving **government offices?**					
Stakeholder involvement in monitoring and evaluation processes					
How would you rate the importance of involving stakeholders in **planning for monitoring and evaluation**?					
How would you rate the importance of involving stakeholders in **data collection**?					
How would you rate the importance of involving stakeholders in **result validation and performance review?**					

Question	Scale				
	1	2	3	4	5
How would you rate the importance of involving stakeholders in **decision making?**					

Section VIII: Learning

8.1. Please, identify to what extent you agree or disagree to the following statements.

(Scale: 1= Strongly disagree; 2= Disagree; 3= Neutral; 4= Agree; and 5= Strongly agree)

Statement	Scale				
	1	2	3	4	5
When reporting, it is important to focus on successes rather than failures.					
Reporting failures reduces attractiveness to donors.					
Identifying and sharing lessons learned is the least priority in monitoring and evaluation.					

Section IX: Effectiveness of M&E system

9.1. The questions below will ask you to rate the performance of the monitoring and evaluation system of your organization in different areas. (Scale: 1= Very low; 2= Low; 3= Medium; 4= High; 5= Very high)

Response	Scale				
	1	2	3	4	5
How would you rate the performance of the monitoring and evaluation system in its ability to measure results?					
How would you rate the performance of the monitoring and evaluation system in its ability to inform decisions?					
How would you rate the performance of the monitoring and evaluation system in its ability to provide timely information?					
How would you rate the performance of the monitoring and evaluation system in its ability to make information accessible to all stakeholders?					
How would you rate the performance of the monitoring and evaluation system in its ability to identify, capture and share lessons learned?					
How would you rate the performance of the monitoring and evaluation system in its ability to meet donor's requirements?					
How would you rate the performance of the monitoring and evaluation system in its ability to meet information requirements of other stakeholders?					

Thank you!