

**ADDIS ABABA UNIVERSITY
SCHOOL OF COMMERCE**



***Assessment of Monitoring and Evaluation Practice of
Ethiopian Roads Authority***

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IN PROJECT MANAGEMENT

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DECLARATIONS

I Melat Tsegaye registration number I.D. number GSE 0081/08, do hereby declare that this project work is my original work and that it has not been submitted partially; or in full, by any other person for an award of degree in any other university/institution.

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APPROVAL

The undersigned certify that they have read and hereby recommend to Addis Ababa University School of Commerce to accept the Project Work submitted by Melat Tsegaye and entitled Assessment of Monitoring and Evaluation Practice of Ethiopian Roads Authority in partial fulfillment of the requirements for the award of a Masters Degree in PROJECT MANAGEMENT.

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ACRONYMS

M&E	Monitoring & Evaluation
ERA	Ethiopian Roads Authority
RSDP	Road Sector Development Program
RRAs	Regional Roads Authorities
WRO	Woreda Road offices
GTP	Growth and Transformation Plan
LFA	Logical Framework Approach
LF	Logical Framework
PLM	Project Lifecycle Model
WB	World Bank

ABSTRACT

This study assesses the Monitoring and Evaluation practice of Ethiopian Roads Authority which most of its projects face high time and cost overrun as well as quality problems. The M&E practice of the Authority was assessed based on the four basic components of M&E System: Institutional capacity, Data quality, tools and M&E result utilization.

The research design employed is descriptive research and the data type is qualitative data collected using questionnaire, key informant interview and from different documents of the Authority. The target population consists about 200 individuals who are responsible for Project Planning, Implementation, Monitoring and Evaluation. From the population, 133 individuals are selected using Stratified Sampling technique and the data is analyzed using SPSS version 21.

The research showed that, though it is neither equipped well nor capacitated to be self standing, and the M&E practice is dispersed among different units in the Authority, the Authority has a dedicated central M&E unit. The data source used for the M&E practice is from single source and there is no appropriate data validation system. Regarding M&E tools, ERA uses specific guideline and manual and also has different performance measurement indicators but it doesn't use specific M&E approach consistently. The M&E findings are compiled as lesson learnt and the M&E result utilization is mainly for decision making. But there is a gap in communicating the M&E result among key staffs involved in the M&E process as well as members of the Management which indicates that there is a limitation in utilization of same effectively. Finally, getting good quality of data, delayed information, difficulty in using M&E tools & methods, capacity gaps, gaps in implementing efficient M&E systems supported by ICT and perception of employees on the M&E tasks and environment are the identified challenges which the Authority is experiencing.

Therefore, in order to strengthen the M&E practice of Ethiopian Roads Authority this study recommends that the unit responsible for M&E should be properly staffed & equipped with the necessary knowledge and skill. Moreover, the dispersed M&E responsibilities in the Authority shall be harmonized centrally within the M&E work unit. To ensure data quality, mechanism for data triangulation, clearance, and validation should be designed. Furthermore, to maximize the

efforts made and enhance efficiency of the M&E system, clearly defined M&E approach and appropriate M&E result communication strategy should be deployed.

Key words: M&E, Ethiopian Roads Authority, Indicators.

Chapter One

Introduction

1.1 Background of the study

The overriding development agenda of the Growth and Transformation Plan (GTP) of Ethiopia is to sustain rapid, broad-based and equitable economic growth path and eventually end poverty. In this course of political and socio-economic transformation of the country, the central role and contribution of infrastructure is indispensable. That is why the Government has placed the development of infrastructure, in general, and road, in particular, as one of the key priorities of its economic development strategy (MoFED, 2012).

With the current arrangement, road sector development, management, and maintenance are mainly executed by the Ethiopian Roads Authority (ERA), Regional Roads Authorities (RRAs), Municipal Road Authorities (MRAs) and the Woreda Road Offices (WROs). The Ethiopian Roads Authority (ERA) is a federal agency responsible for the overall network planning, Federal road development, coordination and development of road sector policies and standards in the country (ERA, 2011).

Out of the existing more than 120 thousand kms of federal and rural road networks of the country, more than 28 thousand is federal road network and is administered by the authority. Currently the Authority is managing hundreds of design, construction, maintenance, supervision, and technical assistance projects.

As a critical part of a project management practice, and also indicated in several studies, Monitoring and Evaluation is one of the factors leading to project success. Project success seemed to be enhanced among other factors, by constantly monitoring and evaluating the progress of a project. Monitoring, Evaluating and controlling is relevant in management of project scope, time, cost, quality, human resources, communication and risks (Kamau & Mohamed, 2015).

M&E is a process of continual gathering of information and assessment of it in order to determine whether progress is being made towards intended goals and objectives. It is an integral part of the project cycle and of good management practice (Stockbridge & Smith, 2011).

Accordingly, Ethiopian Roads Authority is being using different monitoring and evaluation practices at different tiers to ensure the successful completion of the projects it manages. However most of its project faces time and cost overrun (ERA, 2014).

Therefore, this research is intended to assess the practice of the M&E system of the Authority since the M&E practice of an organization has a contribution for the achievement of project objectives (Steps, 2004).

1.2 Background of ERA

Ethiopian Roads Authority /ERA/ is a legally autonomous organization originally established on January 26, 1951. Ever since its establishment, the Authority has gone through a series of structural changes, the most recent one being in July 2011 by the Council of Ministers Regulation No. 247/2011. This regulation corroborates the split of the operational and regulatory wings as two independent entities, leaving ERA to focus on Road Network Development and Asset Management rather than construction and maintenance of same (ERA, 2013).

Hence, the main objectives of ERA, as stated in the aforementioned regulation, are to develop and administer roads, create conducive conditions for the coordinated development of roads network, and plays leading role in formulation and regulation of standards in the sector.

To meet these objectives, the Authority:

- Initiate roads related policies, directives, and laws;
- Prescribe road design standards;
- Prepare coordinated national road network development plans and programs and implement same upon approval;
- Render consultancy and technical support to the regional road agencies and other relevant organs upon request;
- Train man power required for the development of roads as necessary;
- Cause the use of, free of charge, land and quarry substances required for the purpose of road related works;
- Acquire land required for road works by paying compensation for the land possessors and property owners in accordance with the law;

- Remove properties unlawfully placed within the right of way roads;
- Take necessary measures to protect the environment whenever road works are undertaken.

To discharge its responsibilities, the Authority is structured into four main Departments, being led by Deputy Director Generals, who are accountable to the Director General. These are Planning and ICT, Engineering Operations, Asset Management, and Human Resources & Finance. In order to reinforce the effectiveness of project implementation, five Regional and one Design and Build Contract Management Directorates are established under the Engineering Operations Department (ERA, 2013).

1.3 Statement of the problem

In the context of Ethiopia, road is the most important infrastructure that provides access to rural and urban areas in the country. Road plays crucial role to reduce transportation cost and support economic growth in the country. However, in the late 1990's; the road network coverage was limited to major urban areas and some rural areas. Most areas in the country were isolated from economic centers, market and basic social services. The existing road network was largely deteriorated and in poor condition (ERA,2017).

The Government of Ethiopia has well recognized that limited road network coverage and poor condition of the existing road network has been an impediment to economic recovery and economic growth. Therefore, to address the problems in the road sector; the Government has launched the Road Sector Development Program (RSDP) in 1997. Since then, four phases of RSDP were implemented over the period of 1997 - 2015 and the fifth phase; RSDP V has been implemented since July 2015 (ERA,2017).

Over twenty years of RSDP, physical works consisting of rehabilitation and upgrading of trunk and link roads, construction of new link roads, rural roads & district roads and maintenance of federal and regional roads have been carried out by Ethiopian Roads Authority (ERA), Regional Roads Authorities (RRAs) and Woreda Road offices (WRO) and the community and municipalities. Series of policy and institutional reforms have been implemented in the sector, which have enhanced implementation capacity of road projects and effectiveness of Road Asset Management.

Overall, RSDP is achieving satisfactory progress against its objectives and benchmarks. Substantial results have been achieved in improving rural accessibility and the condition of the road network. The capacity of ERA has been strengthened over the years and demonstrated its leadership in the sector despite huge works, various technical sector issues and staff turnover (ERA,2014).

Currently the Authority is managing hundreds of design, construction, maintenance, supervision, and technical assistance projects. During the project implementation, the Authority emplaces different monitoring and evaluation practices at different tiers to ensure the successful completion of the projects it manage. The following, among others, are some of the M&E practices being implemented in the Authority:

- Monthly, quarterly, bi-annual, and annual performance reports;
- Site visit reports;
- RSDP and SDG Performance reports
- Program (project) mid-term reviews
- Project (implementation) completion missions and reports
- Project/corridor/program-based Impact Evaluation Studies

In spite of all these ranges of M&E practices, most of the projects managed by the Authority face different challenges, including high time and cost overrun as well as quality problem (ERA, 2013).

As World Bank (2004) states, M&E practice determines the extent to which projects achieve their intended goals. Therefore, it is vital to critically assess the overall monitoring and evaluation practice of the Authority. Moreover, the absence of any similar assessment and the clear gap on the subject coupled with multi-billion investments every year by the Authority further justifies this assessment.

1.4 Research questions

The research tries to address the following questions.

- What does the institutional capacity of the M&E system of the Authority looks like?

- What types of M&E tools used?
- How data quality is ensured?
- For what purpose are the M&E results utilized?
- What are the challenges encountered while monitoring and evaluating projects?

1.5 Research objectives

1.5.1 General objective

The general objective of the study is to assess the monitoring and evaluation practice of the Ethiopian Roads Authority.

1.5.2 Specific objective

In achieving the above overall objective, this study attempts the following specific objectives.

- To assess the institutional capacity of the M&E system;
- To assess the data quality and M&E tools used;
- To assess the utilization of M&E results;
- To identify the challenges encountered in the process of monitoring and evaluating projects and programs.

1.6 Significance of the study

Despite the ranges of monitoring and evaluation practices, the Authority is facing delays on majority of its projects. And this scenario had not been yet assessed as per the knowledge of the researcher. Therefore, this research has the following significance;

- Since there is no similar assessment made, the research helps to figure out the comprehensive picture of the assessment practice.
- The research findings identify the missing link between the M&E practice and the project performance.
- The research findings help in sharing best practices of the Authority if any for similar organization.
- Finally, the research paves the way for further research in the subject matter.

1.7 Scope of the study

The research is held on Ethiopian Roads Authority (ERA) which is responsible mainly for the federal roads. The research focuses only on the M & E part of a project cycle and also the assessment relies on the current Monitoring & Evaluation practice of the authority. Particularly the assessment focuses on the main M&E system factors which are Institutional capacity, Data quality, M&E tools used and Utilization of M&E result.

Regarding the research respondents, all respondents are from the subject organization. Geographically, the research covers only the activities at Head Office level.

1.8 Limitation of the study

It is known that Project Stakeholders are people, groups, or organizations that could impact or be impacted by the project and their impact on the project should be analyzed and well managed (PMBOK, 2015). With understanding the researcher believes the study would have been more comprehensive had it considered all relevant stakeholders like Contractors and Consultants.

However, due to time and budget constraint, the study tries to see the M&E practice only from the Client, i.e. ERA's, perspective and this can be taken as one limitation of the study. Moreover, the researcher believes had the study employed panel data and more regress analysis.

Despite the above limitations, the researcher strongly believes the findings of this study can shed light on potential areas of improvement in the M&E practice of ERA.

1.9 Organization of the study

Chapter one introduces the topic, study area, and gives out the outline of the study; it also describes the aim of the study, the objectives and gives insight on the questions the researcher is researching on.

Chapter two is literature review, which gives general background information on M&E and looks at what other scholars have done in this sector, and since the study is specifically on Ethiopian Roads Authority.

Chapter three looks at methods of data presentation and analysis.

Chapter four deals with the analysis of the data collected and linked to the theoretical framework.

The final Chapter five makes conclusions from the analysis, and gives recommendation, and finally suggestions of further areas of study in this field.

Chapter Two

Literature Review

2.1 Theoretical Review

2.1.1. Concepts and Definitions

2.1.1.1. *Project*

Based on definitions from different sources, project can be defined as a temporary endeavor to create a unique product, Service or Result with a defined beginning and an end. The project end is said to be reached when the project objectives have been achieved, or the project is terminated because its objectives will not or cannot be met, or when the need for the project no longer exists (Brown, 2007).

In the modern corporate landscape, a project is typically constrained by three elements, which may be expressed by the triple constraint theory or the Iron Triangle. These are Scope, Time and Budget. By controlling scope, time, and budget, a project can be successful while meeting the strategic goals of a business (Project Management Institute [PMI], 2013).

2.1.1.2. *The Project Life Cycle and the Project Cycle Management*

The literature is quite diverse when it comes to the project life cycle. For this study, we consider the project management life cycle being broken down into four phases: initiation, planning, execution, and closure. It is good to appreciate that quite significant literatures considers controlling or monitoring as a separate fifth phase. However, for the purpose of this study, this phase is taken as integral part of the execution and closure phases. This allows us to understand monitoring as a continuous process during execution (International Federation of Red Cross and Red Crescent Societies [IFRC], (2011).

Project initiation: During this phase a business problem or opportunity is identified and a business case providing various solution options is defined. Next, a feasibility study is conducted to investigate whether each option addresses the business problem and a final recommended solution is then put forward (Brown, 2007).

Project planning: The purpose of this phase is to set down a detailed strategy on how the project has to be performed and how to make it a success. Project Planning consists of Strategic Planning and Implementation Planning. In strategic planning, the overall approach to the project is developed. In implementation planning, the ways to apply those decisions are sought. It involves outlining the activities, tasks, dependencies and timeframes; resource plan; financial plan; quality plan; acceptance plan; and procurement plan (PMI, 2013).

Project execution: In this phase decisions and activities defined during the planning phase are implemented.

Project closure: Project closure involves releasing the final deliverables to the customer, handing over project documentation to the business, terminating supplier contracts, releasing project resources and communicating the closure of the project to all stakeholders (Westland, 2007).

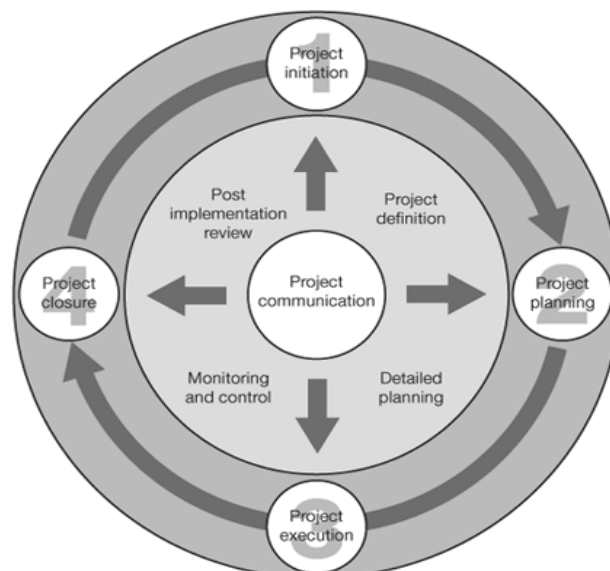


Figure 1. Generic project life cycle (Westland, 2007, p. 2)

2.1.1.3. Project Management

Just like the concept of project and project life cycle, project management has also been defined in different ways by different scholars. Summarizing those definitions this study defines project management as follows:

The art of directing and managing knowledge, skills, tools and techniques to the overall planning, directing, coordinating, monitoring and control of all dimensions of a project from its start to end, and the motivation of all those involved in the process to produce the product, service or result of the project on time, within cost, and to the predetermined level of quality, and to the satisfaction of the stakeholders (Passenheim,2009).

As a concept, Project Cycle Management is not that different from project management except it emphasizes the management of a project effectively and efficiently throughout its phases.

2.1.1.4. Monitoring and Evaluation

Going through the extensive literature on Monitoring & Evaluation (M&E), one can easily understand that there is no one single definition of these concepts. Several scholars and agencies have defined M&E concepts differently in a way it fits their purpose most (Bowden, 1988; PMBOK, 2013; UNDP, 1997; UNICEF, 1991).

According to the UNFPA (2001) Monitoring is a continuous management function that aims primarily to provide management and main stakeholders with regular feedback and early indications of progress and lack thereof in the achievement of intended results. Monitoring tracks the actual performance or situation against what was planned or expected according to pre-determined standards. Monitoring generally involves collecting and analyzing data on program processes and results and recommending corrective measures (UNFPA, 2001, P.7).

On the other hand, evaluation is defined according to the OECD (2010) as follows:

"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, 2010, P.21).

Likewise, for Simon (1986) Project monitoring is the continuous assessment of project implementation in relation to design schedules, and the use of inputs, infrastructure, and services by project beneficiaries whereas evaluation is the periodic assessment of a project's relevance, performance, efficiency, and impact both expected and unexpected in relation to stated objectives.

From both definitions we can understand that monitoring is used primarily for internal management and accountability. Project managers and implementers use monitoring information to assess whether the project is on track and identify and correct challenges in a timely manner. Bamberger reflects this conception by defining monitoring as an internal project activity designed to provide constant feedback on the progress of a project, the problems it is facing, and the efficiency with which it is being implemented (Bamberger, Rugh, & Mabry, 2006).

On the other hand, evaluation refers to discrete studies that aim to produce an overall evaluation judgment about the merit, worth or significance of an intervention. In addition, it describes the way things are and analysis of causal relationships. Evaluation findings are intended primarily to inform decisions about a specific intervention but also about future investments and planning (Peersman, Rogers, Guijt, Hearn, Pasanen, & Buffardi, 2016).

Although monitoring and evaluation are essential component of development intervention and are often linked together, the literature discerns a number of differences between the two functions.

Monitoring as depicted in Table 1 is a basic part of project management objectively focus on determining efficiency so as to facilitate an early adjustment, is a continues feedback system, involve tracking of inputs, process, output and work plan, whose result primarily used by project implementers.

Evaluation on the other hand objectively focuses on assessing impact, carried out periodically, and its result usually is used by donors and other stakeholders in future program/project design.

Table 1

Major differences between monitoring and evaluation

Characteristics	Monitoring	Evaluation
Objectives	To control activity implementations To control and determine efficiency. To facilitate an early adjustment	To determine whether objectives set were realistic or not and assess impacts of project activities
Frequency	Continuous, regular, and routine assessment	Periodical, carried out mainly at important milestones of a project, including at the mid and at the end.
Focus	Inputs, process, work plan, activity & output	Relevance, outcome and/or impact and cost-effectiveness
Time horizon	Short term	Midterm and Long term
Primary users	Mainly project implementers	Mainly External such as Government, donors
Type of data	Internal	Internal/external
Analysis	Simple	In-depth & Comparative

Note. From 'Monitoring & Evaluation toolkit for program managers'. Copyright 2001 by UNFPA

In spite of the above differences, both M&E are important and interlinked components of a project management. When evaluation is conducted during project implementation, it complements monitoring since it provides significant feedback to management on the approach adopted, the effectiveness of implementation strategies and the likelihood that the program will achieve its planned results (WFP, 2002). On the other hand, an effective monitoring system will provide the information that will form the core of any evaluation (INTRAC, 2015).

2.1.2. Types of Monitoring and Evaluation

Numerous authors have defined categories of monitoring and evaluation in different ways. The different categorization is made based on different criteria, including: the coverage/scope, timing, the party undertaking the M&E, the focus/purpose, the type of data used, etc. The major types of classification are summarized here under:

2.1.2.1. Classification Based on the Party conducting the M&E

Based on the party which will conduct the M&E activity, it can be classified as Internal and External M&E (IFRC, 2011).

- **Internal M&E** - is built into the design of a project and is undertaken by the team that is responsible for management and implementation of the project. This is done to ensure that the project meets deadlines, stays within the budget and achieves its objectives, activities, outputs and impacts. Findings, recommendations etc of internal monitoring is usually captured in progress reports submitted by project management.
- **External Project M&E** - described in this Guideline, is carried out by an outside team, which is not directly responsible for the management or implementation of the project. External M&E should assess the effectiveness of the internal M&E put in place by the project management team. External monitoring can take place once the project has been completed, and/or during implementation of the project. Findings and recommendations of external monitoring are often documented in a review or evaluation report.

2.1.2.2. Classification Based on the Stage and/or Subject of the Project

As UNICEF (2003) Monitoring activity can be classified based on the stage of the project as Input Monitoring, Activity (Process) Monitoring, Output Monitoring and Outcome (Impact) Monitoring.

- **Input Monitoring** - is the monitoring of the resources that are put into the project – these include budget, staff, skills, etc. Information on this type of monitoring comes mainly from management reports, progress reports and accounting. For example, ways of measuring this can be the number of days consultants are employed, or the amount of funds spent on training and equipment.
- **Activity (Process) Monitoring** - monitors what happens during the implementation of the project and whether those activities which were planned, were carried out. It is a process of routine data collection and analysis in order to establish whether the project tasks and activities are leading towards the intended project results where the information is often taken from the progress report.

- **Output monitoring** - is the focus of this Guideline and is a level between activity and impact monitoring. This type of monitoring assesses the result or output from project inputs and activities. The measurements used for output monitoring will be those which show the immediate physical outputs and services from the project.
- **Impact Monitoring:** - Impact monitoring is a type of monitoring which continually assesses the impact of project activities to the target population. Indeed, impacts are usually the long term effects of a project. However, for projects with a long life span need for measuring impact change in order show whether the general conditions of the intended beneficiaries are improving or otherwise. The assessment is made based on the pre-determined set of impact indicators.

2.1.2.3. Classification Based on timing

Based on the timing of the evaluation, the evaluation activity can be classified as Ex-ante/ Formative evaluation, Interim/Process evaluation, Terminal/ Outcome evaluation & Ex-post evaluation/ Impact evaluation (Kusek & Rist, 2004).

- **Ex-ante/ Formative evaluation:** - ensures that a program or program activity is feasible, appropriate, and acceptable before it is fully implemented. It is usually conducted when a new program or activity is being developed or when an existing one is being adapted or modified.
- **Interim/Process evaluation:** - establishes whether project activities have been implemented as planned. This normally takes place at some point during the life of a program, usually mid-term. It starts by reviewing the activities and output components of the logic model.
- **Terminal/ Outcome evaluation:** - This assesses the progress made towards the achievement of the pre-determined objectives at the end of the program and provides a basis for decisions on future action. To design an outcome evaluation, begin with a review of the outcome components of the program logic model.

- **Ex-post evaluation/ Impact evaluation:** - it assesses program/project effectiveness in achieving its ultimate goals.

2.1.3. Monitoring tools

There are three most widely used communication tools as mentioned by Metalign (2015) which includes progress reports, meetings, and site observation.

- **Progress reports;** progress reports prepared at regular intervals for reviewing of the status of the project. Progress reports enables the assessments of progress and achievements and helps focus on results of activities, enabling the improvement of subsequent work plans . reporting helps from the basis for decision-making and learning at the management level. Reporting communicates how effectively and efficiently a project is meeting its objectives.
- **Review meetings;** regular progress review meetings help managers to inform all the members about the general progress and to identify where and when problems are likely to arise and then to act to prevent them from occurring as much as possible.
- **Site Visits;** site visit is another important means of communication in the monitoring of project activities and output progress site visit is an in-depth gathering of project information for monitoring purpose.

2.1.4. Monitoring and Evaluation system

M&E of projects are increasingly recognized as central management functions for organizations and can be institutionalized in organizations by developing an M&E system, which can be understood as a well-designed and organized system which ensures that the right data are being collected at the right time during and after project implementation and that this data will help to guide project implementation and strategic decisions. It will also ensure that project staff and stakeholders will not be overwhelmed by the amount of data gathered and that a reasonable amount of time and money is being spent in collecting and analyzing data, and collating and reporting the information (Pasanen & Shaxson, 2016).

A more formal definition of a M&E system is a *‘series of policies, practices and processes that enable the systematic and effective collection, analysis and use of monitoring and evaluation information’* (Pasanen & Shaxson 2016).

An M&E system should have the capacity “to develop relevant indicators; to collect, aggregate, analyses and report on the performance data in relation to the indicators developed and their baseline information; and to ensure that management has the relevant skills to make appropriate decisions using the M&E information” (Kusek & Rist, 2004, p. 22). A good M&E system should advocate collaboration between different stakeholders, emphasize ownership to ensure that organization members buy-in to the M&E system, be well maintained and produce credible information (Ile, Eresia-Eke, & Allen-Ile, 2012).

As most of literatures indicated good monitoring and evaluation design have identified main components (Bowden, 1988; PMBOK, 2013; UNDP, 1997; UNICEF, 1991). Among the identified some of them are listed below.

1. Clear statements of measurable objectives for the project and its components, for which indicators can be defined.
2. A structured set of indicators, covering outputs of goods and services generated by the project and their impact on beneficiaries. Each indicator should be:
 - Directly related to the output, outcome or goal listed on the problem tree or log frame.
 - Accurately measurable using either qualitative or quantitative methods, or available resources.
 - Standard indicator is preferable because they are well defined, there are tools available to measure them, and are able to compare results to other programs or national statistics.
 - Useful for decision making to improve the program. There is no point measuring an indicator if the results won’t make any difference to your decisions.
 - Definition of indicators and how the indicator is calculated should be written.

- Tools to measure the indicators must be developed.
3. Provisions for collecting data and managing project records so that the data required for indicators are compatible with existing statistics, and are available at reasonable cost.
 4. Organizational structures with M&E functions: - The adequate implementation of M&E at any level requires that there is a unit whose main purpose is to coordinate all the M&E functions at its level. It is an institutional arrangement for gathering, analyzing, and reporting project data.
 5. Human Capacity for M&E :- An effective M&E implementation requires adequate staff employed in the M&E unit, but also that the staff within this unit have the necessary M&E technical know-how and experience. The M&E capacity of these employees should be continuously developed through training and other capacity building initiatives to ensure that they keep up with current and emerging trends in the field.
 6. Routine Program Monitoring: - Data needs to be collected and reported on a continuous basis to show whether the project activities are driving towards meeting the objectives.
 7. Proposals for the ways in which M&E findings will be fed back into decision making

Therefore, the above components must be compiled to form the Monitoring & Evaluation plan which describes how the whole M&E system for the program works.

2.1.5. Monitoring and Evaluation Approach (Framework)

An M&E framework (approach) is important when developing an M&E system. The framework guides all the processes and activities that occur in the M&E system and acts as a planning tool for M&E processes (Ile, Eresia-Eke, & Allen-Ile, 2012). There are different types of M&E frameworks. As in many literatures indicated a range of frameworks and systems exist for the planning and management of projects. A widely used tool in the development community

(Jensen, 2013) and a framework which can be used for this particular study, is the logical framework approach and the associated Log Frame.

A Logical Framework Approach (LFA) is a project design methodology that provides a systematic structure for identifying, planning, implementing, monitoring and evaluating projects. It enables the main elements of a project to be concisely summarized and brings structure and logic to the relationship between project purpose and intended inputs, planned activities, and expected results (Jensen, 2013).

As World Bank (2004), the Log Frame helps to clarify the objectives of any project, program, or policy and improve the quality of M&E design. It aids in the identification of the expected causal links: inputs, processes, outputs, outcomes, and impact. It leads to the identification of performance indicators at each stage in this chain, looks at the evidence needed to verify these indicators as well as the assumptions that underlie them and the risks which might impede the attainment of results.

The Log Frame is explained and demonstrated through the logic model. This is a way of thinking about how the various components of a project relate to each other to achieve impact and meet goals. The model is illustrated in Figure 2.

The figure shows that specified inputs are used in a project to undertake a series of activities which in turn deliver the output.

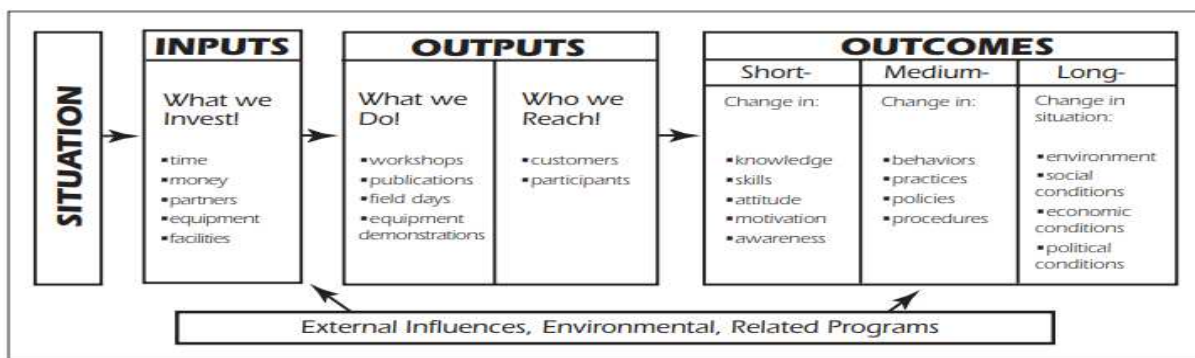


Figure 2. The Generic Log Frame Model (Frankel & Gage, 2007, p.42)

In turn, these outputs are expected to yield certain outcomes. And finally, it is anticipated that projects will generate impacts.

2.1.2.4. How does the Log Frame help with Project Evaluation?

The LF and its PLM can provide useful frameworks and tools for evaluation work. They can be used to demonstrate the role of monitoring, evaluation and impact assessment and the specific points at which M&E should be undertaken in the program or project implementation.

Monitoring work focuses on the progress and tracking of inputs, implementation of activities and production of outputs. Evaluation tends to take place at specific points/stages in a project and permits an assessment of progress over a longer period of time. The focus is on tracking changes in relation to outcomes (with reference to objectives) and impact, in terms of the project goals.

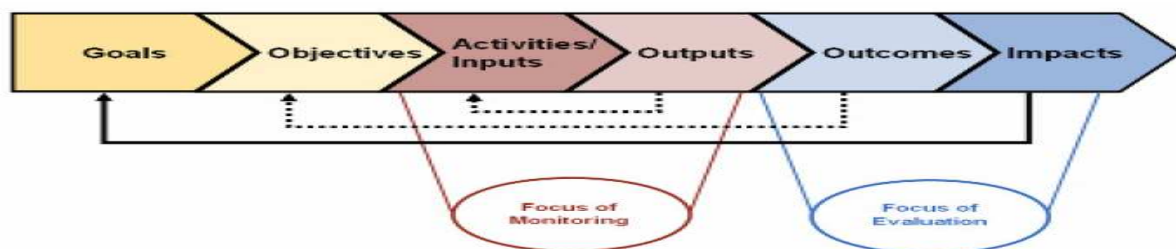


Figure 3. The Place of M&E in the logic model (IFC, GTZ, & DFID, 2008, p. 37)

2.1.2.5. The Logical Framework Matrix Structure

As World Bank (2005) the Log frame can also be presented in matrix format can be a useful way of capturing both the content of a project together with the key components of the M&E plan. It summarizes a project and its key M&E feature in a systematic way showing:

- What the project is going to achieve
- What activities will be carried out
- What means/resources/inputs (human, technical, infrastructural, etc.) are required
- What potential problems could affect the success of the project

- How the progress and ultimate success of the project will be measured and verified

A log frame has four basic levels and four columns, each of which relates to a specific crosscutting function.

Table 2

The Logical Framework Matrix Structure

1. Project summary	2. Objectively Verifiable Indicators	3. Sources and Means of Verification	4. Assumptions
1. Overall Objectives/ Impact The shared vision that your project contributes to	The extent of your contribution (not always possible)	How you will measure your contribution (not always possible)	
2. Specific Objective/ Outcome What you intend to change during project period	How you will know the intended change has occurred and is sustainable	How you will measure change (the basis for evaluation)	Assumptions about external factors that need to be in place if project is to contribute to the overall objective/ impact
3. Expected Results/ Outputs Tangible results of each activity intended to bring about change	How you will know the expected results of your project have been achieved	How you will measure results (the basis for periodic review)	Assumptions about external factors that may affect whether the specific objective/ outcome is achieved
4. Activities (and processes) Groups of tasks needed to achieve each expected result	The means, inputs and resources needed to carry out each task	Proof that each activity/task completed (what needs to be regularly monitored)	Assumptions about external factors that may affect activities achieving the expected results/ outputs Preconditions (that need to be fulfilled before the project can start)

Note. From ‘The logical framework approach’. Copyright 2013 by Bond for International Development

The matrix includes performance indicators, sometimes called Objective Verifiable Indicators (OVIs), the Sources of Verification for those OVIs, and the assumptions and risks considered that could work against achieving the objectives.

2.1.6. Common Challenges in M&E

M&E function is both cross functional and cross-disciplinary; this coupled with the different interest of parties involved in the process, conducting effective M&E faces different challenges. These challenges may arise during and/or as a result of implementing an M&E system. Different

literatures identify the following challenges when institutionalizing an M&E system (Acevedo, Katia, Lima & Hwang, 2010); Mthethwa, 2016).

- M&E systems are often centralized and follow a top-down approach. This results in program managers perceiving M&E as a way for government to control the tasks performed by managers;
- M&E systems are mostly imposed on government departments and, as a result, officials are not aware of their M&E tasks, there is a lack of M&E buy-in by officials and there is a lack of concern for the quality of M&E data being produced in the organization;
- A centralized approach to M&E may result in stakeholders and staff performing their M&E tasks merely to comply with the national mandate, rather than performing M&E tasks to improve project implementation and project effectiveness;
- M&E information seeks to influence decision-making and inform future planning by learning from past experiences but this rarely happens. M&E information is, instead, merely collected and stored;
- Most M&E plans and strategies fail to identify the relevant stakeholders needed for M&E. This results in a misunderstanding/misconception of the uses and purposes of M&E information;
- Many officials view M&E practice as the sole responsibility of the M&E practitioner and do not expect themselves to make and perform any M&E related tasks;
- Project staff and stakeholders do not understand the reports provided by M&E personnel and often complain that reports are too long, unclear and often come too late;
- Project managers perceive M&E as a threat and they are sometimes reluctant to compile and submit progress reports of their projects and to use evaluation recommendations to improve their project's performance.

M&E challenges arise from the lack of understanding of what M&E entails, which limits people's understanding of their M&E related tasks. Misconceptions of M&E results are major challenges that hinder any M&E system from being fully operational.

2.2 Empirical Review

There is vast M&E literature based on empirical studies from across the world. However, M&E studies on construction projects has been less well reported. A few researches in the area have explored the comparison of M& E system among construction projects.

The study conducted by Umugwaneza & Kule (2016) determined “The role of monitoring and evaluation on project sustainability of development projects” in Rwanda. Their result indicates that, there is a significant positive relationship between accountability, effective communication, partnership for planning and supportive supervision have a positive effect on sustainability of projects in Rwanda. They also found that 98% of the variations in sustainability of projects in Rwanda can be explained by variations in monitoring and evaluation whereas 2% of the variations in sustainability of projects in Rwanda can be explained by other factors. The study recommended for further study on the factors influencing utilization of Monitoring and evaluation of projects in other regions so as to allow for generalization of role of Monitoring and evaluation of projects in Rwanda.

From the Kamau & Mohamed (2015) study using literature review approach analyze “The factors related to M&E influencing project success” In Kenya. During the analysis all factors related to M&E functions were identified and grouped into four main categories which are: Strength of M&E team, monitoring approach adopted, political influence and project lifecycle stage.

The research has identified various issues which when applied appropriately would strengthen the monitoring team. These issues include financial availability, number of monitoring staff, monitoring staff skills, frequency of monitoring, Stakeholders representation, Information systems or use of technology, Power of M & E Team and teamwork.

Regardless of the approach, the research has identified that the effectiveness of the M&E is dependent on the selected approach. It also indicated that project management plays a key role and hence a proper emphasis must be placed in selecting the project team that ensures proper decision making at various stages of project life cycle, and results in timely project completion and hence project success. And this selection of project team includes the monitoring and evaluation team.

A study made by Tengan & Aigbavboa (2017) on “Level of Stakeholder Engagement and Participation in Monitoring and Evaluation of Construction Projects” in Ghana shows that there was a high level of stakeholder engagement in project delivery while participation of stakeholders in monitoring and evaluation of public projects at the local government level was very poor. This was attributed to lack of knowledge, understanding, involvement and time devoted for monitoring and evaluation of projects by stakeholders. Therefore, the study has concluded that, the poor participation of stakeholders in monitoring and evaluation of local government project delivery have contributed to the many challenges faced in local government project delivery in Ghana. These challenges included procurement lapses which resulted in bad payment schedules, non-conformity to project specification, delayed project delivery, lack of health and safety compliance, client's dissatisfaction, and corrupt practices in the construction industry. The study advocates for participatory monitoring and evaluation through stakeholder management at the local government level project delivery.

In Ethiopia, Lencha (2013) made studies on “Rural Water Supply Management and Sustainability” in Adama area in Central Ethiopia. The study aimed at assessing issues such as community participation, water committee empowerment, management and governance of water supply schemes, functional status of water supply scheme, external support, and Monitoring and Evaluation system of water supply schemes, whereas both Qualitative and quantitative data were collected from 4 samples of water schemes and a total of 148 representatives households and the findings, revealed that, the rate of community participation and implementation of water supply schemes was very good but the collection and control mechanisms as well as management of Monitoring and evaluation of the operation and management of the schemes were still very poor. The study lastly recommended on the provision of trainings and refresher training in order to scale up the capacity of water committee to manage the water schemes properly.

Specific to the construction sector, Abebe (2015) conducted a study on “Assessment of Construction Project Planning, Monitoring and Evaluation Practice” at Defense Construction Enterprise. This study examines the construction project planning, monitoring and evaluation practice at defense construction enterprise. The study applies descriptive method and among the conclusions is that the enterprise project planning, monitoring and evaluation team do not have the practice of formally evaluating each progress report and give feedbacks, but the reports

include all the necessary information for evaluation and problems that need management especial attention is also included. It was also revealed in the study that DCE does not have well organized and integrated project evaluation system. The enterprise evaluates projects every quarter based on their own reports in management meetings without planned site observation report and procurement progress report.

Table 3

Summary of Relevant Empirical Studies on M&E

Research Title and Author(s)	Research Objective	Method	Result
The role of monitoring and evaluation on project sustainability in Rwanda by Umugwaneza & Kule (2016)	To examine how partnership for planning influences the sustainability of projects in Rwanda; To ascertain the effect of supportive supervision to the sustainability of projects in Rwanda; and to establish relationship between accountability and the sustainability of projects in Rwanda.	Descriptive research design	There is a significant positive relationship between accountability, effective communication, partnership for planning and supportive supervision have a positive effect on sustainability of projects in Rwanda. 98% of the variations in sustainability of projects in Rwanda can be explained by variations in monitoring and evaluation whereas 2% of the variations in sustainability of projects in Rwanda can be explained by other factors
Efficacy of Monitoring and Evaluation Function in Achieving Project Success in Kenya by Kamau & Mohamed (2015)	To identify the determining the critical success factors (CSFs) which contribute to project success.	Literature review approach	Project success factors were identified and grouped into four main categories which are: Strength of M&E team, monitoring approach adopted, political influence and project lifecycle stage.
Level of Stakeholder Engagement and Participation in Monitoring and Evaluation of Construction Projects in Ghana by Tengan & Aigbavboa (2017)	To identify the level of stakeholder s engagement in project delivery and participation in monitoring and evaluation of public construction projects in Ghana.	Descriptive research design	The poor participation of stakeholders in monitoring and evaluation of local government project delivery have contributed to the many challenges faced in local government project delivery in Ghana.
Assessment Of Construction Project Planning, Monitoring And Evaluation Practice At Defense Construction Enterprise by Abebe (2015)	To examine the construction project planning, monitoring and evaluation practice at defense construction enterprise	Descriptive research design	The enterprise project planning, monitoring and evaluation team do not have the practice of formally evaluating each progress report and give feedbacks, but the reports include all the necessary information for evaluation and problems that need management especial attention is also included

Note. -Researcher's Summary

2.3 Conceptual frame work

According to Kombo & Tromp (2006) a conceptual frame work is a set of a broad ideas and principles taken from relevant field of inquiry and used to measure a subsequent presentation. It must explain the relationship among interlinked concepts and also they explain the possible connection between the variables and answers the why questions. Fisher (2010), on the other hand, perceive it as a 'map' that draws together the concepts that students will use to guide their research and suggests how they are related. Fisher added that the conceptual frameworks are normally modification and development of model and theories found in the literature.

Accordingly, this study is guided by the framework (see figure 3) below, the underlying assumption being the presence of the factors which affect the M&E system to bring its effectiveness and ultimately ensure project effectiveness. The framework also reflects the central role played by communication.

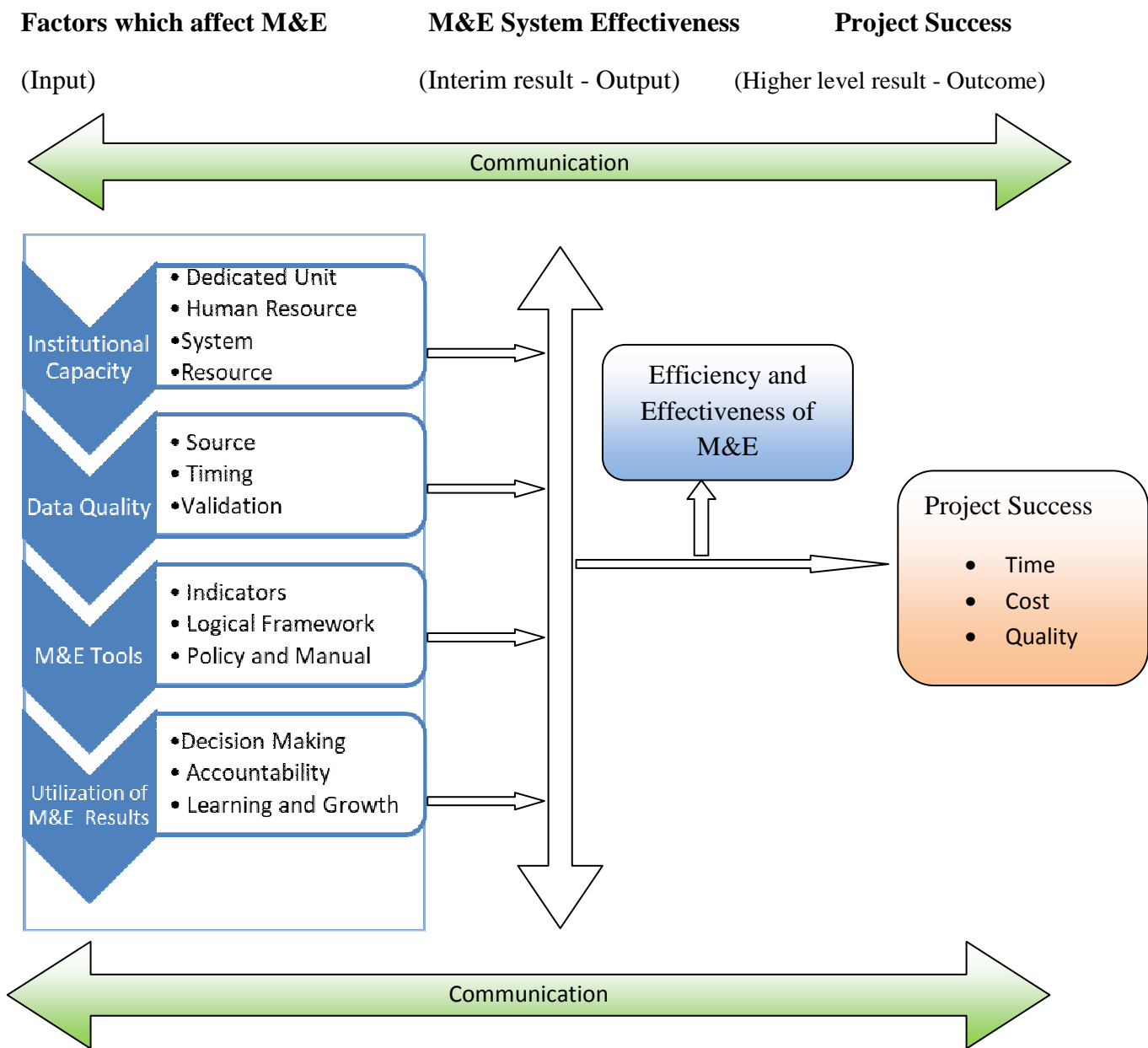


Figure 4. Conceptual Framework (Kamau & Kamau, 2015, p.92)

Chapter Three

Research Design and Methodology

This chapter is a review of the various approaches to data collection and analysis adopted in conducting this research; it explains the type of research strategy adopted the mode of data collection and the methodology used in carrying out this research. It includes the research design, sample size and sampling technique, data source and collection method, procedure of data collection, method of data analysis and questionnaire reliability test is presented.

3.1 Research Design

The study is conducted through a descriptive research design focusing on the current M&E practice of Ethiopian Roads Authority. According to Mason, & Bramble, (1989), a descriptive research involves gathering data that best describes a situation, tabulating the data and describing the data collection methods; the use of charts and graphs best assist in understanding the data distribution.

3.2 Source of Data and Collection methods

The data used is qualitative data. The source of data used in this study is primary and secondary data sources. The primary data is collected from respondents by interview and semi structured questionnaire as well as from direct observation. The secondary sources of data obtained from Reports, Working Formats and other documents of the organization.

3.2.1 Instruments for Data Collection

In this research, the instruments employed for data collection are interview, questionnaire which is adopted from () and modified, and observation.

3.2.1.1 Questionnaire and Interview

Questionnaires are the most cost-effective instrument for data collection, they avoid interviewers bias in the process of data collection. For this research the questionnaire used is adapted from (Holvoet & Inberg, 2014). Questions used on the questionnaire are close ended questions.

Regarding to the data collection from key officials and administrators' interview is an instrument for data collection. The data collected using interview strengthens the data collected from questionnaires. Interviews are effective method of data collection regarding respondent's reaction insights, prospects, and interpretations of relevant conditions (Khan, 2014). Interview is the most flexible and effective method to get information from key respondents. In this research key informant interview was made with individuals who are responsible for the general project/program planning and M&E process of the authority.

3.3 Population and Sample Size

3.3.1 Population

The target Population refers to the entire group of people; event or organizations that a researcher wants to study. Hence 200 staffs, who are engaged in the Project planning, project implementation as well as staffs who are responsible for monitoring & evaluation of projects are the target population.

The project/ program planning unit consist of 30 individuals, when it comes to the project implementation, the projects are managed by seven Contract Management Directorates. Similarly, the maintenance projects are managed by the ten Road Network and Maintenance Contract Management Directorates. Within each directorate there are 7-10 individuals. And finally, the M&E unit consists of 10 individuals. These make the total target population 200.

3.3.2 Sampling Techniques/Procedures

The individuals who are involved in project delivery are heterogeneous in their respective responsibilities. Therefore, the type of sampling technique used is a probability sampling technique which is Stratified Sampling techniques.

3.3.3 Sample Size Determination

In order to define the sample size, Slovin's formula is applied. Slovin's formula allows a researcher to sample the population with a desired degree of accuracy (Stephanie, 2013). With regard to the level of accuracy, we used a confidence level of 95% as suggested by Kothari (2004), this means that there are 95 chances in 100 (or .95 in 1) that the sample results represent

the true condition of the population within a specified precision range against 5 chances in 100 (or .05 in 1) that it does not.

Slovin's formula;

$n = N / (1 + Ne^2)$, where n is number of samples, N is total population and e is error tolerance level.

Therefore, taking the confidence level as 95%, $e = 0.05$ and the sample size of this research is

$$n = 200 / (1 + 200 * 0.05^2)$$

$$n = 133$$

With respect to specific responsibilities of work units, three work units are selected. These are work units that are engaged in project/ program planning, Project implementation and Monitoring & Evaluation of projects. And each work unit is considered as a stratum.

Among the types of stratified sampling technique, proportionate Random Sampling technique is used. This helps the sample size of each stratum to be proportionate to the population size of the stratum when viewed against the entire population.

Accordingly, in this research there are 3 strata (project/program planning, Project implementation and Monitoring & Evaluation) with 30, 160 and 10 population sizes respectively.

Sample for each stratum is calculated by;

$$\text{(Size of each stratum * sample size) / Target population.}$$

And the sample size from each stratum is 20, 106 and 7 individuals from each stratum respectively. And Among these strata respondents were selected randomly.

With regard to the key informant interview, 2 individuals who are responsible for the general project/program planning and M&E process of the authority are selected and interviewed.

3.4 Validity and Reliability

According to Mugenda and Mugenda (2003), validity is a measure of relevance and correctness. It is the accuracy and meaningfulness of inferences which are based on the research results whereas Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials.

To ensure validity, key experts in the sector reviewed the questionnaires to confirm the data that is collected represent the content that it is design to measure. The researcher also consciously avoided unnecessary jargons to ensure that the respondents understand them easily. The instruments are also prepared in close consultation with the supervisors, whose expert judgment helped improve content validity.

Moreover, reliability test was made for questions with Liker Scale responses using Cronbach's Alpha. And the test result shows that for both tests the result is above ≥ 0.7 . This show the inter correlation among tested items.

Table 4

Reliability Test

Reliability Test	Reliability Statistics		
	Cronbach's Alpha	Cronbach's Alpha based on standard	No. Items
Reliability Test to M&E Practice Related questions	0.980	≥ 0.7	7
Reliability Test to Challenges Related questions	0.996	≥ 0.7	10

3.5 Data Analysis and Presentation

This is the process of collecting, modeling and transforming data in order to highlight useful information, suggesting conclusions and supporting decision making (Manoharan, 2009). Before processing the responses, the completed questionnaires were checked for completeness and comprehensibility to ensure consistency. The data is then summarized, coded and entered into

the Statistical Package for Social Sciences (SPSS) version 21 for analysis to enable the responses to be grouped into various categories.

Descriptive statistics entailing frequency distribution is used to analyze the data. Data presentation is also done by the use of percentages and frequency tables. This ensured that the gathered information is clearly understood.

3.6 Ethical considerations

The researcher first obtained data collection authorization from ERA. Respondents are also presented with consent forms. The consent form described the type of study being done, its purpose, rights of all participants with special emphasis on participant's confidentiality and the right to withdraw from the study as deemed necessary. The researcher also assured the participants of confidentiality of their information by asking them not to include their names or any form of identification on the questionnaires. The researcher also organized for preliminary visits to the project field officers to verbally explain the purpose and importance of the study and predict some challenges that would come with data collection.

Chapter Four

Data Analysis Result and Discussion

4.1. Result and Discussion

As indicated previously, the analysis in this section mainly relies on the primary data collected using structured questionnaire and key informant interview as well as secondary data from the different documents of the Authority.

4.1.1 General Characteristics of Respondents

Looking at the characteristics of respondents, among the 133 respondents identified using random sampling technique, 106 (80%) of them are male and the rest 27 (20%) are female. Based on age group, 40% of them are in the age range of 26 – 35 years, 50% of them are in the age range of 36 – 45 years whereas the remaining 10% are in the range of 46 -55 years.

In terms of the level of education, 56% of respondents are degree holders and the remaining 44% have Masters and above.

Table 5

*Cross Tabulation of Respondents work experience * Respondents job title*

		Respondents job title			Total
		Middle management	Senior Expert	Junior expert	
Work Experience	Less than 5 years	0	9	25	34
	5-10 years	0	9	8	17
	10-15 years	37	31	0	68
	Above 15 years	6	0	8	14
	Total	43	49	41	133

Note. Own Survey, 2018

As indicated in the above table, among the 133 respondents 37 of them are middle managers and 31 of them are senior experts with 10 years and above work experience.

With regard to respondents' involvement in monitoring and evaluation of any project/program of the Authority, 113 respondents (85%) replied they directly involve and out of these staffs, 78 (69%) of them received formal training on M&E.

Table 6

*Cross Tabulation of Respondents involvement in conducting monitoring and evaluation *
Formal training received by respondents on M&E*

		Formal training received by respondents on M&E		Total
		Yes	No	
Respondents involvement in conducting monitoring and evaluation	Yes	78	35	113
	No	5	15	20
	Total	83	50	133

Note. Own Survey, 2018

4.2.1. Responsible unit for M&E

As per the information received from the Key Informant, Director of Planning and Program Management, the M&E team is under Planning and Program Management Directorate of the Authority which is accountable to Planning and ICT Deputy Director General. The team is composed of about 10 Economists, including the Team Leader. However, the M&E team is not the only unit responsible to the M&E activities in ERA. This team is only responsible to compile the M&E results centrally and give organizational picture. Otherwise, project level day to day follow up and monitoring is mainly undertaken by the work units which are actually managing the projects.

When it comes to the project implementation, the projects are managed by seven Contract Management Directorates. Similarly, the maintenance projects are managed by the ten Road Network and Maintenance Contract Management Directorates dispersed all over the country. Moreover, projects of different nature (projects under procurement, technical assistance projects, service projects, etc.) are monitored by the units where the projects are.

The above discussion implies project implementation, follow up and monitoring is distributed among different units in the Authority and this coupled with the many (more than 200) ongoing projects makes the M&E activity not only dispersed but also tough.

4.2.2. Main Drivers of M&E

In order to identify the main driver for conducting monitoring and evaluation in the Authority, seven common M&E driving factors were selected and respondents were asked to rate them based on Likert scale.

Table 7

Main driver of conducting M&E

No.		Most + More		Average		Less + Least		DK	
		No.	%	No.	%	No.	%	No.	%
1.	To check progresses of Projects	125	94	8	6	-	-	-	-
2.	To check Projects meet their intended purpose	117	88	8	6	8	6	-	-
3.	To ensure cost efficiency	100	75	7	5	8	6	8	6
4.	To enhance trust among Employees, Government & Donors	75	56	39	29	2	1.5	17	13
5.	To prove Transparency & Accountability	72	54	53	40	8	6	-	-
6.	To learn from experience	63	47	40	30	30	23	-	-
7.	To evaluate staff, build reward & training plan	29	22	41	31	48	36	15	11

Note. Own Survey, 2018

As can be seen from the above table, the analysis shows that among the seven drivers of M&E the first two factors are highly rated. These are checking progresses of Projects and checking that Projects meet their intended purpose. Both factors are the most agreed driving factors which respondents have given a weight of 94% and 88%, respectively.

This fact is also verified from the findings of secondary data. The Authority M&E report is compiled mainly focusing on the physical performances of the projects and aimed at completing the project in order to achieve their intended purpose.

4.2.3. Project Targets

As most of literatures indicated good monitoring and evaluation design have identified main components. Among the identified, clear statements of measurable objectives/Targets for the project and its components, is the one which indicators can be defined.

As the interviewees explained, Project targets are set by the projects contract. The contract clearly indicates the project start and end time; accordingly, it also sets continuous targets in the work program. However, ERA's annual target are set by the Top Management based on the available budget for the year which may contradict with the contract, making the monitoring and evaluation work complicated and difficult.

4.2.4. Monitoring & Evaluation Approach

A Logical Framework and its associated Performance Indicators are a project design methodology which helps to systematically identify, plan, implement, monitor and evaluate projects.

Hence, it is tried to assess the M&E approached used by the Authority and as the information given by the interviewees showed that, ERA doesn't use the logical frame work as a standard framework whereas there are a few areas and times the framework has been applied. The justification given for not using the framework is the big number of projects available.

With regard to Performance indicators, there are list of identified and defined indicators, especially in the monitoring and evaluation practice by external parties (consultants). These categorized as performance indicators and impact/outcome indicators or the MDG indicators.

4.2.5. The Extent and Coverage of M&E in ERA

The extent and coverage of M&E in ERA is assessed in terms of the level of the M&E practiced in the Authority as well as the work units covered in the process. Accordingly, out of the 133 respondents, 49% of them have answered that all Process Monitoring, Mid Term Monitoring, Output Evaluation and Impact Evaluation are applied. Besides this, 50% of them answered that the extent and/or coverage includes project, program & organizational level, 29% answered that it is only at project level and 16% of them believed that it is at Project & program level.

Practically as the researcher understood from secondary data and physical observation of the reports produced, the M&E extent and coverage seems comprehensive which includes project, Program and organizational level issues. In fact, it gives more emphasis for project and programs. And among the types of M&E reports produced as a result of the process, the following are worth mentioning:

- Monthly, quarterly, bi-annual, and annual physical and financial performance reports;
- Financier (Donor Specific) reports;
- Site visit reports;
- RSDP and SDG Performance reports;
- Program (project) mid-term reviews/evaluations;
- Project (implementation) completion missions and reports;
- Project/corridor/program based Impact Evaluation Studies;

In the table below, it's tried to cross tabulate respondents' job title, types of M&E report and the extent of M&E practice which may show the level of communication of M&E reports. Accordingly, among the 133 respondents, only 41 of them have the right information about both the extent and coverage of the M&E practice. And this shows that the results of M&E are not well communicated and hence may imply gap in utilization of same effectively.

Table 8

*Cross Tabulation of Respondents job title * Types of M&E practiced * Extent of M&E system practiced*

Scope (Coverage) of M&E system practiced			Extent of M&E practiced					Total	
			Process monitoring	Process monitoring, Midterm evaluation & output evaluation	Process monitoring & midterm evaluation	Process monitoring & project completion	All		Do not know
Project level	Respondents job title	Middle management	-	7	-	7	0	0	7
		Senior Expert	-	5	-	5	4	0	14
		Junior expert	8	-	-	-	0	9	17
	Total		8	12	-	12	4	9	38
At organizational level	Respondents job title	Junior expert	-				7		7
	Total						7		7
All	Respondents job title	Middle management	9	-	-		19	0	28
		Senior Expert	1	-	8		13	0	22
		Junior expert	-	-	-		9	8	17
	Total		10	-	8		41	8	67
Project level & program level	Respondents job title	Middle management		-			8		8
		Senior Expert		8			5		13
	Total			8			13		21
Total	Respondents job title	Middle management	9	7	-	7	27	0	43
		Senior Expert	1	13	8	5	22	0	49
		Junior expert	8	-	-	-	2	2	41
	Total		18	20	8	12	16	17	133

Note. Own Survey, 2018

4.2.6. Types of Monitoring & Evaluation Tools

Regarding the application of M&E tools, respondents were asked whether institutional M&E guideline were followed when conducting M&E and also the application of software. Among the 133 respondents 104 (78%) of them answered that they follow guidelines (manual) when conducting M&E whereas 91% of them use software (program). According to the respondents, the majority use Excel sheet.

As it is verified by observation, the Authority has specific guideline and manual related to project management, and specially planning and M&E manual is part of the package. With regard to the application of software, the results of the questionnaire has positive implication for automation but it is also an indication for the need for centralized automation system which will facilitate the M&E system and make communication very easy.

4.2.7. Level of Participation in the M&E System and Practice

In order to know the level of participation of stakeholders in the M&E system of the Authority, respondents were asked their views. The assessment on the level of stakeholders participation is grouped into internal, external (project actors) and beneficiaries.

Accordingly, majority of the respondents believe that the Authority M&E system is participatory among the internal and external stakeholders. But in the case of participating beneficiaries it is not satisfactory.

4.2.8. Challenges of the M&E system and Practice

As indicated in the literature review, since M&E function is both cross functional and cross-disciplinary function plus the presence of different parties involved in the process, conducting effective M&E faces different challenges. In the case of ERA, lists of common challenges were given to the respondents to rate their experiences based on likert scale.

From the outset, majority (81%) of respondents believe there is/are some sort of difficulty (challenge) during the implementation of M&E in ERA. Going further, the respondents were

requested to identify and rate the common types of challenges experienced in the Authority and their views is depicted in the table below.

Table 9

Experienced challenges in M&E system and Practice of ERA

No.		Most difficult		More difficult		Average		Less difficult		Least difficult		Mean
		No.	%	No.	%	No.	%	No.	%	No.	%	
1.	Challenges in using tools & methods	21	16	50	38	9	7	6	5	7	5	3.77
2.	Challenges in having insufficient staff	32	24	28	21	18	14	6	5	17	13	3.51
3.	Challenges in having gap on knowledge and experience of experts	19	14	34	26	17	13	23	17	16	12	3.16
4.	Challenges in experiencing delays of information or data from work units	31	23	53	40	10	8	8	6	7	5	3.85
5.	Challenges on having low quality of data from reporting units	33	25	57	43	19	14	9	7	15	11	3.63
6.	Challenges on limited awareness of M&E	29	22	27	20	26	20	10	8	17	13	3.38
7.	Logistics problem	23	17	40	30	14	11	9	7	6	5	3.71
8.	Challenges on having lack of coordination & interface among work units	23	17	12	9	34	26	25	19	9	7	3.15
9.	Challenges on having number of reports	33	25	-	-	19	14	-	-	48	36	2.7
10.	Challenges on having insufficient support from management					26	20	21	16	53	40	1.73
Weighted Average Mean												3.26

Note. Own Survey, 2018

The finding from the analysis done on the data collected based on Likert scale, as shown on the above table shows that the weighted average mean 3.26, which indicates that the challenges on the M&E practice of the Authority tends to be more than the Moderate expected mean 3. The weighted average mean calculated on the data collected based on Likert measuring scale 3.26 shows the challenge in the M&E practice is stronger than the average. This figure shows there should be more emphasis in addressing the challenges.

Among the common 10 listed challenges three of them are highly rated. 68% of respondents believe that there is a challenge of getting good quality of data from reporting units, 63% of respondents expressed that there is a delay of information or data from work units whereas 54% of them believe that there is a difficulty in using M&E tools & methods. Except the last three challenges, the remaining challenges have stronger mean value which is much greater even from the weighted average mean.

This result is also further substantiated by the interviewees as “there are different forms of challenges, including data/information related, interface/coordination problem as well as capacity gaps. There are also gaps in implementing efficient M&E systems supported by ICT.”

4.2.9. Utilization and Effectiveness of M& Results

Most available literatures remarked that the effectiveness of an M&E system is ensured not only by its findings and information but also by the utilization of these findings. And the utilization of these M&E findings depends on how the findings are documented, whether the findings are compiled as lesson learnt for future use, how easy is accessing these findings both by the internal and external stakeholders, and how often these findings are referred in the case of decision making. Based on these facts respondents were asked to express their views.

Among the respondents, 93 (70%) of them answered that the M&E findings are well documented and only 38 (29%) believed that the findings are compiled as lesson learnt. With regard to utilization of M&E finding for decision making and organizational development, 85% percent of

the respondents agree that the findings are used for decision making but only 44% percent believe that the findings are used for organizational development.

Table 10

Utilization of M&E Result

No.	Utilization of M&E Result	Yes		No		Do not know		No response	
		No.	%	No.	%	No.	%	No.	%
1.	M&E findings are well documented	93	70	17	13	22	17	1	8
2.	M&E findings are compiled as lesson learnt	38	29	51	38	35	26	9	7
3.	Utilization of M&E findings for decision making	113	85	11	8	9	7	-	-
4.	Utilization of M&E finding for organizational development	58	44	35	26	38	29	2	2

Note. Own Survey, 2018

When enquired about the extent to which M&E findings are accessible and referred, 55% of the respondents rated the accessibility of the findings as average and 50% of them believed that the findings are mostly referred.

Among the factors that can strengthen the M&E system of an organization and hence affect its effectiveness, the knowledge & experience of the staffs involved in the M&E, the content of the M&E reports produced, the agreed standards of the report, the feedback provided by the M&E report etc, are worth mentioning.

As shown in the table below, the finding from the analysis done on the data collected based on Likert scale, shows that the weighted average mean 4.07, which indicates that majority of respondents agree that the Authority has stronger M&E practice which is greater than the expected mean 3.

Accordingly, 99% of the respondents reflected that the Authority has a standard M&E report format and a fixed report submission date whereas in terms of the content of the report, 94% of the respondents agreed that the report includes the necessary information for decision making.

Regarding the capacity of staffs involved in the M&E, only 39% of the respondents believe that they have the required knowledge and experience.

In conducting a formal management meeting on the findings of M&E report of projects progresses, only 56% of the respondents agree that the meeting is conducted regularly whereas 77% of respondents agree that feedbacks are provided and the provided feedbacks support the projects. This finding is further confirmed by the key informants as well as verified with observed minutes of meetings for weekly regular assessment of the physical action plan. These meetings mostly involve the Top Management and concerned Middle Level Management.

The key informants expressed that the weekly assessment by the Management enabled ERA to address problems encountered in the implementation of annual action plan sooner rather than later. Especially, the weekly management meeting enabled ERA to follow up sensitive issues closely and helped to promote team spirit.

Moreover, the key informants mentioned that BSC is being implemented in ERA in which core team and sub teams assess progress in the implementation of their action plan and address problems encountered in daily meeting and enabled to address problems timely.

Table 11

M&E Practice of ERA

No.		Strongly Agree		Agree		Average		Disagree		Strongly disagree		Mean
		No.	%	No.	%	No.	%	No.	%	No.	%	
1.	Standard report format	82	62	49	37	-	-	-	-	-	-	4.63
2.	The report format includes necessary information for decision	44	33	81	61	-	-	-	-	-	-	4.35

No.		Strongly Agree		Agree		Average		Disagree		Strongly disagree		Mean
		No.	%	No.	%	No.	%	No.	%	No.	%	
3.	Having fixed report submission date	41	31	68	51	14	11	8	6	-	-	4.08
4.	People involved in M&E have knowledge & experience	24	18	28	21	63	47	16	12	-	-	3.46
5	Reports produced by M&E unit provide sufficient information to follow & evaluate projects progress	54	41	40	30	37	28	-	-	-	-	4.13
6.	The management has regular formal meeting for M&E the project progress	42	32	32	24	40	30	-	-	8	6	3.68
7.	M&E report provide feedback to support projects	66	50	34	27	-	-	13	10	8	6	4.13
Weighted Average Mean												4.07

Note. Own Survey, 2018

4.2.10. Overall Perception of the M&E Environment and Task

In explaining M&E practice of ERA, only 16% of respondents agreed that the M&E practice is smooth and enjoyable. Out of the remaining 84% respondents, 24% believe that it is difficult and boring and 60% of them can't comment the practice which may have its own implication. By cross tabulating this variable with the staff involvement in the M&E practice of the Authority, it is identified that from 113 persons who are directly involved in the M&E system only 21 are enjoying their practice.

Table 12

*Respondents involvement in conducting M&E * M&E practice Cross tabulation*

		M&E practice			Total
		Difficult & Boring	Smooth & Enjoyable	Cannot comment	
Respondents involvement in conducting monitoring and evaluation	Yes	32	21	60	113
	No	0	0	20	20
	Total	32	21	80	133

Note. Own Survey, 2018

For further investigation again this variable is cross tabulated with the highly rated (by the respondents) experienced challenges of the Authority which may show the reason for the dissatisfaction of the staffs on the M&E practice. And this shows that, among the people who commented that the M&E practice is boring or difficult to comment, on average 65% have replied for the previously discussed highly rated challenges. And this may show that there is some relationship b/n the variables.

Table 13

*Cross tabulation of challenges of M&E * M&E practice*

Challenges		M&E practice			Total
		Difficult & Boring	Smooth & Enjoyable	Cannot comment	
Use of M&E tool & methods	Most+ More difficult	32	10	30	72
Delay of data	Most+ More difficult	21	19	44	84
Low quality data	Most+ More difficult	22	13	48	83

Note. Own Survey, 2018

Further, this variable is cross tabulated with respondents work experience which may indicate another direction of relation as indicated in table 14.

Table 14

Cross Tabulation of Respondents Work Experience M&E Practice*

Challenges		M&E practice			Total
		Difficult & Boring	Smooth & Enjoyable	Cannot comment	
Respondents work experience	Less than 5 years	0	15	19	34
	5-10 years	0	4	13	17
	10-15 years	32	2	34	68
	Above 15 years	0	0	14	14
	Total	32	21	80	133

Note. Own Survey, 2018

As can be seen from the above table, the overall result shows that among 112 respondents who said that the M&E practice is boring or difficult to comment, 66 (59%) are with work experience of 10 -15 years implying even after more than 10 years of experience, people working in the M&E think that the task is either boring or they cannot comment about it. This in turn may imply the concern in the area and need further assessment of the issue.

4.2. Summary of Findings

This research has been undertaken mainly to review the M&E practice of Ethiopian Roads Authority. Based on the established Conceptual Framework of this research, the M&E practice of the Authority is assessed from four basic M&E variables. These variables are Institutional Capacity, Data Quality, M&E tools and Utilization of M&E Results. These variables are among the variables which ensure the efficiency and effectiveness of the M&E practice of an organization. However, having these M&E variables did not assure the efficiency and effectiveness of the M&E system but it should be well communicated. Based on the analysis and the discussion the following points are summary of the findings.

Institutional Capacity

The M&E institutional capacity of an organization is mainly depends on having a dedicated M&E unit, well staffed and trained human resource, an organized system and allocated resource to run the M&E activity.

Based on previously discussed findings, the Authority under assessment has a dedicated M&E unit. With regard to the volume of the M&E staff, which is 10 individuals in the M&E unit, it is incomparable with the projects that the Authority is running (more than 200 Projects).

However, it cannot be concluded that the M&E Practice of the Authority is undertaken by this limited staff number since this activity is not an activity only given to the M&E unit. As results show, majority of project participants are involved in the M&E practice of the Authority. This can be taken as good practice of M&E as well as project management.

Even though results show majority of individuals involved in the M&E practice have received formal training in M&E, capacity gap in the M&E practice is one of the main challenges of the system.

With regard to factors strengthening M&E system of an organization the Authority has standard reporting formats and fixed report submission dates which implies that the effort made to build the M&E system as a culture.

However, Project level day to day follow up and monitoring is mainly undertaken by the work units which are actually managing the projects. And from this we can deduce that project implementation, follow up and monitoring is distributed among different units in the Authority and this coupled with the many (more than 200) ongoing projects makes the M&E activity not only dispersed but also tough. More over the centrally dedicated M&E unit responsibility is limited to compile the M&E results centrally and give organizational picture. This shows that even though the Authority has a dedicated M&E unit and all project stakeholders are part of the M&E activities and efforts are made to strengthen the M&E culture, the system is not well organized and is difficult to achieve the M&E goal.

Data Quality

As data quality is the basic component of good M&E practice, it is tried to measure from source, timing and validation of the project data. As results show sources of data for the M&E activities are responsible work units. Moreover, having timely data from respective work units is one of the highly rated challenges in the M&E practice of the Authority. Since the responsibility and practice of dedicated M&E unit is limited to report compilation, and the data for the M&E practice is only one source (work units), it can be concluded that there is no data validation system.

M&E Tools

In the effort made to identify the M&E tools practiced in the Authority, is found that the Authority doesn't use any specific approach consistently. However, from the assessment of

available documents and the information obtained from the key informants, it is difficult to conclude the Authority is totally ignorant and has never used approaches like Logical Framework. Regarding indicators, it is identified that the Authority has different performance indicators.

When it comes to M&E tools, it is verified that Authority has specific guideline and manual related to project management. In the same case it is identified that different software are applied during the M&E practice. However, it has also an indication for the need for centralized automation system which will facilitate the M&E system and make communication very easy.

Utilization of M&E Results

In the effort made to identify the level and effectiveness of M&E result utilization, it is understood that the M&E findings are compiled as lesson learnt and found to be well documented. And the M&E result utilization is mainly for decision making. Moreover, it is identified that weekly meetings are made among the Top Management and Projects implementers to share the finds and give feedback. And this shows that the M&E result is used for decision making.

with regard to the extent and coverage of the M&E system, it has been identified that the Authority has a good practice. But it is also understood that there is a communication gap among the individual who are involved in the M&E practice which may indicate the gap in utilization of same effectively. It is also identified that there is a gap in using these M&E results for organizational development.

M&E Challenges

With regard to M&E challenges, among the common ones, it has been observed that getting good quality of data, delayed information, difficulty in using M&E tools & methods, capacity gaps, gaps in implementing efficient M&E systems supported by ICT are the common challenges which the Authority experiences. The results also indicated that, perception of employees on the M&E tasks and environment is another big challenge which may need in depth assessment.

Chapter Five

Conclusion and Recommendation

5.1 Conclusion

Based on previously discussed findings, the following conclusions were made;

Even though the Authority has a dedicated M&E unit, it is not equipped and capacitated since this unit is not staffed well and is not self standing on the M&E system.

Since the responsibility and practice of dedicated M&E unit is limited to report compilation, and source of data for the M&E practice is only single source (work units), it can be concluded that there is no data validation system.

When it comes to M&E tools, it is concluded that Authority has specific guideline and manual and also use different performance indicators. But there is a gap in using specific M&E approach consistently. It can be concluded that the M&E system is not well organized and is difficult to achieve the M&E goal.

M&E findings are compiled as lesson learnt and found to be well documented and are utilized for decision making. However, the M&E result communication gap among individual who are involved in the M&E practice indicate the gap in utilization of same effectively.

Getting good quality of data, delayed information, difficulty in using M&E tools & methods, capacity gaps, gaps in implementing efficient M&E systems supported by ICT are the common challenges which the Authority experiences. Moreover, perception of employees on the M&E tasks and environment is another big challenge of the M&E practice.

5.2 Recommendation

Based on the research findings and conclusions, the following recommendations are forwarded in order to strengthen the M&E practice of Ethiopian Roads Authority.

- In order to strengthen the institutional capacity of the M&E system of the Authority, the unit responsible for M&E should properly staffed & equipped with the necessary knowledge and skill. The M&E practice which are dispersed among different work units should be harmonized centrally within the M&E work unit.
- Data collected for the M&E should be sufficient, accurate, reliable, valid and acceptable. Therefore, to ensure this data quality, source of data should not be from single source. And the respective unit should have to design its mechanism for multiple data source like project site visit, data source from different stakeholders of projects and etc.
- Regarding M&E tools and approach clearly defined M&E approach should be utilized. This tool will define the main purpose of M&E approach, the responsible body, the intended objective, tools of data collection & analysis and communication in a formal way.
- To ensure the utilization and efficiency of the M&E system, M&E result communication strategy should be deployed. And building centralized and integrated IT system will also maximize efforts made and enhance efficiency of the M&E system.

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Annexes

1. Yes 2. No

1.7 Have you received any formal training on Monitoring and Evaluation?

1. Yes 2. No

SECTION II: M&E Practice in ERA

2.1 From your perspective, which one of the following is the main driver (purpose) for conducting M&E in ERA (5 being the most and 1 being the least)?

I/No.	Purposes of M&E	Extent of driving M&E					
		5	4	3	2	1	DK
2.1.1	<i>To check the progress of projects and/or programs</i>						
2.1.2	<i>To ensure cost efficiency</i>						
2.1.3	<i>To check projects met the intended purpose</i>						
2.1.4	<i>Enhancing trust among employees, government, and donors</i>						
2.1.5	<i>To prove transparency & accountability</i>						
2.1.6	<i>To learn from experiences</i>						
2.1.7	<i>To evaluate staff and build reward and training plan</i>						

2.2 What aspects of a project (program) monitored in ERA?

1. Cost 2. Time 3. Quality 4. Risk 5. Other.....

2.3 Which one of the following is practiced in ERA?

1. Continuous (Process) monitoring 2. Mid-term evaluation 3. Project completion (Output) evaluation 4. Outcomes and/or impact evaluation 5. All 6. Don't Know

2.4 To what extent does ERA have and applies M&E system in its programs?

1. Projects level 2. Programs level 3. Work unit level 4. At organization level 5. All

2.5 Do you follow any institutional guidelines (manuals) when conducting M&E?

1. Yes 2. No

2.6 Which software do you apply for M&E?

1. Microsoft project 2. Primavera 3. Excel sheet 4. Others.....

2.7 In your view, to what extent participatory is ERA's M&E Practice internally?

1. Small extent 2. Moderate extent 3. Large extent 4. Don't Know

2.8 To what extent the direct project actors (contractors and consultants) participate in ERA's M&E?

1. Small extent 2. Moderate extent 3. Large extent 4. Don't Know

2.9 To what extent the community and/or beneficiaries of ERA's product are involved in M&E?

1. Small extent 2. Moderate extent 3. Large extent 4. Don't Know

2.10 Does ERA use internal (in house) or external (say consultants) M&E?

1. Internal only 2. External only 3. Both 4. Don't Know

SECTION III: Challenges of M&E in ERA

3.1 Do you think there is any difficulty (challenge) in implementing M&E in ERA?

1. Yes 2. No 3. Do not know

3.2 If yes, please rate the following challenges; 5 being most difficult and 1 being least.

I/No.	Major Challenges	Level of Challenge					
		5	4	3	2	1	DK
3.2.1	<i>The tools and Methods used</i>						
3.2.2	<i>Insufficient M&E staff</i>						
3.2.3	<i>Knowledge and Experience gap of the available experts</i>						
3.2.4	<i>Delay in providing information (data) from different units</i>						
3.2.5	<i>Low quality data from reporting units</i>						
3.2.6	<i>Limited awareness on the importance and implication of M&E</i>						
3.2.7	<i>Resource and/or logistic problem</i>						
3.2.8	<i>Lack of coordination and interface among work units</i>						
3.2.9	<i>Duplication (number of) reports produced</i>						
3.2.9	<i>Insufficient support of Management at different levels</i>						

SECTION IV: Utilization (Effectiveness) of M&E Results in ERA

4.1 Are M&E findings well documented and archived in ERA?

1. Yes 2. No 3. Do not know

4.2 Are M&E findings compiled as "lessons learnt" for future use in other projects/ programs?

1. Yes 2. No 3. Do not know

4.3 How easy is accessing M&E findings for internal and external stakeholders?

1. Very easy 2. Easy 3. Average 3. A bit difficult 4. Very difficult

4.4 Does ERA use/refer to M&E findings in case there is a need for decision making or action to be taken?

1. Yes 2. No 3. Do not know

4.5 If M&E findings are referred, to what extent (how often):

1. Sometimes 2. Mostly 3. Almost always 4. Do not know

4.6 Do you think ERA uses M&E for developing the organization itself and enhancing capacity building for its employees?

1. Yes 2. No 3. Do not know

4.7 To what extent do you agree on the following statements about M&E in ERA? 5 being Strongly Agree and 1 being Strongly Disagree

I/No.	Statements on M&E in ERA	Level of Agreement					
		5	4	3	2	1	DK
4.7.1	<i>ERA has standard report format</i>						
4.7.2	<i>The report format includes all the necessary information for management decision</i>						
4.7.3	<i>The report submission dates are fixed</i>						
4.7.4	<i>People involved in M&E have knowledge and/or experience projects</i>						
4.7.5	<i>The progress reports produced by M&E unit provide sufficient information to follow and evaluate project progress</i>						
4.7.6	<i>ERA Management has regular formal meetings for M&E the</i>						

	<i>project progress</i>						
4.7.7	<i>The reports provide feedback that support the project</i>						

4.8 Is information (data) used for M&E available in organized and systematic manner for further checkup?

1. *Yes* 2. *No* 3. *Do not know*

4.9 Which one of the following most explains M&E practice in ERA?

1. *M&E in ERA is difficult and boring* 2. *M&E in ERA is smooth and enjoyable* 3. *Can't comment*

5. Any additional comment (input) is highly appreciated.

Thank you so much for your time and input!!

TRANSMITTAL LETTER

Melat Tsegaye
09101668865
Addis Ababa

Dear Sir/Madam,

Subject: Study on An Assessment of Monitoring and Evaluation Practice of Ethiopian Roads Authority.

I am a graduate student of Project Management at Addis Ababa University, School of Commerce. I am conducting a research on the aforementioned subject. This is in fulfillment of the degree in Masters of Arts in Project Management. You have been selected to participate in this study.

Hence, I would appreciate if you kindly assist me by responding to all the items attached in the questionnaire. Your name will not be mentioned anywhere in the questionnaire. The information you provide is confidential and will be used for academic research purposes only. Where possible upon request, I will make available to you the findings of the study. Your cooperation will be greatly appreciated. Thank you in advance.

Yours faithfully,
Melat Tsegaye

Annex II:- Key Informant Interview Guide

1. Would you briefly tell me about the unit responsible for M&E in ERA, including its composition?
2. Who sets target in ERA and how is the process?
3. Do you use the logical framework?
4. Are indicators identified, defined, and categorized?
5. Do you use more quantitative indicators than qualitative indicators for your project activities?
6. Does ERA conduct baseline surveys and follow up surveys to capture trends?
7. Do projects or work units receive feedback after carrying out project activities?
8. What challenges are faced from conducting monitoring and evaluation systems?
9. In a nutshell, is M&E in ERA efficient and effective? how?
10. What recommendations would you give to improve on the performance of monitoring and evaluation systems?