

**YANGON UNIVERSITY OF ECONOMICS  
MASTER OF DEVELOPMENT STUDIES PROGRAMME**

**CHALLENGES AND OPPORTUNITIES OF ENVIRONMENTAL  
IMPACT ASSESSMENT IN ROAD PROJECTS  
IN MYANMAR**

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EMDevs (15<sup>th</sup> Batch)**

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A thesis submitted in partial fulfilment towards the requirements for the degree of  
Master of Development Studies

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## **ABSTRACT**

Myanmar ranks 164 out of 178 countries in the 2014 Environmental Performance Index, and performance related to regulation or infrastructure has scores among the lowest globally. The study is to examine process, challenges and opportunities in environmental impact assessment in Myanmar with the focus on road projects. The in-depth interviews are conducted with key stakeholders, who are working on the area at different levels. The profiles of the respondents ranged from the decision makers, development agencies that are providing grants and loans for road projects in Myanmar, project management unit that is responsible for day to day management of road projects, to independent specialists. The findings indicate that there are opportunities such as increasing attention to environment from all stakeholders, established legal and regulatory framework, and to apply technologies as to the contextual requirements. There are also challenges that need to be addressed such as capacity development of stakeholders, to have sufficient competent human resources, more allocation of budget for implementation and monitoring of environmental management plan, raising awareness of project owners and communities about safeguarding environment, to modify some criteria used to categorize environment category, and to improve communication among different stakeholders.

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# TABLE OF CONTENTS

	<b>Page</b>
<b>ABSTRACT</b>	i
<b>ACKNOWLEDGEMENT</b>	ii
<b>TABLE OF CONTENTS</b>	iii
<b>LIST OF TABLES</b>	iv
<b>LIST OF FIGURES</b>	v
<b>LIST OF ABBREVIATIONS</b>	vi
<b>CHAPTER I INTRODUCTION</b>	1
1.1 Rationale for the Study	1
1.2 Objectives of Study	4
1.3 Method of the Study	4
1.4 Scope and Limitation of the Study	4
1.5 Organization of the Study	5
<b>CHAPTER II LITERATURE REVIEW</b>	6
2.1 Development of Environmental Impact Assessment.	6
2.2 Environmental Impact Assessment (EIA) Procedure and Process	8
2.3 Review on previous studies	11
<b>CHAPTER III OVERVIEW OF ENVIRONMENTAL IMPACT ASSESSMENT IN MYANMAR</b>	16
3.1 Environmental Clause in Constitution (2008)	16
3.2 Environmental Conservation Law (2012)	16
3.3 Environmental Impact Assessment Procedure	16

3.5	National Environmental Policy Vision & Purpose	18
3.6	Environmental Impact Assessment in infrastructure and transportation in Myanmar	20
<b>CHAPTER IV</b>	<b>SURVEY ANALYSIY</b>	<b>25</b>
4.1	Survey Profile	25
4.2	Survey Design	26
4.3	Examining on Survey Data	27
<b>CHAPTER V</b>	<b>CONCLUSION</b>	<b>38</b>
5.1	Findings	38
5.2	Suggestions	39
<b>REFERENCES</b>		<b>42</b>
<b>APPENDIX</b>		

## LISTS OF TABLES

<b>Table No.</b>	<b>Title</b>	<b>Page</b>
Table 3.1	Number of Environmental Assessments of Road Projects	23
Table 3.2	Road Projects with EIA	24
Table 4.1	Survey Participants	25
Table 4.2	Demography of survey respondents	27
Table 4.3	Awareness on Environmental Impact Assessment Related law, procedure, and regulation	28
Table 4.4	Usefulness of the law, rule and procedure	28
Table 4.5	Perspectives on comprehensiveness, ease of compliance and enforcement of rule and regulation	29
Table 4.6	Areas to strengthen for better enforcement of the regulation	30
Table 4.7	Key Stakeholders for Governance in EIA	30
Table 4.8	Scoring for governance of EIA	31
Table 4.9	Scoring for communication about EIA among stakeholders	31
Table 4.10	Scoring for capacities of stakeholders	32

## LIST OF FIGURES

<b>Figure No.</b>	<b>Title</b>	<b>Page</b>
Figure 2.1	Environmental Impact Assessment (EIA) process	9
Figure 3.1	EIA Preparation and Review in Myanmar	18
Figure 3.2	Challenges in EIA process	20
Figure 3.3	EIA reports submitted to and reviewed by ECD	21
Figure 3.4	Administration process of EIA review	22
Figure 4.1	Challenges in EIA process	27
Figure 4.2	EIA reports submitted to and reviewed by ECD (Jan, 2019)	27

## LIST OF ABBREVIATIONS

ADB	Asia Development Bank
EA	Executing Agency
ECD	Environmental Conservation Department
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
JICA	Japan International Cooperation Agency
MOC	Ministry of Construction
MONREC	Ministry of Natural Resource and Environmental Conservation
OECD	Organization for Economic Co-operation and Development
PMU	Project Management Unit
SDG	Sustainable Development Goal
UN	United Nations
WB	World Bank

# CHAPTER I

## INTRODUCTION

### 1.1 Rationale of the Study

Since Myanmar opened up its economy and integrates into the global economy, it experienced significant transformation in socio economics determinants including increasing foreign investments, development projects, increasing national income among others. Globalization has also become accelerated over time and promoted flow of capital and investments faster than before. These changes exposed the country to the unprecedented rate of environmental deterioration such as deforestation, erosion of soil and water, air pollution from large-scale projects.

Myanmar ranks 164 out of 178 countries in the 2014 Environmental Performance Index, and is among the world's least developed in environmental management and regulation. Many aspects of performance related to regulation or infrastructure has scores among the lowest globally. Further, ecosystem vitality and protection of terrestrial biodiversity is particularly weak (Asia Development Bank, 2015).

There are also many issues surrounding environment from the copper mining in central part of the country to the debate of whether islands in the archipelago in the southern most corner should be allowed to build permanent accommodations for tourism, as it can have detrimental impacts on less-touched environment there.

Transport sector in Myanmar is very important for country development. New roads are needed while existing roads requires modernization and proper maintenance. Currently, the country spends 1%-1.5% of its income (Gross Domestic Product, GDP) on transport. According to Asia Development Bank estimates, 4%-4.5% of GDP is required just to spend on prioritized transport investment. Road transportation is the main mean of moving people and commodities around the country as well as for border trade. With that, it is obvious that Myanmar will have more projects to build new roads or modernize existing ones, that we are experiencing now. (ADB, 2016).

National Transport Development Master Plan serve as guidance for transport sector upgrade and modernization. In the plan, the environmental and social impact assessments are highlighted as important components. It encourages the use of environmentally friendly transport such less noise, less vibration, less emission gas and all-weather and natural disasters preventive roads.

Impact assessment practice around the world is dominated by its use at the project level, with particular emphasis on major projects. Unfortunately, not all countries have introduced legislation to require the routine use of EIA for proposed projects that might have significant environmental impacts. This gap was partly addressed by the World Bank group, which developed Safeguard Policies, including environmental procedures, to guide funding decisions with respect to major projects in developing countries.

However, as the Bank's group financing decline since 1990s, large projects were going ahead without environmental and social assessment as they were funded from other sources. The solution has been to encourage the other major funders – the private sector financial institutions and bilateral lending agencies – to adopt similar requirements for environmental assessment when making their own funding decisions. With respect to bilateral funding, an important development has been the move by the OECD group of countries to agree environmental and social assessment procedures in relation to export credit lending by the member countries, much of which is linked to major projects in developing countries.

Further, there are issues with EIAs. EIAs have had 'far less influence than their original supporters had hoped they would' in influencing project and plan decision-making and identify a number of broad areas of concern: the different views about the nature and purpose of EIA and especially its relationship to decision-making processes; institutional implementation issues; problems associated with practice, including limited or no public participation; and the limited substantive effect of EIA as a process.

International Study of the Effectiveness of Environmental Assessment (Sadler 1996,p. iv) concluded:

“Despite the many methodological and administrative advances in EIA over the past two decades, recent experience in many countries confirms that there is still considerable scope for strengthening the process. Immediate and cost-effective measures could help improve the

process in four key areas: scoping, evaluation of significance, review of EA reports, and monitoring and follow-up”.

An earlier European Union report (Commission of the European Communities 2009) on the application and effectiveness of the EIA Directive identified a number of areas where improvements in practice are needed, including screening, scoping, consideration of alternatives, monitoring, public participation and EIA quality control.

One area of impact assessment is still comparatively under-developed: cumulative effects assessment (CEA). Most legislated EIA processes refer to cumulative effects as one of the characteristics of proposed activities that need to be considered, but in practice they are often not addressed or are handled inadequately. Cumulative effects are central to many impact assessments, so the renewed interest in improving performance in this area is necessary.

Because of the issues, it is imperative to ensure road projects are environmentally friendly and are assessed properly for their impacts before damages are irreplaceable. With the weak environmental performance and increasing needs of road projects, it is essential to understand how Environmental Impact Assessment (EIA) is undertaken in road projects, their strengths and weaknesses so that appropriate interventions can be taken to have less impacts on environment and environmentally friendly roads. These roads will be main arteries for sustainable development.

## **1.2 Objectives of Study**

The study is to examine challenges and opportunities of EIA in Myanmar with the specific focus EIA procedure, governance, implementation, and capacity of stakeholders for road projects and to contribute towards evident generation to reduce challenges and maximize the opportunities.

## **1.3 Method of Study**

This study uses the descriptive analysis. Primary data will be collected to have firsthand real-life perspectives and information from the people who are doing the EIA process and activities in real practices. Literature will be conducted to understand the prevailing and current situation both in Myanmar and globally. The assessment tool will be used to understand the

challenges and opportunities of EIA process in road projects in Myanmar. Result will be presented in cross tabulation whenever possible to generate clear evidences and inferences.

#### **1.4 Scope and Limitation of Study**

The period of the study is from July to November, 2019. The respondents include government personnel who oversee and sign off the submitted EIAs, environmental specialists from development financiers such as World Bank and Asia Development Bank, and on-site project implementation and management staff who responsible for EIA preparation and compliance. The scope of the study is to explore t challenges and opportunities in of EIA process in road projects in Myanmar by in-depth interviews with key stakeholders. The study will assess interviewees' awareness on existing EIA law, regulation, procedure; governance and implementation arrangement of current EIA process; existing procedure, process and compliance; implementation and monitoring of Environmental Management Plan (EMP); and communication and capacity Development.

The study pursues to understand experiences and perspectives of key stakeholders using qualitative method. The approach can have limitation to include all personnel working on EIA for road projects in Myanmar. However, using qualitative method will allow to have better insights into the subject matter that quantitative method couldn't capture. Selected participants for the study are also wide ranging and can provide the generalizable findings that can represent different stakeholders' perspectives. Further, it will increase the validity of findings and strengthen the recommendations.

#### **1.5 Organization of Study**

The study is organized into five chapters. Chapter I presents the introductory part and includes the rationale for the study, objectives, method, scope and limitations, and organization of the study. Chapter II reviews the literature related to EIA process and procedures, international experiences. Chapter III shows the overview of EIA process, related laws, and regulations in Myanmar. Chapter IV describes the main findings and discussions of EIA process, challenges and opportunities in road project in Myanmar with figures and quotes. Chapter V presents conclusion based on findings and recommendations.

## CHAPTER II

### LITERATURE REVIEW

#### **2.1 Development of Environmental Impact Assessment**

Organization for Economic Co-operation and Development (OECD) defined the environmental impact assessment (EIA) as an analytical process that systematically examines the possible environmental consequences of the implementation of projects, programs and policies<sup>1</sup>. The process started in the developed countries especially in United States in 1960s after realizing the hazardous impacts of industrialization and urbanizations projects on environment, resources as well as people causing concerns for population, quality of life, and environmental stress. As a result, the pressure groups formed and advocated for a tool to safeguard the environment and United States became a first country to issue National Environmental Policy Act in 1970 to protect the environment and all other developed countries followed suit. At the present, all developed countries have the environmental laws while developing countries are pursuing to adopt it.

EIA has arrived out of “the need to integrate all aspects of environment and development”. It requires collection and dissemination of environmental information and becomes the most formal part of the concept of sustainable development. This integration of environment and development has a long history in international law first in the 1949 Conference on conservation and utilization of resources. Stockholm declaration, principle 13, calls on states to adopt “... an integrated and co-ordinated approach to their development planning so as to ensure that their development is compatible with the need to protect and improve the human environment.” Here, the human environment refers to the Nature and it recognized the nature as not only instrumental value but also inherent value.

EIA is very much relatively unfamiliar concept in many developing countries and has experienced different hurdles including: developers considered it as another stumbling bureaucratic tool in the path of development and developing countries people conceived the experts of EIA being foreigners as agents of colonizers and industrialized countries trying to

keep the developing nations in the vicious cycle of poverty. In the past, choice of development project has one rationale: economic viability. However environmental and social impacts now become the imperative second and third criteria for choosing development projects.

With globalization and technologies advancements, we are also experiencing the deterioration in environment never seen before. Excessive and irresponsible uses of resources have led to rapid deforestation, global warming, and extreme environmental phenomenon such as cyclones, floods, cold and heat waves across the globe. Hence, it is imperative to put environmental issues first in considering the economic developments to mitigate the detrimental impacts on environments as well as for sustainable developments. The global communities are now striving to keep the environment preserved as highlighted by the United Nations' Sustainable Development Goals (UN- SDGs, 17 in total) to achieve 2030. Environmental conservation is considered and core in many goals. It highlighted the important role of EIAs in the efforts to fulfill the sustainable developments<sup>3</sup>.

Further, the detrimental changes have led to environmental impact assessment, or sometimes simply environmental assessment (EA), being recognized in a large number of international conventions, protocols and agreements, including:

- Convention on Transboundary Environmental Impact Assessment;
- Convention on Wetlands of International Importance;
- Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters;
- United Nations Framework Convention on Climate Change;
- United Nations Convention on the Law of the Sea;
- Protocol on Environmental Protection to the Antarctic Treaty.

While many international legal instruments concern only a few countries, and usually for a narrow range of situations, some, such as those listed above, are broad and have been signed by many countries. In all, 191 of the 193 member nations of the United Nations either have national legislation or have signed some form of international legal instrument that refers to the use of EIA. Hence, it can be conferred that EIA is a universally recognized instrument for environmental management which is firmly embedded in domestic and international environmental laws.

## **2.2 Environmental Impact Assessment Procedure and Process**

EIA is undertaken within the legal, policy and institutional frameworks established by individual countries and international agencies and play vital role in successful implementation of projects mitigating the negative impacts on the environment. In the context for international laws, some important ones include: Convention on Environmental Impact Assessment in a Trans-boundary Context (Espoo, 1991), Rio Declaration (1992), UN Convention on climate change and Biological Diversity (1992) etc. Further, international development agencies like World Bank, Asia Development Bank, and African Development Bank also have environmental safeguard measures that borrowing countries need to comply with.

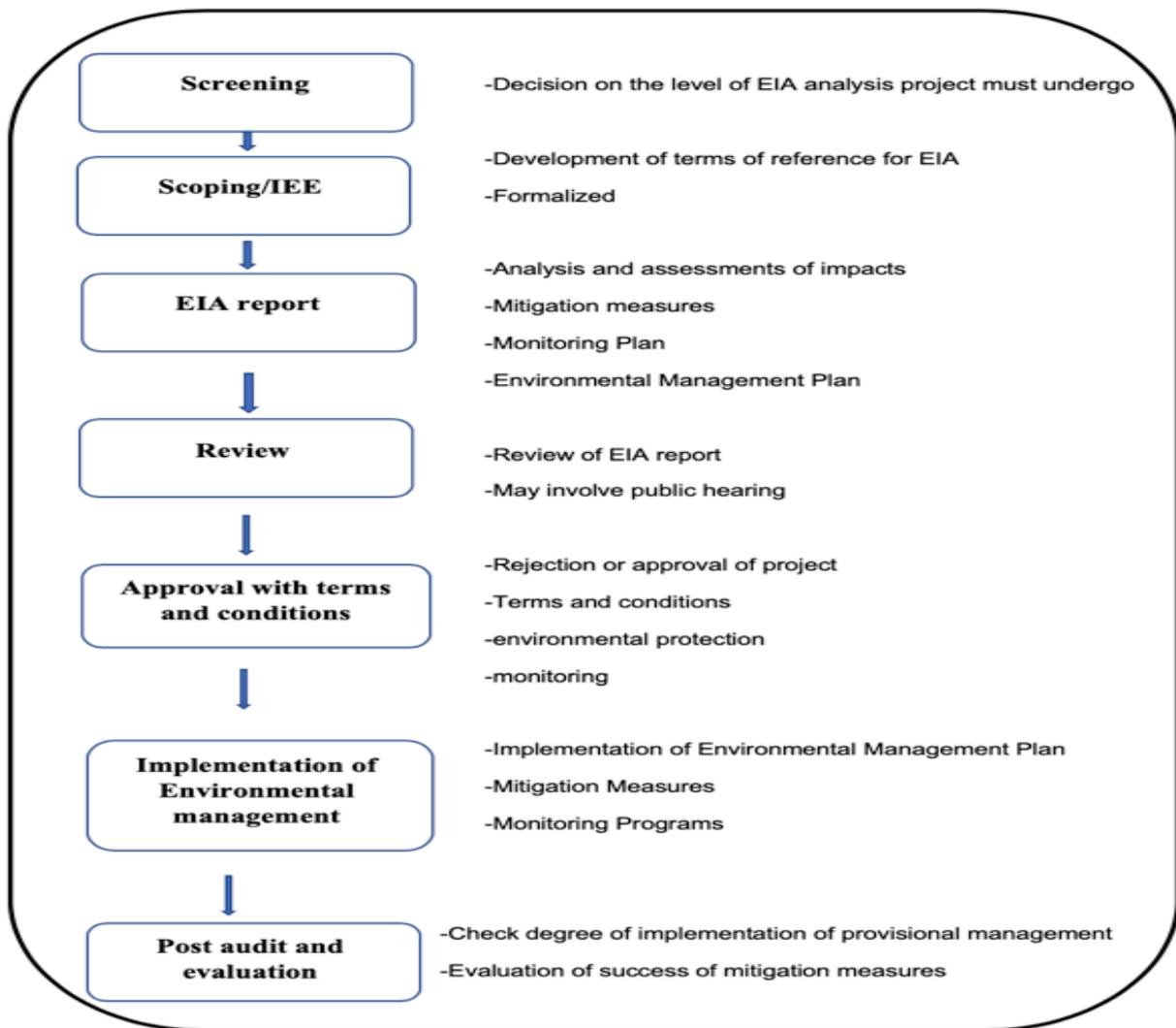


Figure 2.1: Environmental Impact Assessment (EIA) process (source: ADB review on EIA process)

Based on the findings of the scoping study, generally projects are categorized into 4 groups based on type, location, scale, and sensitivity and the magnitude of their potential environmental impacts, including direct, indirect, induced, and cumulative impacts. A proposed project is defined as Category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment (EIA), including an environmental management plan (EMP), is required.

The proposed project is defined as Category B if its potential adverse environmental impacts are site-specific, few if any of them are irreversible, and in most cases mitigation

measures can be designed more readily than for category A projects. An initial environmental examination (IEE), including an EMP, is required. A proposed project is Category C if it is likely to have minimal or no adverse environmental impacts. An EIA or IEE is not required, although environmental implications need to be reviewed.

A proposed project is Category F1 if it involves the investment of funds to or through a financial intermediary. The financial intermediary must apply and maintain an environmental and social management system, unless all of the financial intermediary's business activities have minimal or no environmental impacts or risks. The EIA process, is a difficult one requiring a multi-disciplinary approach. Different kinds of knowledge from different actors for the final outcome of the process is needed. The EIA process requires participation of different parties and understanding stakeholders' perspectives and incorporating them is essential for the acceptable outcome.

The statement about environmental impact should be made in accordance with the scoping document and include the main alternatives that are available, description of the process and what effects it will have on different aspects of the nature, such as flora and fauna and other life forms, water, climate, landscape, air, humans beings, society and culture. The statement is an important part of the process since it should include all the relevant information on the project. Participation of the public, governmental agencies and others can be interwoven in all steps of the process.

### **2.3 Review on Previous Studies**

Since requirement of EIA is burgeoning in developing countries particularly for rapid acceleration of reforms and environmental degradation. Different countries have disparate requirements for the EIA process. Theoretical basis of EIA has been various theories and models and Bartlett and Kurian (1999) adopt a political science perspective and identified models that used implicitly to discuss theoretical basis of EIA as:

- information processing model – essentially the rationalist, decision-support model;
- symbolic politics model – EIA used to suggest in accordance with certain values, but not necessarily holding to those values

- political economy model – EIA used by the private sector to reduce financial risk, and if possible, increase financial opportunities, by internalizing environmental externalities
- organizational politics model – changes occur in the internal politics of organizations required to use EIA
- pluralist politics model – EIA process used to open opportunities for negotiation and compromise among different interest groups
- institutionalist politics model – political institutions are changed significantly by the effect of EIA on values, actions and perspectives in their policy-making processes.

Richardson (2005) stated that: ‘EA needs to engage with competing multiple rationalities, and ... value conflicts and judgements about them are inescapably present in EA’. Hence, he saw the need to shift theoretical perspectives from communicative rationality to one that allows ‘EA practitioners[to] operate in an ethically reflexive way in a world of contested rationality’.

Abebe et al. studied the challenges and opportunities of EIAs in east African countries of Ethiopia and Kenya, as well as compared to their system to USA. Despite EIA being a valuable tool to improved project design, improved opportunities for public involvement in environmentally sensitive decision-making process, and increased accountability and transparency during the development process, their study identified the gaps and challenges as:

- lack of implementing law: the absence of legal enforcement to apply EIA, lack of proper indicators for threshold values for specific development projects that required detailed EIA.
- Lack of Awareness: EIA is very little known among key stakeholders. Limited knowledge about EIA at the implementation levels, district level in that case, and limited public awareness also acted as hinderances for proper application of EIA.
- Lack of capacity: both the governmental agencies and the consultants that work for the projects on environmental safeguard did not have the appropriate capacities, that acted as significant limitation for the implementation of EIAs. Further, the inter-disciplinary team, the technical skills and legal know-hows are also lacking.

India faces several challenges in undertaking EIA practice. Among them, particular challenges include: control of EIAs by project proponents, absence of independent set up to perform and assess EIAs and EMP implementation, absence of cumulative EIA provisions in

the law and lack of efficient quality control for EIA process. Deciding Minimum Acceptable impact is the intractable issue and it is not easy to decide on the same basis and it is different for different stakeholders and organizations. Attaching the monetary value to living system is a daunting issue and thus many find it difficult to accept the cost benefit analysis of EIAs. Time and resource limitation are other serious constraint as there is no enough time and resource to collect data for EIA. (Arun, 2013)

In Nigeria, structures of organizations and procedures of project proponents on making decisions were affected by the EIA program. Since the undertaking of the process is late, the resulting affects are not high and fulfilling the requirements of administration is the primary objective of project proponents. Some positive changes include unusual projects' withdrawal, endorsement of sound projects, choosing more appropriate project locations, modifications of plans and readjustments of goals. Project proponents become more responsible and they tried to refrain from proposing a project that can have detrimental impacts on the environment in the fear that it will not be passed by the EIA review committee. At the same time, EIA is performing partly systematically. The same trend could continue because many project proponents are more to meet the administration requirement rather than viewing the EIA as useful procedure for the goods of all stakeholders concerned.

Conflicting roles, mandates and responsibilities among different-level stakeholders at federal, state and local levels are also challenges. There are also issues around overlapping, duplications, inconsistencies in the constitutional and legislative mandates. Accountability has also been major issue in compliance with laws, norms, rules and procedures of EIA. There are also issue with the responsible EIA entities to point out the need of proper EIA because of the pressure from government and development organizations as it can be portrayed as anti-development or anti-government. Different decision makers has poor awareness on legal requirement and some responsible authorities and practitioners has very low knowledge on environmental management laws and their requirements for different projects.

Public participation has been weak link in the EIA process in Nigeria. Lack of proper skills and previous experience in public participation in different stakeholders contributed to the issue. Public are poorly informed about negative consequences of the projects on environment. Quality of EIA reports are also questionable and many of them are voluminous. The reliability of the reports is also issue and would indicate the issue around competency of

review and approval members, and those of consultants. Another issue is the challenge that proponents invest insufficient resources for the quality EIA and perceive that EIA is more for fulfilling administration requirement. (Agbazue, 2016)

Same or similar challenges relating to EIA is also identified in Rwanda. These include insufficient baseline data, shortage of staff in the department of EIA, lack of adequate materials, lack of political will of decision makers, developers consider EIA as barriers, country's priority should be development rather than protecting environment and inability to predict cumulative impacts. Other challenges include EIA being reactive rather than being proactive process and decisions are not based on comments from the environmental officers. There is also misunderstanding between environmental officers and local authorities. There are also limited funding for EIA and lack of training for environmental officers as well as low awareness about environment in the country. (Munyazikwiye, 2011)

## CHAPTER III

### OVERVIEW OF ENVIRONMENTAL IMPACT ASSESSMENT IN MYANMAR

#### 3.1 Environment Clause in Constitution (2008)

The Article 37(a) of the Constitution states: “The Union is the ultimate owner of all lands and all-natural resources above and below the ground, above and beneath the water and in the atmosphere in the Union.” The Article 45 further stipulates: “The Union shall protect and conserve the natural environment.” In the Article 390 (b), it is stated that it is the duty of every citizen to assist in the preservation and safeguarding of cultural heritage and environmental conservation as well as striving for development of human resources protection and preservation of public property. Hence the Constitution is clearly describing the Union is the owner of the land and natural resources and the responsibility of conserving the environment lies on the Union as well as the individual.

#### 3.2 Environmental Conservation Law (2012)

Before enactment of Environmental Conservation Law in 2012, Myanmar has little legal guidance and requirements for environment and the existing ones were spread across various laws. The Law serve as the very important building block for the environmental conservation and soon followed by passing of the Environmental Conservation Rules (2014) and the Environmental Impact Assessment Procedures (2015). All together, they render an integrated framework and explicit requirements of EIA procedures.

The Law was passed by Pyidaungsu Hluttaw (Upper House) on 30th March, 2012. It comprises eight objectives and the second stated as “to enable to lay down the basic principles and give guidance for systematic integration of the matters of environmental conservation in the sustainable development process”. The law also highlighted its objective of giving a common platform for cooperation among different stakeholders: “to enable to cooperate with Government departments, Government organizations, international organizations, non-government organizations and individuals in matters of environmental conservation”.

The Law also highlights the formation of Environmental Conservation Committee with the Minister of Union Ministry as the Chairman and it also renders the duties and powers to

the environmental conservation of the Ministry. It clearly states the imperatives of environmental conservation in any work or business in section 21: “The owner or occupier of the category of business, work-site or factory, workshop stipulated by the Ministry under section 21 shall apply for the prior permission to the Ministry in accord with the stipulations”.

### **3.3 Environmental Impact Assessment Procedure**

The procedure was established by Ministry of Environmental Conservation and Forestry in 2015. It provided the comprehensive steps and act as the guidance for all EIA procedures in Myanmar. Article 3 states that any government or non-government entity and any project that may have impact on environmental quality are required to get Prior Permission by the Ministry. It also stipulates the categories of projects: either Initial Environmental Examination (IEE) type, Environmental Impact Assessment (EIA) type, or neither of them—that doesn’t require any environmental impact assessment. The Environmental Conservation Department makes the determination on whether the Environmental Management Plan (MEP) will be required or otherwise.

Further, it identifies the Projects and activities that requires EIA, and generally included those:

- a. involve multiple components and many or varied pollution sources and/or pollutant types, requiring integrated Environmental Management Plan (EMP) to be tailored specifically to mitigate such pollution;
- b. are characterized by a high risk of significant, adverse environmental or social impact;
- c. are of a type or size for which there is a lack of prior knowledge and experience as to what the potential adverse impacts may be and their size or significance; or
- d. where the significance of the potential environmental or social impacts or the sensitivity/vulnerability of the recipients of those impacts requires a high level of environmental and social management expertise and skills, and continued strict control and supervision throughout the life of the project or activity.

It also outlines the EIA process as mentioned in the figure 2. It started with the conduction of EIA by the project, that encompass the disclosure of information about the project, undertaking of environmental and social assessment studies, and conduction of

consultations at national, state and local levels with key stakeholders. Thereafter, the project needs to prepare or revise the report, and disclose it to public as well as submit to the Ministry of Natural Resource and Environmental Conservation (MONREC). The Ministry then submits the report to the EIA Report Review Board, that prepare comments followed by asking from other key stakeholders including public and conduct public consultations. After reviewing all comments, it is determined whether the report either deems satisfactory or not. The latter require the aforementioned process starting again.

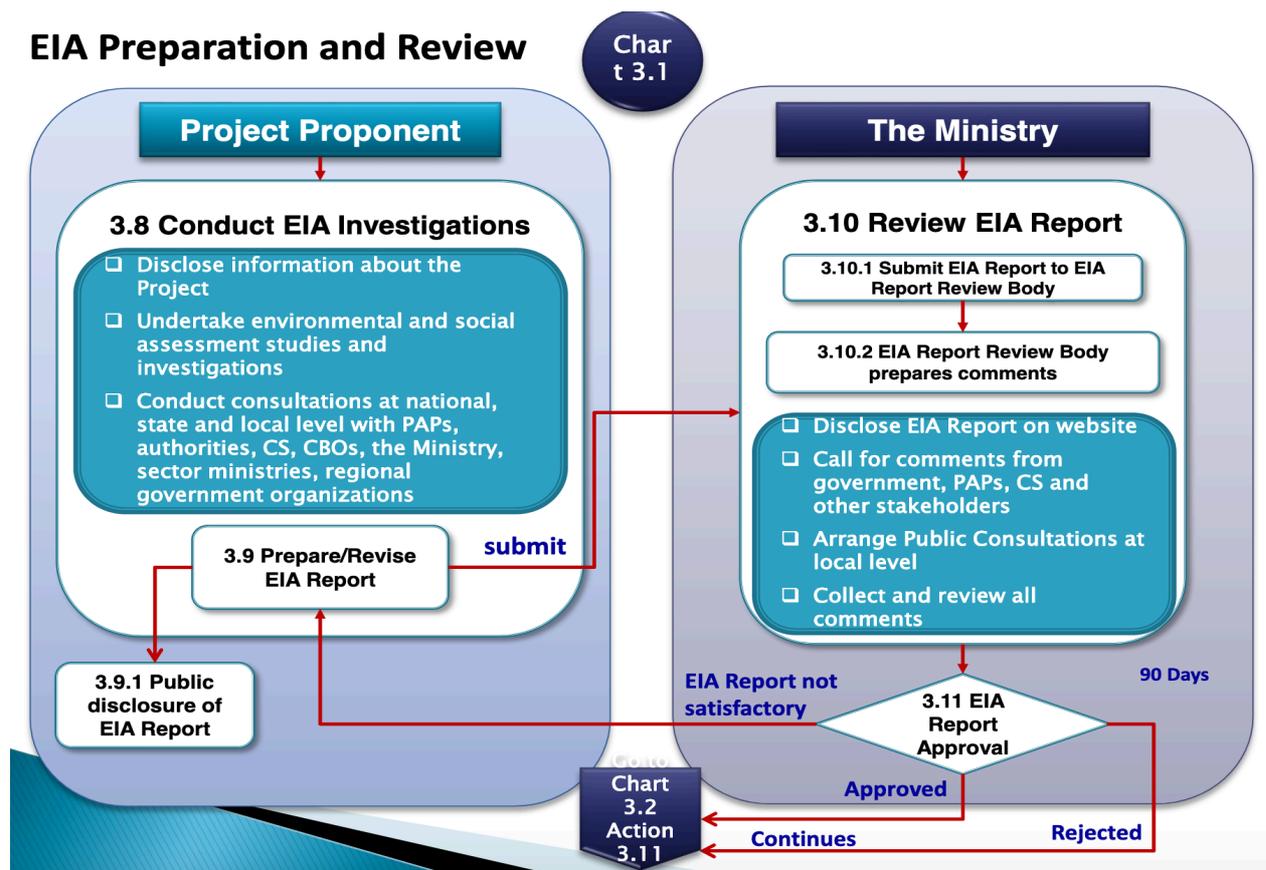


Figure 3.1: EIA Preparation and Review in Myanmar (source: Environmental Conservation Department (ECD) presentation)

### 3.4 National Environmental Policy Vision & Purpose

The policy sets out the vision of a clean environment, with healthy and functioning ecosystems, ensuring inclusive development and well-being for all people in Myanmar. It aims to establish national environmental policy principles for guiding environmental protection and sustainable development and for mainstreaming environmental considerations into all policies, laws, regulations, plans, strategies, program and projects in Myanmar. The principal serve as the guiding framework for achieving: a clean environment and healthy, functioning,

ecosystems; sustainable economic and social development; and the mainstreaming of environmental protection and management.

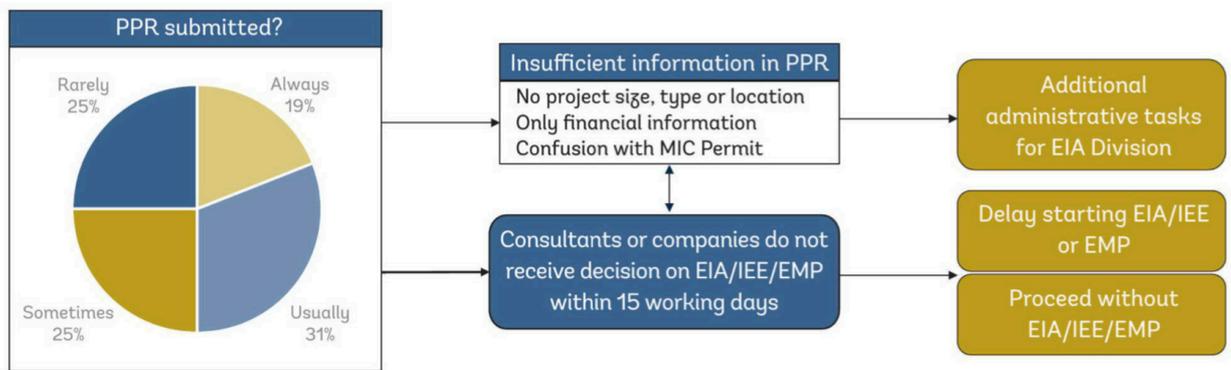
The principles envisioned to have clean environment and healthy, functioning ecosystems with the purposes of:

- Every person and citizen living in Myanmar has the right to access to a clean and healthy environment, and to protect the environment.
- Myanmar's ecosystems are to be protected and managed in sustainable ways to ensure their natural functions and resilience, and rich biodiversity, are maintained.
- Myanmar's natural resources are to be protected and managed in integrated and sustainable way to ensure their availability and quality for future generations is not diminished.
- Rights of indigenous people and ethnic nationalities to their lands, territories, resources and cultural heritage, and their roles in environmental conservation and natural resource management are recognized and protected.
- Recognizing the inextricable link between environment and poverty, environmental considerations are central to effective people-centred development and will guide development strategies so that sustainable and equitable approaches to improved prosperity and living standards are pursued.
- Climate smart approaches to development, including resilience, climate change adaptation and mitigation, and disaster reduction strategies, will be aligned to environmental protection and good natural resource management approaches in the pursuit of low-carbon, sustainable development.
- Remediation of past environmental damage will be prioritized in development planning and decision-making to promote green outcomes and give effect to the polluter pays principle.

### 3.5 Environmental Impact Assessment in infrastructure and transportation in Myanmar

According to Asia Development Bank, there are infrastructure projects including transportation that aimed to help improve and modernized Myanmar infrastructure. Power Network Development Project (Transmission Component) that includes design, supply, installation, and commissioning of two 230 kilovolt (kV) transmission lines and has two substations: between Ahlone and Thida substations in Yangon, and Mawlamyine-Ye-Dawei stations. The project has been screened and categorized under the Myanmar EIA Procedure (2015). Environmental examinations are required for both transmission lines; each for the Ahlone-Thida transmission line, and for the Mawlamyine –Ye –Dawei transmission line and its substations.

Yangon Urban Renewal and District Cooling Project supported to develop urban structures to support the current growth and to achieve its long-term development goals. The project also includes efforts to conserve and restore Myanmar's unique heritage buildings and to fulfill undergo a major transformation aligned with the strategic urban development theme “Yangon 2040, A City of Green and Gold”. The project also developed Environmental and social impact assessments to understand the impacts caused by the project.



Note: MIC = Myanmar Investment Commission.

Figure 3.2: challenges in EIA process (source: survey data and country environment analysis, world bank)

As described in the figure, only 31% of the projects submitted the necessary Project Proposal Report (PPR) and they do not contain all necessary information sometimes that put the additional burden for ECD to ask the required information and delays the review and approval procedure. In addition, companies or consultants sometimes proceed the project

without receiving the response from the ECD when ECD can't provide decision with 15 working days, causing vicious cycle (World Bank, 2019)

Another challenge is the very high requirement by the EIA procedure or difficulty to implement in ground. It makes implementing agencies to comply with the specifications somewhat difficult. Further, EIA guideline cannot cover all areas such as biodiversity. More information about how to protect the biodiversity is required in the guideline. EIA procedure being generic and requires specifications for different sectors.

Type	Total received	Total replied	Replied (%)	Total approved	Approved (%)	Total awaiting reply	Total awaiting approval
EIA	287	195	67.9	37	12.9%	92	250

Figure 3.3: EIA reports submitted to and reviewed by ECD as of January 2019 (source: ECD)

The lack of enough competent human resources is another challenge that cause significant challenge in reviewing and approving EIA reports in timely manner. As of January 2019, only 67.9% of the submitted EIA were reviewed and replied with 13% being approved. 250 EIA reports were still waiting the approval.

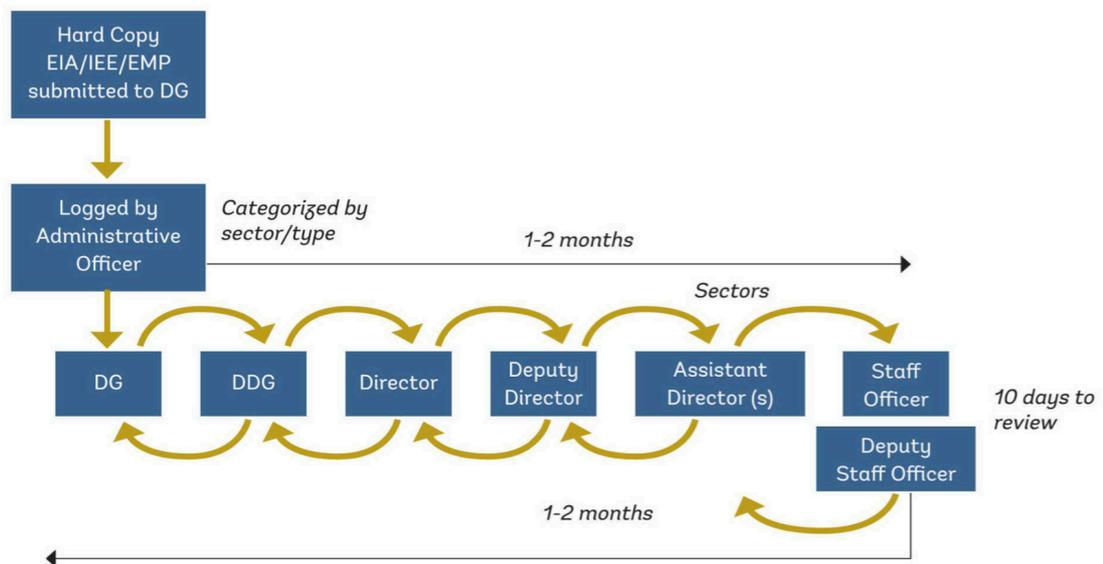


Figure 3.4: Administration process of EIA review (source: survey data and world bank)

Another challenge is the long administration process to review the EIA reports. As described in the figure, there are several steps with many levels of staff involved to review an

EIA report and generally take 2 to 4 months to relay the decision. The ECD personnel also indicated that more specialist knowledge is required (for example, biodiversity and socioeconomic analysis) and a team approach could be useful to review reports. Development partners provided training programs and development of EIA guidelines to improve the capacities. However, it is necessary to ensure that new staff and the state/regional ECD offices also have required competency.

There are also other challenges that act as hinderances to comply with EMP, its implementation and monitoring. The proverbial challenges include insufficient human resources and allocated budget for implementation of EMP and monitoring, both in governing bodies and implementing project owners. The challenges are contributed to either lack of awareness or commitment or both by the project owners. Hence, the magnitude of the challenges depends heavily on implementing agencies/project developers' perception on safeguarding environment. Additional budget is also essential for the ECD to effectively improve staffing, competency and to establish district and township offices. Additional resources, equipment, and information systems are needed to effectively review and approve EIA reports and to undertake the necessary monitoring of EMP implementation.

Several road projects that are collaborative work of the Ministry of Construction and development partners required environmental assessment. Environment and social unit of the MOC is working with development partners for environmental assessment and securing the necessary Environmental Clearance Certificates from the ECD of the MONREC. Among the projects of MOC that are conducting environmental assessments together with the development partners include wide ranges of road projects from road construction in very remote mountain of Chin state to modernizing of existing roads in central dry zone, Shan and southern Myanmar.

Table 3.1: Number of Environmental Assessments of Road Projects

Environment Assessment	To conduct	conducting	Conducted	Total
EIA	1	3	5	9
IEE		4	3	7
EMP			16	16
Total				32

source: MOC

As described in the table 3.1, there are 9 road projects that required EIA, of which 5 were already conducted. Out of total 7 IEEs, 4 are still ongoing and 16 EMPs were already conducted.

Table 3.2: Road Projects with EIA

No	Road	Environment Assessment	Remark
1	Reid-Teetain Road (first 52 km)	EIA	Received initial reply
2	Reid-Teetain Road (52-100 km)	EIA	Received initial reply
3	Kalaywa-Ywarkyi Road	EIA	Received initial reply
4	Paletwa-Zorinpu Road	EIA	Approved
5	Taungnoo-Leiktho-yardo-Loikaw-Hopone Road improvement (Karen State)	EIA	Approved
6	Taungnoo-Leiktho-yardo-Loikaw-Hopone Road improvement (Shan State)	EIA	Approved
7	Hanmyintmo-Myogyi-Ywarngan-Aungpan Road improvement	EIA	Approved
8	Ngathinechaung-Gwa Road improvement	EIA	Approved
9	Thandwe-Gwa-Ngatheinchaung Road	EIA	Approved

source: MOC

As mentioned in the table 3.2, EIA project road locations are varied from Chin, Rakhine, Karen, Shan States to central dry zone and delta.

## CHAPTER IV

### SURVEY ANALYSIS

#### 4.1 Survey Profile

Table 4.1: survey participants

Stakeholders	Agencies	Key Informant interviewees	Number
Government	Environment Conservation Department (Ministry of Natural Resource and Environmental Conservation (MONREC))	Focal persons for EIA review	3
	Environment, social development department (Ministry of Construction (MOC))	Focal person for review and preparation of EIA	2
	Project Management Unit (MOC)	Focal person for environment	3
Development Organizations	Asia Development Bank	Environmental specialists	3
	World Bank	Environmental specialists	1
Technical experts	Independent Consultants		3
	Total		15

Source: survey data 2019

Key stakeholders who are working for EIA for road projects at different levels from Union to implementation levels are included in the survey. Their profiles ranged from the decision makers in the MONREC, imperative development agencies that are providing grants and loans for road projects in Myanmar, consultants who are responsible for day to day management of road projects, environment specialists who work on preparation of EIA documents including EMP (table 4.1)

#### 4.2 Survey Design

To understand the challenges and opportunities of EIA in road projects in Myanmar and for the systematic analysis, the conceptual framework is developed (fig 3). The framework starts with synthesizing regulatory frameworks for EIA in Myanmar, an essential requirement

to understand guiding principles of EIA in Myanmar, followed by the review of EIA process for road projects. Thereafter challenges and opportunities for EIA in road projects are explored through in-depth interviews with key stakeholders. Finally, the recommendations are made to help improve EIA process and implementation in road projects in Myanmar.

### **Methods of Data Collection**

Literature review was conducted to synthesize existing process, rules and regulations about EIA for road projects in Myanmar. Key search terms—the main terms being “EIA in Myanmar”, “EIA process in Myanmar”, “rules and regulations for EIA in Myanmar”, “EIA for road transportation in Myanmar”, “EIA for road projects in Myanmar”, “Challenges of EIA in Myanmar”, “Opportunities for EIA in Myanmar” were used to find the relevant literature.

Primary data was collected using in-depth key interviews with key stakeholders. Using the literature review findings and consultations with the professionals working for EIA in Myanmar, the above stakeholders are identified as appropriate for primary data collection. Interviewees are informed about the objectives of interviews, confidentiality, and voluntary participation before interviews and requested consent to participate in interviews.

### **Interview questions**

The interview questions were developed based on the objectives of the study and the literature review (appendix 1). The questions cover the themes on particulars of interviewees, interviewees’ awareness on existing EIA law, regulation, procedure; governance and implementation arrangement of current EIA process; existing procedure, process and compliance; implementation and monitoring of Environmental Management Plan (EMP); Communication and Capacity Development. The questions were field tested with an environment specialist before actual data collection. The key stakeholders that are participated in the data collection are as follow.

### 4.3 Examination of Survey Data

Table 4. 2: Demography of survey respondents

No	Interviewees Descriptions	Description	percentage
1	Age	20-30 years	10%
		30-40 years	40%
		40-50 years	40%
		50-60 years	10%
2	Gender	Female (77%)	Male (23%)
2	Organization/Institution	Government	53%
		Development Agencies	30%
		Independent Consultant	17%
3	Education	Bachelor Degree	24%
		Master Degree	69%
		Phd Degree	7%
4	Working Experiences in EIA (years)	1-5 years	20%
		5-10 years	80%
		10 years and above	-

Source: survey data 2019

As described in the table 4.2, majority of interviewees are in their 30s and 40s. government staff and environmental specialists from development agencies constitute 80% of the sample size. Many interviewees are master degree holders, and most have working experiences in EIA for about 5 years. Their working experiences in EIA reflect the nascent nature of the EIA in Myanmar as the practice began in 2015 only after promulgation of EIA procedure.

Table 4.3: Awareness on Environmental Impact Assessment Related law, procedure, and regulation

Environmental Conservation Law (2012)	100%
Environmental Conservation Rules (2014)	100%
Environmental Impact Assessment Procedures (2015)	100%
National Environmental Quality (emission) Guidelines (2015)	60%
National Environmental Policy Vision & Purpose	42%
EIA General Guidelines (Draft)	50%
EIA Admin Instructions (Draft)	30%
Public Participation Guidelines (Draft)	30%

Source: survey 2019

All interviewees are aware of the essential Environmental Conservation Law (2012), Environmental Conservation Rules (2014), and Environmental Impact Assessment Procedures (2015). 60% of interviewees are aware of the National Environmental Quality (emission) Guidelines (2015) while EIA general guidelines, admin instructions and public participation guidelines are in drafting stage and interviewees find them unaware as stated in the table 3.2.

Table 4.4: Usefulness of the law, rule and procedure

<b>Perspectives on the usefulness of the law, regulation, and procedure</b>	
Provide the political commitment	100%
Serve the framework for EIA procedure	100%
Give clear guideline	60%
Provide good governance and implementation steps	60%

Source: survey data 2019

All respondents said the law, rule and procedure gave the framework to carry out environmental impact assessment as well as the essential political commitment from the government to preserve the environment and mitigate the risks from development projects including road construction. However, only 60% of the respondents said the regulations are clear, have good governance and implementation steps.

Table 4.5: Perspectives on comprehensiveness, ease of compliance and enforcement of rule and regulation

<b>Area</b>	<b>Score (1 minimum, 5 maximum)</b>	<b>%</b>
Comprehensiveness of law, rule, procedure	1	-
	2	15%
	3	54%
	4	23%
	5	8%
	Mean Score	3.2
Ease of compliance of law, rule, procedure	1	0%
	2	15%
	3	85%
	4	0%
	5	0%
	Mean Score	2.8
Enforcement of law, rule and procedure	1	0%
	2	69%
	3	31%
	4	0%
	5	0%
	Mean score	2.3

Source: survey data 2019

On comprehensiveness of the law, rule and procedure, 15% of respondents gave scoring 2 out of maximum 5, while 54%, 23% and 8% gave the scoring 3,4 and 5. In area of easiness to comply, 85% of the respondents gave scoring 3 with 15% gave score 2 and 69% only gave scoring 2 for the enforcement of law, rule and procedure while 31% gave score 3 for the enforcement.

Table 4.6: Areas to strengthen for better enforcement of the regulation

<b>Areas</b>	<b>(% of responses)</b>
human resources	100%
technical capacity	80%
Budget	100%
Communication of law, rule and procedure	60%
Penalties and fines	100%

source: survey data 2019

All respondents said human resources is the area to be improved and same for budget and imposing penalties and fines for breaching the regulations. 80% of the respondents think the technical capacity is the area to be strengthened for better enforcement of the regulation.

### **Governance**

Table 4.7: Key Stakeholders for Governance in EIA

<b>Key Stakeholders</b>	<b>% of responses</b>
Government agencies (MONREC, ECD, GAD, Land record department, Forest Department)	100%
Development Partners	80%
Implementation agencies/project owners	100%
Environmental Specialists, Independent Consultants	60%
Civil society organizations	40%
Communities	30%

Source: survey data 2019

Interviewees identified government agencies (MONREC and its related departments, General Administration Department, Land record department, Forest Department), development partners, implementation agencies/project owners, environmental specialists (consultants), civil society organizations, and communities as important stakeholders.

Table 4. 8: scoring for governance of EIA

	Score	percentage
Governance	1	-
	2	15%
	3	77%
	4	8%
	5	0%
Mean score	3	

source: survey data 2019

15% of respondents gave score 2 out of 5 for governance for EIA process for road projects in Myanmar with 8% for score 4. Majority of respondents (77%) gave moderate score of 3.

### Communication and Capacity development

Communication among stakeholders are mainly undertaken through written EIA procedure and rule. In the ECD, there is no proper focal person for communication because of shortage of human resources. Inquiries and clarification are mainly made through direct contact with focal person for respective projects. Other methods used to communicate among the stakeholders are workshops and meetings on ad-hoc basis.

Table 4.9: scoring for communication about EIA among stakeholders

	Score	percentage
Communication among different stakeholders	1	-
	2	31%
	3	54%
	4	15%
	5	0%
Mean score	2.8	

source: survey data 2019

As described in the table 4.9, 31% of the respondents give score 2 out of 5 for the current stage of communication among different stakeholders, while 54% and 15% gave 3 and 4 respectively.

Table 4.10: scoring for capacities of stakeholders

	Score	Government staff	Development Partners	Consultants	Project owners
Capacities of different stakeholders	1	0%	0%	0%	0%
	2	0%	0%	23%	77%
	3	62%	54%	46%	23%
	4	38%	46%	31%	0%
	5	0%	0%	0%	0%
Mean score		2.4	2.5	2.3	2

source: survey data 2019

Respondents have different views on capacities of different stakeholders. 62% gave the score 3 for government staff and 38% for score 4. Development partners have score of 3 and 4 for 54 and 46% respectively. Consultants have scores of 23%, 46% and 31% respectively for score 2, 3, and 4. Project owners has the lowest score of 77% and 23 % for score 2 and 3 respectively.

## Opportunities

All respondents mentioned that the law, rule and procedure showed the essential political commitment from the government to preserve the environment at the time of developing the county. The respondents also stated that these regulations served as the framework to carry out EIA in Myanmar. They set the standards for the EIA in Myanmar. All stakeholder—from decision makers to the implementers and communities—can refer to the documents as their guidelines. They are satisfied with the existing regulatory measures and saw them as good opportunities to conserve the environment in development projects including road projects.

They expressed the importance role of the regulation such as the environmental conservation law in the developing countries like Myanmar that is now attracting the investments. They also highlighted the regulations as the opportunities to enforce obligation of investors and development projects to comply with environmental conservation. Further the law, rule and procedure are important legal measures to hold accountability of projects to be environmentally friendly.

Since the EIA process in Myanmar is recently developed, there are still rooms for improvement in the governance. The opportunity is the interest and commitment of government for preserving environment. MONREC budget allocation and expenditure review identified that the share of the union budget for MONREC's environmental conservation activities was risen steadily from 0.15 to 0.23% in 2011/12 to 2016/171.

Another opportunity is the interest and support of international development agencies such as World Bank, Asia Development Bank and non-governmental organizations to help identify the issues in governance not only from academic point of view but also from their funding. External funding is also an important contribution. During the last 10 years, the amount of funding to environmental conservation from international development partners was similar to the public budget (Emerton, 2017). From 2007 to 2015, approximately US\$125 million of official development assistance was allocated for environment. Although it fluctuates between years, the amount was increased overtime.

That will help and enforce the relevant ministries to have proper focal person and process for EIA procedures for development projects including road ones. Another opportunity is the chance to deploy relevant staff for governance purpose. Since many stakeholders are aware of the process and current challenges, there is an opportunity to deploy most relevant persons for the required positions.

Having the established procedure and process are opportunities. Respondents believe that EIA in Myanmar being in its infancy is also opportunity. Lessons from other countries can be learnt and incorporated as well as used as evidences. Latest technology can be used to leapfrog. Another opportunity is the possibility to receive technical and financial support from other countries. As there are several areas for improvement, it is possible to discuss with interested countries to provide technical and financial support. There is also opportunity to develop environmentally friendly business as the law and regulation are in place now.

Implementation agencies/project owners, government officials, pollution control department, civil societies and communities as key stakeholders for EMP implementation and monitoring. The EIA procedure and mandatory legally binding the requirement to undertake due diligence for environment as described by the law is the opportunity to enforce project owners to pay attention to preserving environment and mitigating risks.

Given the lack of proper communication and capacity among different stakeholders, the possible opportunity is to establish the communication and capacity development plans

systematically through inclusive discussion with all stakeholders. That approach will allow to explore different options of communication and capacity development activities that can accommodate the strengths as well as needs of different stakeholders.

For the capacity development, there are opportunities to increase capacities by working together with more experienced professionals in both ECD and implementing partners as the EIA process is now become mandatory component of many development projects. There are both international and local experts who can share the technical capacities, although the number is still not large.

## **Challenges**

Expressed challenges are insufficient human resources and competency to govern the EIA process effectively. There are challenges in coordination with different ministries to have comprehensive governance structure that allows to smoothen the process and implementation in timely manner. in delayed submission and approval of EIA reports and poor quality of the reports. Respondents have different opinions on governance and gave score ranging from 3 to 6 out of 10, the most satisfying score one can give. They also would like to see improvement in:

- More competent Human Resources in MONREC
- More Technical Capacity of Consultants / Qualified Consultants
- reporting process
- submission and approval process
- monitoring process

Full compliance with the procedure and process is the challenge. Lack of implementing agencies' proper understanding on the EIA procedure and safeguards requirements is the major challenge to ensure the EIA procedure is complied fully and effectively. Although some agencies and project developers understand the process and procedures, they still want to override the processes and take short cuts. Hence, the mindset of the project developers is the main challenge for compliance of the rules and regulation.

There is no hotline or formal online inquiry channel. In addition, there is no information sharing center to provide timely and updated information. Another challenge is lack of proper communication between different ministries as different ministries have their own ministries' specifications on environment to follow. Hence, better communication to understand one's specification is required.

At the moment, there is no one stop service center to provide all necessary information in one place. All respondents expressed the needs for better implementation of communication among key stakeholders. Main government body, ECD, is taking initiative to provide awareness of environment and importance of EIA in states and regions through consultation workshops, with its limited human resource. Increasing the awareness raising programs on the EIA procedures to the project developers is essential for them to understand and comply with the existing regulations. Further, proper and meaningful communication and consultation with communities is a rarity.

In the knowledge and capacity aspect, different stakeholders have different levels of knowledge. For example, most environmental specialists have high capacity whereas most of the project developers and implementing agencies have quite low capacity. In some cases, some national environmental specialists have very low capacity. Further, weak technical capacity can create challenges in implementation of environmental sensitive measures. For example, land fill or open burning of waste is not good for the environment. However, the alternative solution is not currently available to replace the old method or not able to provide support for alternative methods. The same also applies to the plastics: there is no significant replacements to substitute plastics currently being available now. Respondents suggested to raise the capacities in management, technical, communication, monitoring and evaluation, research and evidence generation.

From the ECD side, there should be a call center or information center where the project developers can reach easily to inquire the required steps and be informed properly. This call center should also be taking care of the reviewing and responding process between the ECD and the project developers. Most of the reviewed EIA reports commented by the ECD were never returned to the ECD. Which means those project developers do not revise the EIA report and resubmit to ECD for final approval.

Respondents expressed the need for improvement for some descriptions to be more specific. The law is now under review to modify. To comply with the regulations, some

respondents stated that there are challenges including complex and strict procedure, requirements being too burden for small to medium enterprises (SME) , lack of communication between the project proponent, third-party consultants and government authority such as ECD/MONREC for implementing of EIA procedure, lack of awareness of EIA by project proponent and insufficient qualified third-party consultants. Hence, ensuring the regulations are clear for all stakeholders is a challenge to be addressed.

Some interviewees also mention there are a few challenges in the interpretation and application of the procedure. For example, the categorization of projects to decide whether EIA is required or not need to be pragmatic. It should be based on the project's risk, location and sensitivity rather than the size of the project as defined by the procedure now (eg, the road length).

For better enforcement of the regulation, all respondents stated the lack of appropriate human resources is the challenge that needs to be addressed significantly. There is no enough competent personnel in both policies making and implementation levels. Given the EIA being recent development in Myanmar and proper preparation to produce competent professionals was not well in place, there is challenge with technical capacity to undertake the EIA and assess them properly. It is the challenge that all respondents mentioned. Another is lack of sufficient budget for enforcement of regulations to ensure the project owners comply with them.

## CHAPTER V

### CONCLUSION

#### 5.1 Findings

Key stakeholders are aware of the existing EIA rule, law and procedure. All expressed them as good start and opportunities to preserve environment in Myanmar especially with incoming influx of investments and development projects. They serve as legal protection for environment and show political commitments to hold account of road projects to be environmentally friendly.

However, there are different opinions on the clarity of the regulations among the respondents. Some mentioned them as clear and easy to follow, and other suggest that it is the challenge for interpretation as they are too general. Some believed few criteria to categorize the environmental impact of road projects needs to be revised; eg. current criteria of using length of the road to define the need of the environmental assessment and management is not appropriate given the complexity of the geographical and social ground situation. Another challenge is the intricacy in balancing between development and environment particularly for government. The needs of development projects have to be deliberated properly against the impacts on the environment. This intricacy sometimes put respective focal persons from the government in challenging situation to do a balanced approach between the two interests.

In the area of governance, stakeholders from government officials to communities play key roles. There are several challenges that respondents pointed out for improvement. Lack of enough human resources is the major challenge. Other challenges include insufficient expertise in responsible organization for various type of road projects, delayed submission and approval of EIA reports. Unqualified reports also cause several delays and inefficiencies.

Respondents are satisfied with the EIA procedure and process, saw them as opportunities to safeguard the environment. However, they are challenges to comply with the procedure and process. Several reasons were provided. One common challenge is the lack of awareness of project owners on environment issues. That has led to them being unwilling to spend resources on proper EIA assessment, EMP implementation and monitoring. Poor

coordination among key stakeholders, no proper consultation with communities and no enough human resources and budget for implementation and monitoring are all expressed as hinderances for current poor implementation and monitoring of EMP.

Communication is mainly done by written documents although ad-hoc consultation meetings and workshops are conducted to communicate among different stakeholders. The challenges include no proper communication focal, hotline or electronic channel for effective communication between stakeholders. Further, there is no regular discussion among the stakeholders. Current community engagement is more of doing it to show as fulfilling a necessary requirement for EIA assessment rather than doing it meaningfully with the interest of environment.

In the area of capacity of stakeholders, there is an opportunity of having some independent environment specialists with appropriate capacities who can perform the EIA and EMP properly. However, the challenge exists to improve that of government staff. There are also some challenges in capacities of civil societies and communities to hold account of projects on environmental safeguard. Their insufficient capacities and knowledge is the challenge to be addressed. Otherwise, the challenge of project owners who seems to have trivial interests in environment issues can not be solved effectively.

## **5.2 Suggestions**

The findings indicated the importance of EIA procedure, law and rule in preserving environment for road projects in Myanmar as good opportunity for safeguarding environment. It is a very good opportunity to have essential political commitment for environmental protection. However, the challenge in clarity of the regulation is an issue to be addressed properly so that it can be applied more effectively. Current review and revision of EIA law would provide more clarity and legal enforcement.

Some criteria used to define the category of environment in the road project needs to be amended. One example is the use of road length to define the environment category of the project. Currently, over 5 miles road projects need to do full EIA assessment. That criteria creates the paradox and raise the important question as it doesn't reflect the ground situation. One example is the building the road tunnel through the mountains. Many tunnels are less than 5 miles, but the construction has significant impacts on environment and ecology. However, current criteria of using 5 miles length as cut-off doesn't require these tunnels construction to have proper EIA and EMP monitoring and evaluation.

There is also no specific sectoral EIA guideline for transport sector which include road projects although mining sector has specific guidelines. That poses the challenges on all stakeholders to have proper references in every steps of EIA process, from conducting assessment to monitoring and evaluation of EMP. Hence, it is essential to have proper guideline for transport sector that will facilitate the effective EIA process for road projects. Another consideration developing such guideline is the selection of appropriate reference. Current EIA procedure is mainly developed by the support of development agencies and content somehow reflect their procedure. This could lead to somewhat increased or decreased complexity for project owners. Hence, new guidelines should be developed to incorporates other factors.

Another common issue is the technical capacity of stakeholders. Since EIA is a recent development in Myanmar, there are shortages of competent professionals. As a result, many people working in environment sector includes those with different background rather than environment specialization. Respondents all agree the imperative need to develop the capacities of stakeholders working for EIA process. Formal capacity development trainings and workshops are needed to provide the tailored capacities development to different stakeholders. When and if available, abroad exchange program and/or academic learning will also be needed. Then cascade training should be performed to share the knowledge from more competent persons to others.

In addition to competencies development, there are fundamental needs to have proper human resources. Currently there is no enough human resources to assess EIA reports, to do proper communication and consultation, implementation and monitoring of EMP. That has led to aforementioned issue of unqualified personnel working in the field, which affect the quality as well as efficiencies. Hence, proper strategy needs to be developed to address the lack of qualified personnel.

There should an online system to improve working mechanism, communication with project developers on review and approval of EIAs, and disclosing reports and information to the public. A system that links the approval of EIAs with monitoring and compliance is also necessary.

EMP implementation and monitoring is the serious issue raised by all interviewees. Only ad-hoc monitoring is done to the projects that was subject to complaints or charges. Since, the monitoring can't be done to all projects, there is no guarantee that the EMP included in the submitted EIA will be implemented properly or not. The result is the difficulty to apply the

legal measure to take action the projects that don't follow the environmental requirements. Interviewees expressed the need of stringent action such as charging significant fine to those who do not comply the regulations. Currently, legal enforcement is not up to the expectations of all interviewees. Hence, the monitoring of EMP and legal enforcement of rule and regulation needs to improve significantly.

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## Appendix

### Key Informant Interview (KII) Questionnaires

#### Personal Information

1. Name of the person interviewed: Ms. /Mr.  
.....
2. Designation/Position:.....  
.....
3. Ministry/Department/Organization:.....  
.....
4. Address:  
.....
5. Telephone: landline: .....  
mobile:.....
6. E-mail: .....
7. Years of experience:  
.....

**A. Awareness of Policy and Laws, Enforcement**

1. Which policy, law, rule, procedure and regulation you are aware of for EIA in Myanmar especially for road projects? Please mention.

2. In your opinion are they good enough? Yes/No  
If yes, what are the opportunities?

(prompts: provide the political commitment; serve as the framework for EIA procedure; give clear guideline; provide good governance and implementation steps)

If No, where is not good enough.

3. Do they need modification/strengthening for better application in road projects? Why and which aspects?

Prompts (constitution related to the environment , law, procedure, rule , governance, implementation steps)

4. What are the challenges to comply with the law/rule/procedure for environmental safeguarding in road projects?

Prompts:(unclear procedure, many steps that can be reduced, unclear format, lack of communication between the submitters, screeners and approvers, time delayed in getting feedbacks and approval, awareness)

5. How much will you rate the comprehensiveness of current policies, law, rule and procedure? (0= not comprehensive at all, 10= fully comprehensive)

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

6. How clear are the law, rule and procedure?

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

7. How confident you are in current enforcement of laws and regulations? (0=very poor enforcement, 10= perfect enforcement)

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

8. Which improvements are needed for enforcement of law, rule, EIA procedure, to implement EMP?

Prompts (more human resources, more technical capacity, budget, more communication about law and procedure, penalties and fines for breaching)

**B. Governance**

9. Whom do you think play key roles to undertake and ensure effective EIA in road projects?

Prompts: (government agencies, development Partners, implementation agencies/project owners, environment specialists, civil society organizations, communities)

10. What are challenges in current governance and organizational structure to implement and enforce EIA and environmental management in road projects?

Prompts (not enough human resources, unclear organization set up, not focal persons for responsibility, unclear reporting process, delayed submission and approval process)

11. What will be your score on current governance for EIA in road projects? (0= very poor, 10= prefect)

0	1	2	3	4	5	6	7	8	9	10
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12. In your opinion, where can governance and structure be improved to increase effectiveness?

Prompts: human resources, organization setup, role for responsibility, reporting process, submission and approval process

**C. Effectiveness of EIA procedure and compliance**

13. What is your opinion on current EIA procedure for road projects? Are they clear effective and clear to comply with? Please explain
14. What are the challenges for following them? Please elaborate.
15. How comfortable you are to comply with the process and procedures?

0	1	2	3	4	5	6	7	8	9	10
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16. What will be rooms for improvements for these procedures and processes to become effective, efficient and complete timely?

**D. implementation and monitoring of Environmental Management Plan (EMP)**

17. Who are mainly responsible for implementation and monitoring of EMP?  
 Prompts: implementation agencies/project owners, environmental specialists, government Officials, Environmental Conservation Department, Civil societies Communities

18. What are challenges encountered in implementation and monitoring of EMP?  
 Prompts:
- Implementation agencies not follow the plan, budget, human resources, owner awareness and commitments
  - Poor coordination among key stakeholders
  - No proper consultation with communities
  - No enough human resources for implementation
  - No enough human resources for monitoring

19. What are opportunities for better implementation of EMP? What will be needed to realize these opportunities?  
 Prompts:
- Better coordination and consultation
  - Technical capacities improvement
  - Human resources

**E. Communication and Capacity Development**

20. In your opinion, how the law, rule, procedure are communicated among stakeholders? Please explain.

Prompts: written documents, conducting Workshop, meetings, consultations

21. How much will you rate communication among stakeholders? (1= very bad, 10= perfect)

0	1	2	3	4	5	6	7	8	9	10
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22. What are the challenges for effective communication among stakeholders?

Prompts:

- Information sharing not regularly
- All information not easily available
- No timely update of information
- Unclear information
- Language barriers (no English available or different between Myanmar and English versions during translation)

23. In terms of capacity, do you think different stakeholders have enough capacity and knowledge for implementation of processes and procedures? Explain?

24. How confident you are with capacity of stakeholders for EIA in Myanmar?

Government agencies: , Project owner: , Specialists/consultants: , Communities/CSOs:  
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0	1	2	3	4	5	6	7	8	9	10
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25. In your opinions, what will be main priorities for capacity development? And your suggestions on what needs to be done to achieve the required capacity?

Prompts: Management , Technical, Communication, Monitoring and evaluation, Research and evidence generation

**F. Other Advice/Information**

26. Any other information/advice which the respondent wishes to make:

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27. Any comments which the researcher wishes to make:

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