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MASTER THESIS

Effectiveness of the Environmental Impact Assessment as a Decision-making Tool for Water-Related Projects in Uganda.

By

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Abstract

This thesis presents the evaluation of Environmental Impact Assessment (EIA) process with specific reference to the water-related projects in Uganda. Data was gathered through document reviews and expert interviews based on an assessment criteria adopted from similar previous studies. The criteria were customised to suit the objectives of the study for assessing procedural effectiveness within the EIA system of Uganda. According to the results of the evaluation, it was revealed that strong EIA structures exist on paper in form of laws and regulations to enable an effective EIA process within the Ugandan water sector. However, the poor implementation of such provisions limits the effectiveness in practice. Factors including poor implementation of policies and legal frameworks, low levels of awareness, weak inter-agency coordination, limited institutional resources capacity, corruption and political interference are among these. With such hindrances to effective EIA process in Uganda, recommendations including more commitment to the national EIA laws and regulations, strengthening compliance commitments and emphasis on project monitoring, increase EIA awareness among EIA institutions and the general public, strengthen inter-agency coordination as well as additional EIA quality control mechanisms and capacity building for EIA expertise. With the above recommendations sustained, the Ugandan EIA process can effectively improve its environmental governance systems and resource sustainability.

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List of Abbreviations and Acronyms

DWRM *Directorate of Water Resources Management*

EIA *Environmental Impact Assessment*

EIS *Environmental Impact Statement*

EIStudy *Environmental Impact Study*

EMP *Environmental Management Plan*

MWE *Ministry of Water and Environment*

NEA *National Environment Act, Cap 153*

NEMA *National Environmental Management Authority*

NGOs *Non-governmental Organisations*

SEA *Strategic Environmental Assessment*

ToR *Terms of Reference*

UAIA *Uganda Association of Impact Assessors*

1. INTRODUCTION

1.1. Background.

The continuous growth in the human population and the need to utilise environmental resources for human development has created overexploitation and resource governance issues, especially since environmental resources are limited and unevenly distributed. *The National Environmental Policy Act of 1970* (NEPA, 2012) developed by the United States marked the first formal national regulatory framework for development in form of an Environmental Impact Assessment (EIA) requirement (Glasson et al., 2012). Later in 1972, during the Conference on Environment and Development by United Nations in Stockholm, environmental challenges related to development were recognised internationally and measures to foster sustainable development were discussed (Sands et al., 2012). As a result of this conference, common principles to guide and inspire the use and protection of the human and natural environment were discussed. Specifically, principle 17 obligated all member states to undertake EIAs as a measure to safeguard the human and natural environment from negative impacts of development projects.

EIA is defined by the International Association for Impact Assessment (IAIA) as the practice involving the identification, prediction, evaluation and mitigation of the relevant effects of development proposals prior to main decisions and commitments (IAIA, 2009). With now over four decades since its introduction, EIA has been advanced in a way that aligns with the growing global environmental concerns (George, 2000; Wood, 2003). After the EIA requirements had become a recognised tool for environmental governance in developed countries, governments of Egypt, Ethiopia, South Africa where among the first transitional countries to adopt the EIA requirements and implementation (El-Fadl & El-Fadel, 2004).

In many African countries, most social and economic developments are considered as recent and associated with environmental calamities. The thesis thus dwells more on African countries whose developments such as agricultural expansion and industrial activities have led to uncontrolled urbanisation whose detrimental effects

to environmental resources is already significant. Even though countries like Egypt, South Africa and Ethiopia enacted environmental policies and framework for EIA as early as the 1980s, these efforts have not significantly curbed environmental degradation ever since (El-Fadl & El-Fadel, 2004).

The thesis mainly focuses on the Ugandan environmental systems. In Uganda, the practice of EIA was first introduced as early as 1995. The EIA practice was enshrined under the *National Environment Act (NEA) Cap 153* and *Environmental Impact Assessment Regulations of 1998*. Under these legislations, projects categorised as detrimental to the environment are all obligated to obtain EIA approvals and permits prior to operations (NEMA, 2009; Runhaar et al., 2013). The water resources sector was specifically examined for the thesis due to the several challenges recorded over time (NEMA, 2010). The country is well endowed with numerous freshwater resources ranging from big lakes, rivers, wetlands and groundwater aquifers. However, these resources are unevenly distributed with some areas experiencing floods while others drying up in droughts. Thus, the availability of water resources in respect to quantity and quality could be a big limiting factor to socio-economic development. Therefore, the current environmental situation in Uganda prompts the need to analyse the effectiveness of the EIAs as environmental governance and decision making tools with a focus on projects in the water resources sector.

1.2. Problem statement

Environmental assessments have been widely labelled as one of the most effective environmental governance and policy tools (Chanchitpricha & Bond, 2013). However, in many countries even where EIA practices are profound, various challenges relating to environmental degradation from development projects are ongoing (Retief, 2010; Fischer, 2014). In Uganda for instance, legal and regulatory frameworks regarding EIA have existed since the 1990s. Still, environment-degrading activities, especially in the water resources sector have remained almost unchecked (Ecaat, 2004). Such environmental damages have provoked a question into the effectiveness of the existing EIA frameworks in terms of their procedural

application for environmental governance in Uganda. Therefore, an analysis of whether the established EIA process conforms to the established principles and provisions for an effective EIA process forms the basis of this research.

1.3. Justification of the Study

EIAs can contribute to protecting and conserving natural resources use and socio-economic transformation, provided that they are effectively implemented (Jay et al., 2007). In Uganda, several environmental protection strategies and principles such as the use of EAs have been formulated to contribute to the effective environmental governance. The EIA practice itself has been in place for more than twenty years now but its actual contribution towards maintaining environmental quality, restoration and environmental governance is not well documented (Eccat, 2004).

Therefore, since EIA institutional structures and legal frameworks exist in Uganda, there procedural effectiveness in terms of achieving the desired environmental goals has not been extensively analysed over time. Therefore, this thesis focused on evaluating the EIA procedural effectiveness within the Ugandan system. This was intended to provide evidence knowledge on how; the available EIA institutions and structures operate; the detailed provisions in the legal frameworks available and; the extent to which all the available mandates are procedurally implemented in reference to the widely accepted EIA steps.

This thesis therefore contributes relevant empirical research on the subject, especially related to the EIA effectiveness in the Ugandan practice. Further, this thesis can also be used to initiate policy changes within the water sector based on recommendations that are made towards the effectiveness of EIA.

1.4. Research Objectives

This thesis focuses on the procedural effectiveness of the Ugandan EIA system. Procedural effectiveness involves the compliance to the existing and acceptable EIA standards and principles within the system to which they apply (Sands et al., 2012).

The specific objectives of this thesis are as follows:

1. To evaluate the procedural effectiveness of the EIA system within the water resources sector in Uganda
2. To provide recommendations for the improvement of the procedural effectiveness of the EIA system of the water sector in Uganda.

In order to achieve these objectives, the current EIA practices were analysed by taking into account both the systemic and foundation criteria of effectiveness. Systemic criteria convey the quality assurance in EIA legislation, administrative and process practice, while the foundation criteria comprise of those activities undertaken to improve EIA system effectiveness. Since the purpose of the thesis was mostly descriptive based on the formal procedural requirements for EIA and its practice elements, the above criteria was found fit to evaluate effectiveness in the Ugandan EIA system.

1.5. Research Questions

The objectives of the thesis focused on evaluating the existing EIA procedural practice within the Ugandan system, and the research questions were formulated accordingly. The assessment criteria developed by Wood (2003) guided the formulation of the research questions. The criteria were chosen for the fact that they allow for a comprehensive analysis of the EIA system based on its existing institutions and legal frameworks. The procedural effectiveness was considered appropriate to evaluate the extent to which the EIA process implementation is carried in relation to the provided institutional and legal procedural mandates. Further, procedural effectiveness provides insight knowledge for mechanisms needed to improve the legislative, administrative and EIA process of any EIA system. Consequently, three research questions below were formulated to accomplish the objectives of this study:

1. How effective is the EIA procedural practice within the water resources sector of Uganda?

a) How is the EIA system performing against the EIA systemic criteria?
b) How is the EIA system performing against the EIA foundation criteria?

2. What are the strategies to improve the EIA system effectiveness in Uganda?

Chapter two provides a review on relevant literature related to the EIA practice in the water resources sector of Uganda and the dimensions of the study evaluation criteria. Then chapter three elaborates on the research design and methodology framework for the research. The research results are discussed in *chapter four* and conclusions drawn in *chapter five*.

2. LITERATURE REVIEW

This section reviews the major aspects of the theoretical framework for the study, including the EIA steps as applied within the water sector of Ugandan, dimensions of effectiveness and concludes with an assessment criteria adopted for effectiveness evaluation.

2.1. Procedures for EIA in Uganda

In Uganda, the EIA process involves steps such including; the preparation of a project brief, screening, scoping, EIS, review of EIS, decision-making and action monitoring for impacts (NEMA, 2009). These procedures are elaborated in the different steps further below;

Step I: The process begins with the screening phase which involves the project conception where the developer forwards a project brief to the Ugandan National Environmental Management Authority (NEMA) and Directorate of Water Resources Management (DWRM) the water sector lead agencies. The project brief *(appendix 4)* summarises all basic information and activities pertaining the proposed project so as to establish the level of expected environmental impacts and their implication. Therefore, the project brief is written with the objective of determining if the developer proposed development action;

i. Has or not significant impact on the environment. If no potential adverse effects to the environment are found, further EIA procedures may be exempted and appropriate decision made regarding project implementation approval.
ii. Is understood to have some adverse environmental outcomes for which mitigation actions are directly or indirectly identified or through means of EIA review. The project may otherwise be approved if satisfactory mitigation measures have been incorporated for the identified impact on the environment.

iii. Involves significant adverse impact whose mitigation measures cannot satisfactorily be identified therefore requiring a more comprehensive EIS.

Step II: In reference to the contents of the project brief, NEMA is the statutory body mandated to approve any project in consultation with DWRM. However, not all proposed development projects may necessarily upset the environment due to their variances, operation scale and local settings. Therefore, project screening is important in order to determine the sufficiency of the project brief based on the extent it details the environmental concerns involved.

Step III: NEMA informs the developer of the decision outcome whether further comprehensive assessment is needed or not. If the Project Brief sufficiently addresses relevant environmental concerns, then approval can be based on that without further assessment necessary.

Step IV: Contrariwise, if the Project Brief is not sufficient for an informed decision, then a full EIS and scoping which is the pre-feasibility study describing the probable significant environmental impacts is recommended. Thus, based on the scoping results, the Terms of Reference (ToRs) are prepared and approved by NEMA.

Step V: The ToRs provide the basis under which the EIS is then carried out during the Feasibility study.

Step VI: After the assessment process, the EIS is submitted to NEMA for review in consultation with the DWRM and other stakeholders. Subject to the kind of environmental impacts, the review procedures may involve a contract procurement with public compensation and resettlement specifically where controversial concerns on private property and trans-boundary impacts or outstanding social distresses are raised.

Step VII: A final decision is at that juncture made on the project based on the evaluation of the EIS in accordance to environmental impacts. A Certificate of

Approval of the Environmental Impact Assessment is then issued by NEMA according to the EIA regulations of 1998 and NEA of 1995.

Step VIII: After approval, the EIA process continues with the defects liability period which involves post-assessment measures of environmental monitoring, operation and performance audits. This requires both self-monitoring by the project developer, on top of monitoring and enforcement by NEMA and DWRM. The steps involved in the EIA cycle of water sector related projects in Uganda are summaries in *figure 1* below.

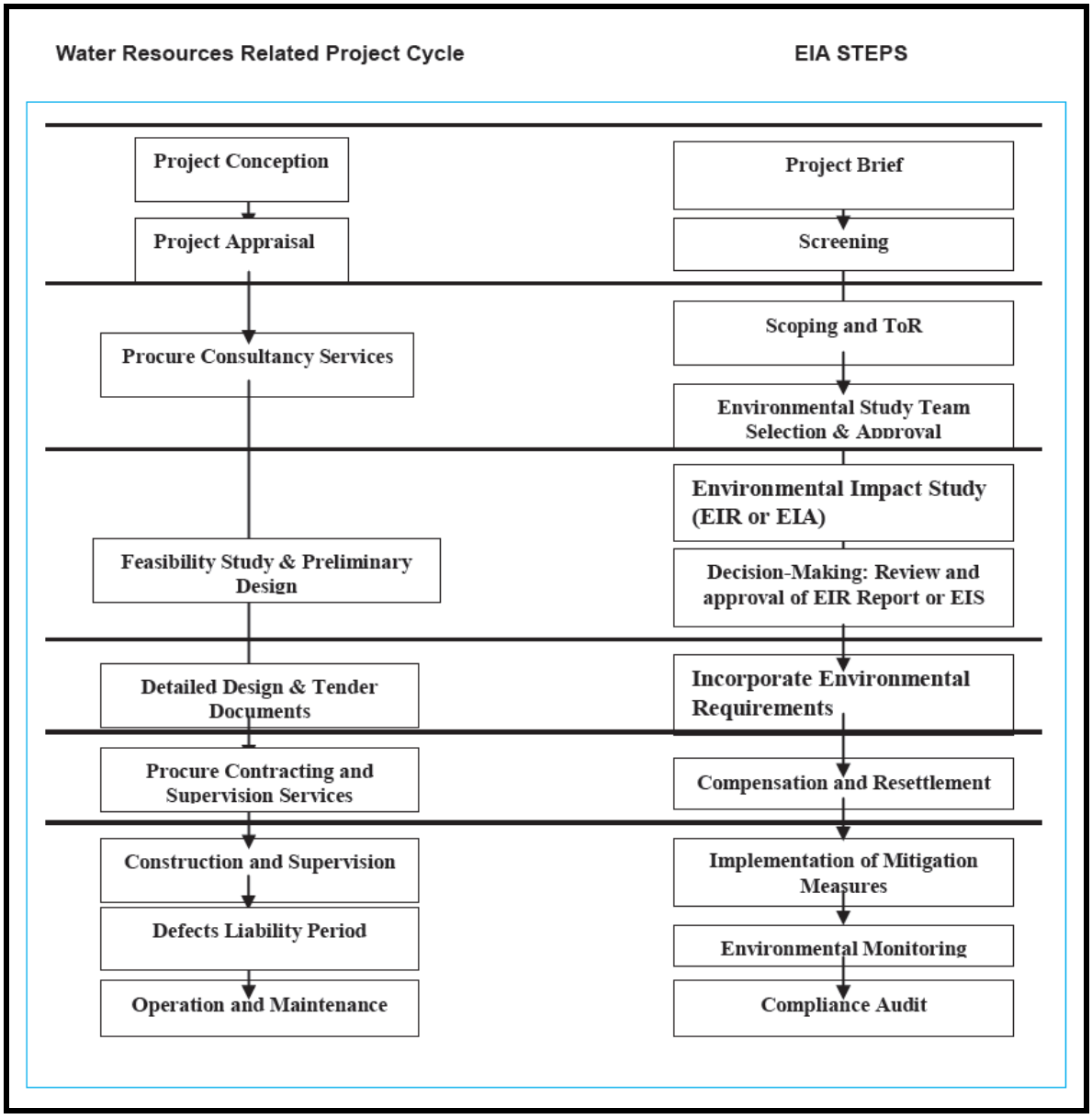

Figure 1: *Steps involved in the EIA process cycle for water resources related projects*

Source: Water Sector EIA Guidelines, 2011.

2.2. Understanding EIA effectiveness

The principles of EIA effectiveness date back from the 1960s at a time when environmental degradation warnings were first commonly recognised and more environmental awareness given more publicity. As a result, environmental assessments have been recognised as a technical tool for evaluation and decision-making basis (Jones et al, 2007).

The effectiveness of EIA has been described differently based on different evaluation criteria (Theophilou et al., 2010; Morgan, 2012). Thus, EIA systems have been often judged as ineffective in one evaluation and effective in another. However, study dimensions depend on the evaluation intentions of social, ecological or economic values (Rozema & Bond, 2015). Therefore, the results from any evaluation of effectiveness should only be considered within its context (Sadler, 2004; Morgan, 2012; Bond & Morrison-Saunders, 2013). Recent studies have explored approaches that focus on establishing conceptual or empirical analysis (Chanchitpricha et al., 2011). Although different dimensions for evaluating EIA effectiveness have been applied over time, procedural, substantive, transactive and normative dimensions have been widely used (Sadler, 2004; Cashmore et al., 2004; Chanchitpricha and Bond, 2013). These dimensions are elaborated in *table 1.*

Effectiveness Dimension	**Attributes**
Procedural effectiveness	*This is the most-commonly used dimension for evaluating EIA effectiveness (Sadler, 2004; Bond et al., 2013). It mainly focuses on the principles of good practice and compliance to stipulated procedures. Due to the fact that effective EIA adaptation is very vital for sustainable resource management, this approach focuses on the practical context with in which EIA is operated (Chanchitpricha & Bond, 2013; Fischer, 2014).*
Substantive effectiveness	*This dimension is related to EIA outcomes in terms of the proposed objectives being met. Therefore, it focuses on evaluating the extent to which EIA contributes towards environmental protection and conservation goals. Although this criterion offers a great measurement method, it is not frequently used (Cashmore et al., 2004; Glasson et al., 2012;*

	Chanchitpricha & Bond, 2013; Rozema & Bond, 2015).
Normative effectiveness	*This dimension focuses on the normative goals to determine effectiveness associated with the process as the established legislations detail. The lessons learned can then provide recommendations to improve the system. However, this dimension is poorly considered as an effectiveness assessment than any other assessment approach (Cashmore et al., 2004; Chanchitpricha et al., 2011; Gibson, 2013).*
Transactive effectiveness	*This dimension primarily focuses on whether EIA delivers objective goals at least with low costs in terms of time and financial support resources invested in the EIA practice. Due to less availability of literature regarding this dimension, it is not commonly used to measure effectiveness (Chanchitpricha & Bond, 2013; Rozema & Bond, 2015).*

Table 1*: Dimensions of EIA effectiveness.*

Recent EIA effectiveness studies mainly focus on substantive effectiveness evaluation (Fischer, 2014). However, procedural effectiveness is an important evaluation dimension for a transitional country like Uganda. Procedural effectiveness dimension is important in gauging whether EIAs are carried out as mandated to achieve their environmental governance purpose. Further, the thesis objectives mainly focus on evaluating the extent to which EIA good practices exist and how they are implemented within the Ugandan system. Therefore, the researcher judged procedural effectiveness to be best choice to determine EIA effectiveness according to the established research objectives.

On the other hand, since the procedural effectiveness is reported as the most applied dimension for EIA effectiveness evaluation (Fischer, 2014). Accessibility of data from previous related studies was judged by the researcher to be easier to collect compared to the least applied dimensions especially in transitional and developing countries.

2.3. Evaluation of EIA procedural effectiveness

Many researchers have used different approaches to develop models for evaluating the effectiveness of EIA processes (Annandale, 2001). Depending on the perspectives, expectations and interests of the actors involved, a number of

approaches have been used to evaluate the effectiveness of EIA (Bond et al., 2013). However, Christopher Wood introduced an EIA evaluation model emphasising procedural evaluative frameworks and their application practice with in an EIA system to which it applies (Wood, 2003). Since then several researchers have used this model to evaluate EIA systems of developing and developed nations (Riffat and Khan, 2006; Nadeem and Hameed, 2008). The model is executed on a descriptively orientated criterion with focus on the systematic and foundation criteria aiming to evaluate the EIA effectiveness and provide ways of improving it (Wood, 2003; Fischer, 2014).

Systemic criteria are designed to convey the quality assurance in EIA practice and administration while foundation criteria involve those activities undertaken to improve EIA system effectiveness. This approach for evaluating effectiveness has been applied widely especially in developing and transitional countries (El-Fadl and El-Fadel, 2004; Nadeen and Hameed, 2008; Bond et al., 2013a). Therefore, the study adopted and customised these evaluation criteria based on Wood (2003) focusing on systematic and foundation criteria. These are elaborated in *table 2* below.

Systemic Criteria	**Foundation Criteria**
a. EIA Legislation *1. Existence of Legal framework for EIA.* *2. Provisions for appeal by the developer or the public against decisions.* *3. Existence of legal or procedural specification of time limits*	**d. Measures to improve EIA Effectiveness** *21. Existence of general and/or specific sectoral guidelines.* *22. Existence of EIA system implementation monitoring* *23. Presence of technical expertise in conducting EIA* *24. Existence of Trainings and capacity-building*
b. EIA Administration *4. Existence of a competent authority for EIA and environmental acceptability* *5. Existence and provisions for an EIA review body* *6. Specification of sectoral authorities' responsibilities in the EIA process* *7. Level of coordination among EIA agencies and control bodies*	

c. EIA Process *8. Existence of a project briefs requirement and review* *9. Existence of specified screening categories* *10. Provisions for a systematic screening approach* *11. Existence of a systematic scoping approach* *12. Requirement to consider alternatives* *13. Existence of specified EIA scoping report content* *14. Requirement for mitigation of impacts* *15. Existence of an EIA review provision* *16. Provisions for public participation in EIA process* *17. Existence of a systematic decision-making approach* *18. Existence of specified EIS report content and format* *19. Requirement for Environmental Management Plans (EMPs)* *20. Requirement for impact monitoring*	

Table 2*: Criteria to evaluate the procedural effectiveness of EIA.*

The effective evaluation criteria model that Wood's first developed in 19994 originally consisted of fourteen evaluation criteria. It is based on the stages involved in the EIA process with focus on operation requirements of procedural effectiveness within the EIA system (Wood, 2003). Over time, it has been used by several scholars in studies related to comparative analysis (Riffat & Khan, 2006) and EIA system performances (Ahmad & Wood, 2002) for both developed and developing countries. The wide successful application of this criteria in EIA effectiveness evaluation further proves that the Wood's criteria serve as a tested method suitable for achieving the research objective of this thesis.

However, the researcher modified the Wood's evaluation model from fourteen to twenty-four criteria categorised into systemic and foundation criteria. The systemic criteria were further categories into three groups simulating the EIA practice involving legislations, administration and the EIA process. The foundation criteria did not receive such categorisation treatment because they are meant to act as a checklist for presence of capacity building within the whole EIA system. All this

categorisation was done to provide adequate evaluation details to make good judgements on the EIA effectiveness in the Ugandan system context.

The results of each criterion is elaborated in *chapter 4* both as stipulated in documentation and practice with relevant discussion under the related criteria themes elaborated.

3. RESEARCH DESIGN AND METHODOLOGY

This chapter describes the research design with a detailed strategy and methods used to answer the research questions so as to achieve the objectives of the study.

3.1. Research Framework

This study aims to evaluate the effectiveness of the Ugandan EIA system based on the existing EIA procedures and to make recommendations to enhance its effectiveness. The research framework in *figure 2* below illustrates this schematically.

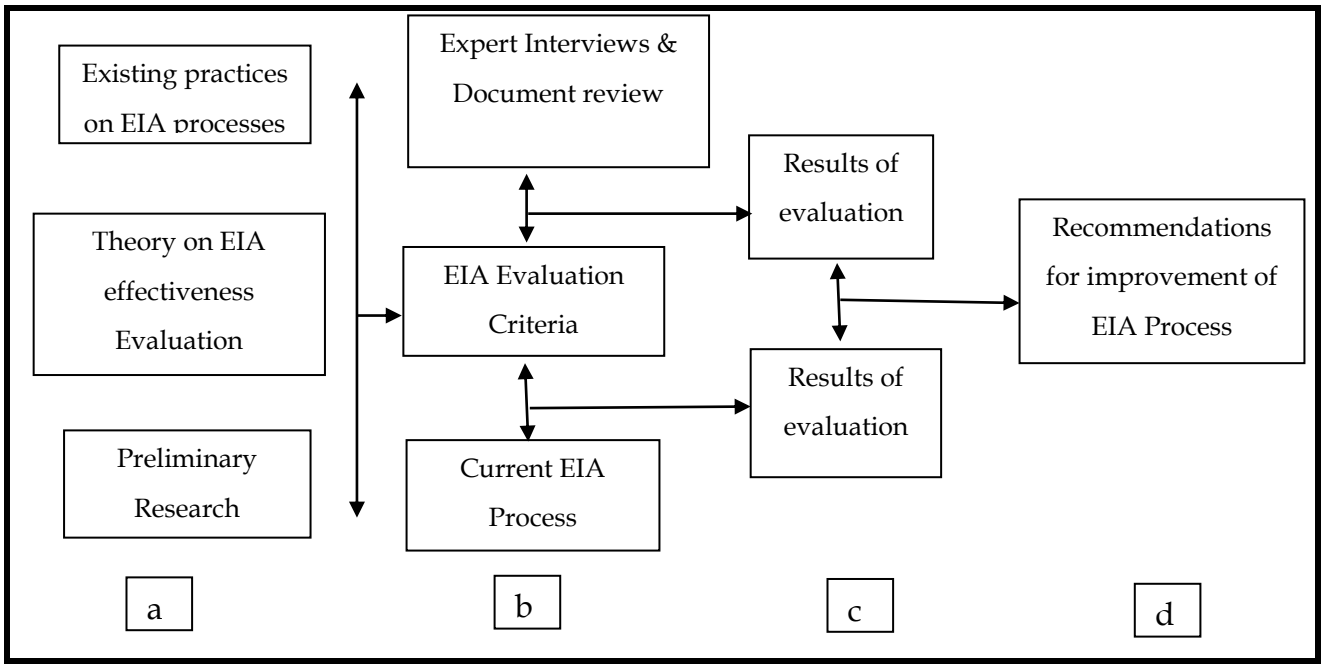

Figure 2*: Research framework for the EIA procedural evaluation.*

Source*: Adapted from (Verschuren & Doorewaard, 2010)*

a) The existing practice of EIA systems and process evaluation offered the baseline for selecting the evaluation criteria;
b) The selected criteria were used to analyse and evaluate the current EIA system in Uganda for projects related to water resources. For this purpose, interviews were conducted with EIA experts including legislators, administrators and practitioners that have experience in implementation and

evaluation of EIA processes. Under this the relevant legislation, policy documents and guidelines were critically reviewed;

c) An evaluation of the above documents based on chosen criteria and interviews provided results and;
d) Recommendations for improving the current EIA system in the water resources sector hence ultimately contributing to a more effective EIA process in Uganda.

3.2. Research Strategy

The study employed an evaluative strategy with the assessment criteria to gauge the procedural effectiveness of the EIA practice in the water resources sector of Uganda as the case study.

3.2.1. Research Unit Selection

For this study, the research unit was the EIA system of Uganda, particularly its theory (documentation) and practical procedural application in water resources sector governance. Since EIA is implemented on a project basis, the water related projects and actors involved were used as the observation units to gauge effectiveness.

3.2.2. Research Boundary

In order to determine and manage the limitations of study, the following research boundaries were established:

Sectoral boundaries: Although EIAs are carried out in many sectors, the study was restricted to the water resources sector including the related actors and projects in this sector. This was partly due to the time constraint for which the study could be conducted and also based on the experience of the researcher with in the water sector of Uganda.

Temporal boundaries: Due to the fact that the time needed to complete the thesis was limited, only water related project documents that were completed at least in the last

five years were used for the study to avoid dealing with large volumes of data in a short period.

Ongoing versus completed EIA processes: The study was limited to the projects whose EIA procedural documents were completed or approved, rather than investigating ongoing EIA cases or rejected ones.

3.3. Research Material and Sources

This study was primarily based on qualitative data from both primary and secondary sources. The data required for the evaluation was based on the scientific literature review, analysis of legislative and administrative frameworks, interviews with EIA officers and practitioners (*see Table 2*).

Two types of data sources were used as elaborated below.

i. Document Reviews

Several documents including the relevant legislations, policies and laws of Uganda related to the EIA process from relevant EIA, water resources authorities and environmental practitioners were reviewed. Such documents as the National Environmental Act, EIA regulations, Water policy, Water Act and EIA guidelines of Uganda (see bibliography for full lists) were studied to give an insight knowledge into the legislative framework for EIA in Uganda. These documents were accessed from the National Environmental Management Authority library and online sources.

ii. Interviews

Interviews were conducted with fourteen EIA practitioners *(Appendix 9)* that are involved in the implementation and evaluation process, mainly in the water sector of Uganda. Interview respondents included three government EIA authorities, and eleven independent EIA practitioners and water resources consultants involved in the EIA processes. The interview guide used to gather the relevant data and

information is attached as *appendix 10* and data collection methods elaborated in section 3.4.1 below.

Table 3: *Research Data and Information Collection Matrix*

Research Questions	Data/ Information Required	Sources of Data	Data Collection Method
1. How effective is the EIA procedural practice with in the water resources sector of Uganda?			
a) How is the EIA system performing against the EIA systemic criteria?	Adherence to the Legal framework of EIA	Secondary Data: Legal and regulatory framework Documents	Document Content Analysis
		Primary Data: EIA expert reviews	Face to face individual interview
	Legal specification of time limits	Secondary Data: Literature review	Content Analysis and observations
		Primary Data: EIA expert reviews	Face to face individual interview with EIA officers and independent Practitioners
b) How is the EIA system performing against the EIA foundation criteria?	Roles and Competence of EIA authorities	Secondary Data: Legal and regulatory framework documents	Document Content Analysis
		Primary Data: EIA expert reviews and opinions	Document Content Analysis, Interviews with EIA authorities and Practitioners
	Collaboration and information flow to and from local communities, proponent, practitioners and willingness to involve in the process	Secondary Data: Legal documents, Published sector reports	Legal document Content Analysis
		Primary Data: EIA expert reviews and opinions	Face to face individual interview with EIA authorities and Practitioners
2. What are the strategies to improve EIA system effectiveness in Uganda?			
	Actors' understanding of legal and policy practice of EIA regarding environmental governance, their personal views, knowledge and experience.	Secondary Data: Published sector reports, journals and articles.	Document Content Analysis
		Primary Data: EIA expert reviews and opinions	Face to face individual interview with EIA officers and practitioners, Published reports and document review and analysis

The mixed use of the above data collection tools was vital in emphasizing the reality of the EIA process practice or the research. Interview interactions with actors permitted more ground information and understanding of the cross-functional dynamics of the whole EIA system.

3.4. Data collection and Analysis

3.4.1 Data collection

This study largely employed a qualitative data analysis approach using modified procedural evaluation criteria from Wood (2003) to accommodate and specify the ideal EIA system requirement of Uganda. The researcher generated a set of twenty-four criteria to assess both the EIA process effectiveness in theory and practice with in the Ugandan EIA system. The assessment for the theoretical effectiveness was assessed with a ***Yes*** for existence or a ***No*** for non-existence. Further, the implementation in practice was assessed through quantifying the used criteria on the scale of zero to three to determine procedural practice levels. This scale is elaborated in *table 4* below.

EIA in practice	**Scale**
Not implemented in practice	0
Poorly implemented	1
Partially implemented	2
Practice fulfils requirement	3

Table 4: ***Scale for EIA theory effectiveness in practice.***

Not implemented in practice; refers to situations where legal documentation may or may not exist, thus nothing is practically implemented.

Poorly implemented; relates to less being done in the EIA practice as opposed to the level mandated by the legal documents.

Partially implemented; refers to situations where moderate form of implementation is done precise in practice but due to some challenges, it is not satisfactorily implemented as mandated or stipulated in legal documents.

Practice fulfils requirement; situations where the implementation is carried out in accordance to the legal document provisions.

Data collection commenced after an initial planning based on the relevant literature review of the EIA process in Uganda and selection of suitable EIA procedural process evaluation criteria. Subsequently, interview questions were formulated in line with the research objective. Thereafter the selection of interviewees was done based on the following selection criteria:

a) EIA practical experience of at least five years in Uganda
b) Experience with conducting EIA for projects related to the water resources sector of Uganda
c) Possession of a national certification number to practice either as a team leader or a team member

After establishing a good background check to ensure that the potential respondents fulfil the selection criteria, an initial contact with the potential respondents was made and the purpose of the study defined. Each potential respondent was contacted once by email and/or through phone call to set a date and to confirm a convenient venue and readiness to participate in the interview. Fourteen respondents including three government officers and eleven independent experts *(Appendix 2)*, were interviewed within 5 weeks of field work.

With the researcher's previous experience in working with government and private sector agencies in Uganda, several strategies were used to overcome data and information collection difficulties especially related to openness from interviewees.

a) Warranting the respondents, the option of anonymity and confidentiality of data and information and all respondents agreed to mentioning their names explicitly in this thesis except for off record dialogues.
b) Option of or not recording the interviews. Mostly notes were taken and only two interviews were voice recorded.
c) Provision of opportunity to make off record dialogues on sensitive matters often involving high profiles political personalities or administrators in the country. These were used to emphasise arguments and sensitive examples involved in the EIA system of Uganda.

These provisions prompted an in depth discussion that allowed respondents to give more information on the subject with more sincerity. The interviews usually lasted approximately 45 minutes, but there were incidences when some lasted shorter or longer depending on the extent of interaction and willingness to share information from the interviewees.

3.4.2 Data Analysis

The analysis of collected data was done as soon as the set data was gathered for the day and data was then refined for the next set of interviews. This enabled systematic and sequential aspects of data analysis for the study process as all possibly relevant features of the study were perceived.

Data from various documents and interviews were grouped based on the evaluation themes together with interview notes so as to ensure data credibility and to avoid bias. In addition, the modified Wood's criteria were used to evaluate the EIA process. To avoid bias from categories of data gathered, the researcher studied the gap between the existing EIA in theory and in practice using a scale to operationalize

the modified Wood's criterion and graphs were used to study the levels of effectiveness as illustrated schematically in *figure 3* below.

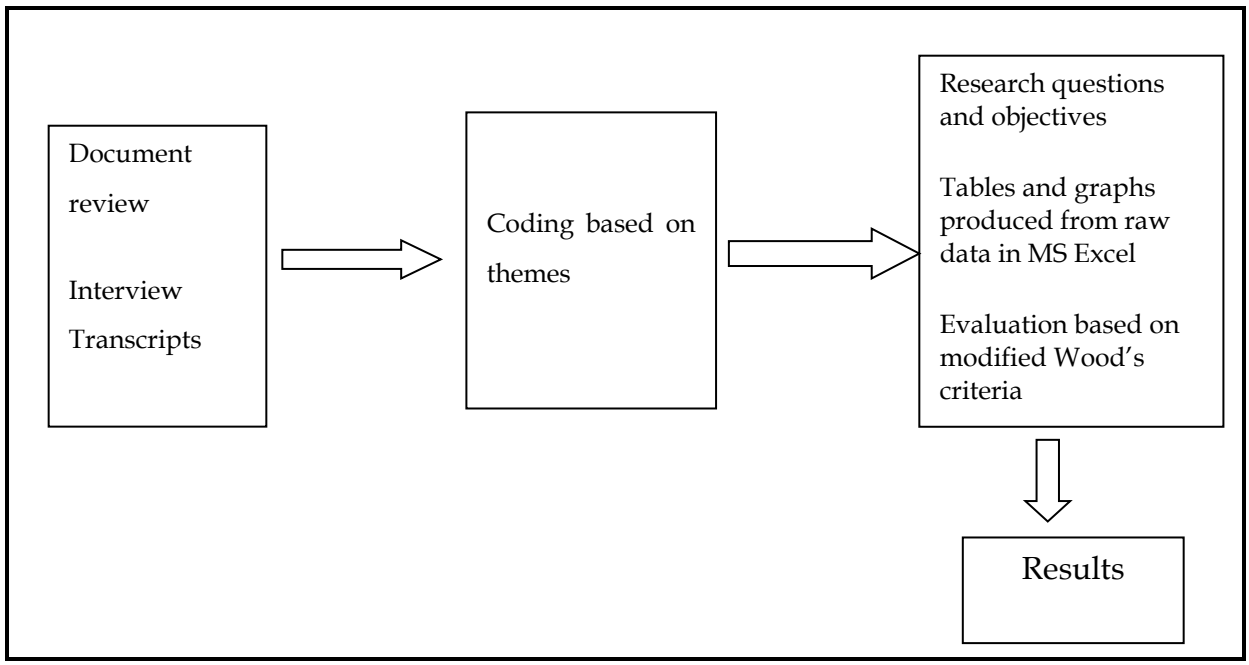

Figure 3: ***Schematic Diagram of Data Handling and Analysis***

The next chapter of the thesis presents the findings and their discussion.

4. FINDINGS AND DISCUSSION

This section presents the evaluation results of the EIA system effectiveness within the water resources sector of Uganda. The results are discussed according to the research questions of the study beforehand.

4.1. Effectiveness of the EIA procedural practice with in the water resources sector of Uganda.

Although a number of respondents regarded the EIA system of Uganda to be satisfactory in terms of theoretical setup from the national EIA legislations and guidelines, in real practice the situation was reported to widely vary from the theoretical concepts. The researcher attributed this difference to the affiliations of the respondents as independent and government affiliated interviewees adopted a different perspective for the EIA procedural effectiveness. Nevertheless, both the government and independent consultants shared the same view to the EIA procedural process as being very satisfying theoretically with most of the EIA legislations and administrative institutions established. However, the functionality of these legislations and administrative agencies was reported to be limited in practice with both categories of respondents having a different opinion based on affiliations. All the government affiliates claimed a high level of procedural effectiveness with in the Ugandan EIA system, while independent consultants provided a varied response for the process in practice. The researcher observed this difference in affiliation had an influence on the nature of the opinions shared and individuality of the judgements especially in terms of EIA procedural practice effectiveness.

It was revealed during the interviews that in many cases, a wide range of external factors such as political interference and affiliations, economic interest, awareness levels on roles of EIA in environmental management and high levels of corruption that hampers overall EIA effectiveness. Due to such mixed responses from

interviewees, the researcher operationalised the modified Wood's criteria in order to analyse the responses to justify the extent of EIA effectiveness in Uganda.

4.1.1. Evaluation based on Systemic Criteria for EIA effectiveness

As explained earlier, the Wood's criteria are based on both systemic and foundation criteria. The systematic criteria of effectiveness are evaluated under three components, namely; EIA Legislations, EIA administration and the EIA process, which are elaborated below.

a) EIA Legislations

1. *Existence of the legal frameworks for EIA*

The Ugandan EIA system is backed by a number of EIA specific policies, regulations and laws meant to stimulate the EIA process for development projects. These legislations examined are elaborated below.

The National Environment Act (NEA), Cap 153, 1995: This is recognised as the first specific EIA legislation enacted under the 1995 National Environment Statute which later became the NEA. This act encompasses EIA general principles as a prerequisite for proposed development projects and repairs that might significantly upset natural resources or environmental wellbeing. It also established the National Environment Management Authority (NEMA) as the authority responsible for all environmental management activities. The NEA is the pillar of EIA procedural effectiveness with in the hierarchy of EIA administrations and institutions.

According to the independent environmental practitioners, the NEA has overlapping administrative mandates given to NEMA and other agencies thus at times conflicting procedural and compliance effectiveness. In response to the above claims, in early 2016 the NEA review process has been underway with the draft bill tabled to the Ugandan parliament for review and enactment (Luyima, Personal communication, 20/07/2016). The researcher therefore views this first NEA review

process that comes after 20 years from enactment in 1995, as the first review aimed at rectifying most of the ongoing legal challenges especially related to administrative and institutional mandates as expressed by interviewees.

The Environmental Impact Assessment Regulations, 1998: These regulations are provided for by the NEA to elaborate the details of the EIA process and roles that various stakeholders play. Under the regulations, it is obligatory for all development projects with significant impacts on the environment to be subjected to EIA process before implementation. These projects include all major extensions, repairs or routine maintenance of any existing projects, as listed in the Third Schedule of the NEA *(Appendix 1)*. Projects for water sector listed in the Third Schedule comprise of;

- Dams (storage dams, barrages or weirs),
- Rivers (river diversions and water transfers between catchments or flood-control schemes) and
- Water resources where drilling for the purpose of exploiting ground water resources is involved including those of geothermal energy purposes.

The regulations mandate NEMA to notify the proponent, the Directorate of Water Resources Management (DWRM) and other key stakeholders of their decision allowing the project to proceed in cases where the EIA report meets the conditions for that kind of project. The regulations specify for a time limit of 90 days within which NEMA must issue the decision on EIA process.

According to the researcher, this provision within the regulations demonstrates a good level of transparency within the EIA system of Uganda in terms of legislative backing towards the practice. Further, document review revealed that the regulations are also undergoing review to incorporate certain aspects of the dynamic environment and the EIA process. This was also confirmed during the interviews with several EIA consultants who suspected the draft regulations to be ready by that

time (Kusiima, personal communication, 19/07/2016; Kahangirwe, Personal communication, 27/07/2016).

The Water Act, cap 152 of 2000: This act promotes the rational management, equitable use and supply of all water resources in Uganda. In relation to the EIA process in the water sector, the act requires all developers, whose projects might significantly impact water resources, to carry out extensive EIA to mitigate and monitor such impacts. Such projects for both surface and underground water projects are listed in *appendix 2* and *appendix 3* respectively as provided for in the Act. In addition, the Act mandates DWRM to issue permits related to water use, abstraction and wastewater discharge to developers so as to prevent water pollution while also managing and monitoring water resources in a sustainable manner.

Although Wood's criterion for presence of legal backing is fulfilled and the researcher views the legislative mandates as considerably well elaborate, the operative way to ensure EIA procedural effectiveness was viewed by several respondents as poor (Kusiima, Personal communication, 19/07/2016).

This dismay was linked by the respondents to incidences involving political powers and corruption where some developers can by-pass the law using their financial power or political influence. Ultimately such malpractices have contributed negatively to the environmental management and therefore making the EIA ineffective at achieving environmental governance. Therefore, it is clear that in Uganda the EIA process satisfies this criterion in theory, but in practice it is completely far from the ideal practice.

2. *Provisions for appeal by the developer or the public against decisions*

In reference to appeal against the decision, the Ugandan EIA system under EIA regulation 38 (1) lists the conditions of an appeal in case of aggravation in respect to the EIA process decision made by the NEMA Executive Director. It is stated that the

proponent may within 30 days' appeal to the High Court of Arbitration in such cases where a developer or proponent is distressed with EIA decision outcomes. These provisions signify a good level of transparency and justice within the EIA system of Uganda theoretically. The research revealed that in practice, other factors like political influence and corruption (For confidentiality and sensitivity of the examples are not mentioned) make the fulfilment of the provisions in practice not very effective and therefore being fulfilled partially.

3. *Existence of legal or procedural specification of time limits*

Under the EIA regulations of Uganda, a time limit for which feedback from the EIA authority should be made is specified therefore fulfilling the time limit criterion in theory. However, several EIA practitioners interviewed raised concerns about NEMA as the supreme authority not giving feedback concerning the EIA decision as stipulated under the regulations. Hence, this inconveniences most project plans especially where the EIA certificate is a prerequisite from the developer prior to any development loan acquisition (Tumusiime, personal communication, 21/07/2016; Auruga, personal commination, 20/07/2016). Subsequently, the criterion for time limit was not met for Uganda in practice.

The Ugandan EIA system clearly fulfilled all the requirements for the EIA legislative backing and provisions criterion in terms of legal documentation being in place. However, in practice the legislative implementation was judged to be poor by most respondents (Murwanyi, personal communication, 05/07/2016; Auruga, personal commination, 20/07/2016; Kahangirwe, personal communication, 27/07/2016) while some legislations being partially implemented in practice as elaborated in *figure 4*. This poor and partial implementation of the existing legal provisions was attributed to the low levels of awareness, lack of commitment in terms of resources (financial and human) to foster the practical implementation of most legal provisions. Further some cases of corruption also were reported to hinder the effectiveness implementations of EIA as a lot of necessarily steps involved in the

practice are neglected using political influences and power. Therefore, a need to halt the above hindrances is evidently necessary so as to improve the effectiveness within the EIA system.

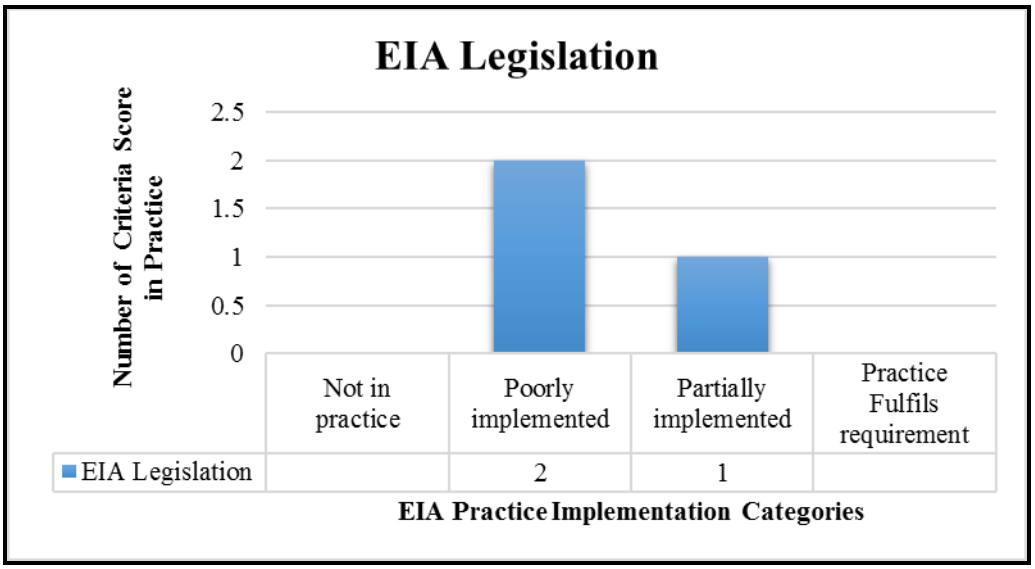

Figure 4: ***EIA Legislation effectiveness level in practice.***

b) EIA Administration

4. Existence of a competent authority for EIA and environmental acceptability

In theory, the Ugandan EIA system has a well-developed administrative arrangement with several outlined roles played by the different agencies as provided for under several Ugandan laws and regulations. Focusing mainly on the water resources sector, several environmental authorities and administrative agencies are accountable and mandated for during the EIA process as elaborated below.

The Uganda National Environment Management Authority (NEMA): This is the principle authority that was established under the NEA mandates and guidelines as a standard measure for the management and conservation of environmental resources in Uganda. NEMA has the overall obligation to coordinate, supervise,

regulate and monitor all environmental operations and compliances to the EIA requirements in consultation with DWRM as the water sector specific lead agency.

The Directorate of Water Resources Management (DWRM): There are three directorates within the Ministry of Water and Environment of Uganda, which acts as the supreme body on matters pertaining environmental conservation. However, the DWRM is the lead agency in the water resources EIA related projects accountable for assessing, regulating and monitoring all water resources in consultation with NEMA. The DWRM also has the mandate of issuing permits for water use, abstraction and wastewater discharge to project developers during the EIA process.

EIA Independent Practitioners: Due to their expertise knowledge, these practitioners undertake the EIStudy on behalf of the developer or the proponent in accordance to the EIA legislations and code of practice under the regulations. To comply with administrative requirements and professionalism, all practitioners in Uganda are vetted through a rigorous process by the Uganda Association for Impact Assessors (UAIA). In addition, any practitioner in Uganda must subscribe to be at least an ordinary member of the UAIA so as to truck effectiveness and easily regulate unprofessional practices.

The Developer/ Proponent: As required under the national EIA guidelines and regulations, EIA is undertaken by the developer who also covers the costs related to the preparation for conducting EIStudy and obtaining an EIA certificate from NEMA. An independent and competent EIA practitioner, who also must be certified by NEMA, undertakes full EIStudy on behalf of the developer for any project defined under the Third Schedule of NEA. However, in practice many developers according to the interviews were reported as being unaware of their actual roles during the EIA process (Kahangirwe, personal communication, 27/07/2016; Murwanyi, personal communication, 05/07/2016; Auruga, personal commination, 20/07/2016; Isamat, personal communication, 26/07/2016).

5. *Existence and provisions for an EIA review body*

In documentation, the provisions for the establishment of the EIA review body is mandated under the EIA regulations as a technical committee to advise the executive director of NEMA on issues of EIA. This committee is mandated under the regulations to carry out EIA reviews and provide recommendations to the developer through the executive director of NEMA. However, during the interviews with EIA officers and consultants, it was revealed that in practice no such committee or review body exists in the Ugandan system (Kikoyo, Personal communication, 02/08/2016; Kahangirwe, personal communication, 27/07/2016; Murwanyi, personal communication, 05/07/2016; Luyima, Personal communication, 20/07/2016).

To the researcher, this revealed the extent to which NEMA as the overall EIA administrative institution is at being understaffed to effectively carry out its established mandates in practice. This also described why in practice NEMA normally rely on the comments from the lead agency such as DWRM to make a decision regarding the EIA approval or rejection as its assumed that DWRM has the required expertise to offer guiding comments for decision making. However, DWRM also was found to succumb to challenges of understaffing in various departments (Kikoyo, Personal communication, 02/08/2016).

6. *Specification of sectoral authorities' responsibilities in the EIA process*

According to the document reviews, several responsibilities of all necessary EIA actors and agencies involved in the process are described in a number of legal documents such as NEA, EIA regulations and the EIA guidelines for water resources related projects. Therefore, depending on the project a lead agency generally has responsibilities of making reviews and comments which are forwarded to NEMA that makes the final decision on the proposed project. In documentation this criterion is fulfilled although in practice some responsibilities are duplicated and

therefore in the end all or nothing may be done at times especially during the project performance monitoring phase (Luyima, Personal communication, 20/07/2016).

7. *Level of coordination among EIA agencies and control bodies*

In theory, NEMA under the NEA has one of its responsibilities being to coordinate all environmental management activities in the country. In practice, several respondents from government institutions revealed that a good level of inter-agency coordination exists (Kikoyo, Personal communication, 02/08/2016). On the other hand, all EIA independent consultants shared a different opinion acknowledging the coordination gap that exists between NEMA and EIA practitioners (Murwanyi, personal communication, 05/07/2016; Kahangirwe, Personal communication, 27/07/2016). The researcher related to this mixed level of coordination to the affiliation the several interviewees exhibit. Those agencies affiliated to the government find it easier to communicate between each other than agencies from the private sector, thus the mixed level in coordination responses.

Overall, the institutional framework within the Ugandan EIA system particularly in the water resources sector is largely established on paper with good structures to support the EIA process in place as for the criteria used. However, according to the interviews, their practical functioning indicated a number of challenges and incidences of poor implementation as illustrated in *figure 5*.

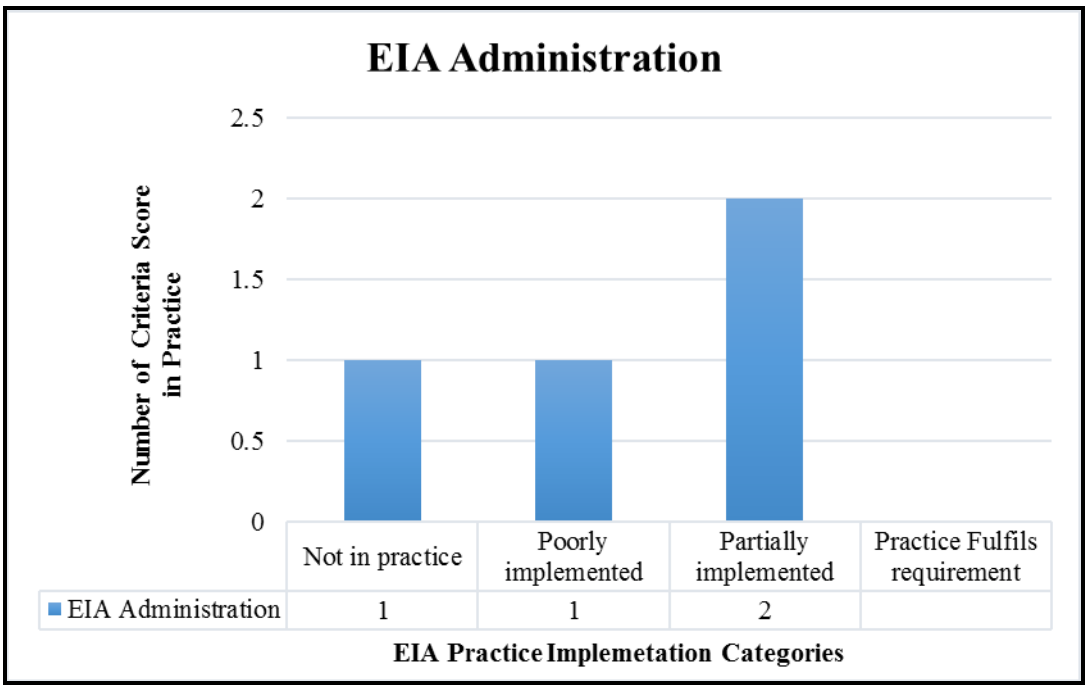

Figure 5: *EIA Administration effectiveness level in practice*

According to the interviews and document reviews, this gap in the practical functionality is largely attributed to the duplication in mandates among several EIA agencies, poor institutional monitoring for EIA compliance, under staffing and low financial and human resource allocation within several EIA institutions and the low levels of inter-agency coordination especially between the public and private agencies.

c) EIA Process

For an EIA to be complete in Uganda, all the steps illustrated in *chapter 2* under steps for conducting EIA should be followed for a full EIA process. Using the modified criteria, both the legal document provisions and practical EIA process steps were evaluated as applied for within the water sector EIA related projects in Uganda.

8. *Existence of a project briefs requirement and review*

In documents, the requirement for a project brief *(appendix 4)* is recognised and valued for all development projects listed under the *third schedule* of the NEA in the Ugandan. According to all interview respondents, the project briefs do apply in practice (Kusiima, Personal communication, 19/07/2016; Kahangirwe, Personal communication, 27/07/2016; Kikoyo, Personal communication, 02/08/2016; Luyima, Personal communication, 20/07/2016). These are used as a basis to determine the project screening category after understanding the implications of such a project on the environment. Therefore, both in documentation and practice the criterion was fulfilled under the Ugandan EIA system.

9. *Existence of specified screening categories*

Both in the NEA and the EIA guidelines document reviews, screening is recognised as a common approach involving both the lists and thresholds of most water sector projects. Four categories are detailed under the water sector EIA guidelines to analyse whether or not an EIA process is required in full, partial or no EIA is required *(appendix 5)*. According to the interviews, this document provision was testified as applied in practice and using even more comprehensive screening lists under project categories for specified water projects (Kusiima, Personal communication, 19/07/2016; Luyima, Personal communication, 20/07/2016). Therefore, both on paper and in practice this criterion was fulfilled.

10. Provisions for a systematic screening approach

Under the EIA regulations a systematic screening list covering a diversity of water projects is comprehensively provided for on paper. However, in practice NEMA has used its discretion as the supreme authority for environmental management to subject certain projects to requirements beyond the initial environmental assessment depending on the gap between the impacts from the project and the proposed

mitigation measures (Kikoyo, Personal communication, 02/08/2016). Therefore, EIA procedural effectiveness was found to be upheld both on paper and even more stringently applied in practice, hence fulfilling the used criterion.

11. *Existence of a systematic scoping approach*

In documentation theory the existence of a systematic scoping approach to identify the significant impacts to be assessed is provided for basing on the ToR formulated. However, in practice the scoping approach may usually be more sophisticated depending on the nature of impacts and complexity of the development projects under consideration (Kusiima, Personal communication, 19/07/2016; Luyima, Personal communication, 20/07/2016). Therefore, the EIA process fulfils both the theoretical and practical requirement for the criterion.

12. Requirement to consider alternatives

The EIA regulations require the exploration of alternatives especially for the project location sites as measures of minimising possible significant impacts while not changing land use patterns significantly. In practice, the requirement is exercised and done in consideration to a combination of economic, technological and cultural dimensions of the project and its impacts. Techniques such as selecting the alternative with the least adverse impacts as the best alternative are used (Kikoyo, Personal communication, 02/08/2016). However, other methods involving the cost-benefit analysis comparison may be used for some projects (Luyima, Personal communication, 20/07/2016). Therefore, the criterion is fulfilled in documentation and in practice.

13. Existence of specified EIA scoping report content

The details of the scoping report are well elaborated under the EIA guidelines as shown in *Appendix 6.* In practice, all fourteen EIA practitioners interviewed acknowledged the use of this scoping report content before forwarding it to NEMA

and DWRM for review and comments. Therefore, the criterion is fulfilled as stipulated in the legal documentation theory and in practice.

14. Requirement for mitigation of impacts

Under EIA regulation 33, it is required that sufficient impact mitigation measures for all predicted significant negative impacts be provided, while also providing measures to enhance the positive impacts. In practice this process requirement is considered the most rigorous as most EIA team expertise is focused on this requirement (Auruga, personal commination, 20/07/2016; Kusiima, Personal communication, 19/07/2016). This is aimed at ensuring an effectiveness EIA procedural process for sustainable environmental decisions. Therefore, the criterion is fulfilled in as provided for in documentation and in practice.

15. *Existence of an EIA review provision*

In theory, the review process is also recognised as an important part of EIA process quality control and therefore emphasised under the EIA regulations and guidelines. In addition, the use of checklists is obligated to ensure adequacy during the review process (Kikoyo, Personal communication, 02/08/2016). In practice, the review process if carried out by both DWRM and NEMA where grievances are made pertaining unsatisfactory procedural measures made during the EIA process. Therefore, the criterion is fulfilled as stipulated in documents and in practice.

16. Provisions for public participation in EIA process

According to the Ugandan EIA regulation of 1998, under regulation 12, the developer is mandated during the EIStudy to seek for public opinion on the development project from such communities that might be affected by the proposed project. In practice, public participation is executed but with gaps especially on publicly sharing truthful information related to the negative and positive impacts of the proposed project. Therefore, the public involvement is done just to fulfil the EIA

process requirement rather than an informative, participatory and transparent procedure for improving EIA effectiveness. Therefore, the criterion was met fully in theory and partially in practice.

17. *Existence of a systematic decision-making approach*

The Ugandan EIA system provides for a systematic approach in making a final decision regarding the proposed project after necessary reviews from relevant stakeholders and agencies. In addition, the regulations however mandate NEMA to make a final decision in cases where the lead agency like DWRM fails to communicate review comments within fourteen days as stipulated within Ugandan EIA regulations of 1998 under regulation 21, sub-regulation (2). In documentation theory, the regulations provide for a decision to be made in less than 180 days from the EIStudy submission date. However, according to some of the EIA practitioners interviewed (Biribonwa, personal communication, 22/07/2016; Luyima, Personal communication, 20/07/2016), this decision making process usually takes longer than provided for in the system. Therefore, the criterion was fulfilled in theory, but lacking in practice.

18. Existence of specified EIS report content and format

In the water resources sector, a systematic report format is specified under the guidelines for which developers must adhere to and provide all necessary data and information upon which project decision is made. This format is illustrated in *appendix 7* detailing the contents of an EIS report for the water sector related projects. This report format was found to be indeed exercised according to document reviews and interview respondents (Auruga, personal commination, 20/07/2016; Biribonwa, personal communication, 22/07/2016; Kahangirwe, Personal communication, 27/07/2016). Therefore, the criterion was fulfilled provided for on paper and in practice.

19. *Requirement for Environmental Management Plans (EMPs)*

The EMP is a great requirement as detailed document with responsibilities and commitments for any proposed impact monitoring. This also indicates the time schedules and costs for mitigation of impacts from the proposed project actions as shown in *Appendix 8*. Examination of ten EIA reports revealed that they had a detailed EMP embedded and approved by NEMA. However, the actual implementation of EMPs detailed on most EIA reports was stated as poor according to the interviews (Kusiima, personal communication, 19/07/2016; Kahangirwe, Personal communication, 27/07/2016; Luyima, Personal communication, 20/07/2016; Murwanyi, personal communication, 05/07/2016; Auruga, personal commination, 20/07/2016;). Therefore, the criterion was fulfilled both as documented and in practice, although gaps in implementation were reported.

20. Requirement for impact monitoring

The *EIA Regulations* entail environmental monitoring as a requirement for the developer to undertake as part of the effective impact mitigation measures as incorporated in the project planning and design. Under this requirement, the project developer is tasked to prepare annual monitoring reports after consistent in-house monitoring with external supervision from NEMA, DWRM, and other relevant agencies. However, it was revealed during the interviews that monitoring and supervision is still a big challenge for both developers and EIA authorities. According to the EIA practitioners, these challenges are related to the low awareness among developers on the role of EIA in environmental governance as well as the limited institutional capacity of EIA authorities to carry out their mandates. However, an interviewee from the EIA authorities (Kikoyo, Personal communication, 02/08/2016) related this to low allocation of funds to facilitate such

monitoring activities during and after EIA approval. Therefore, the criterion was fulfilled as in legal documentation theory but partially in practice.

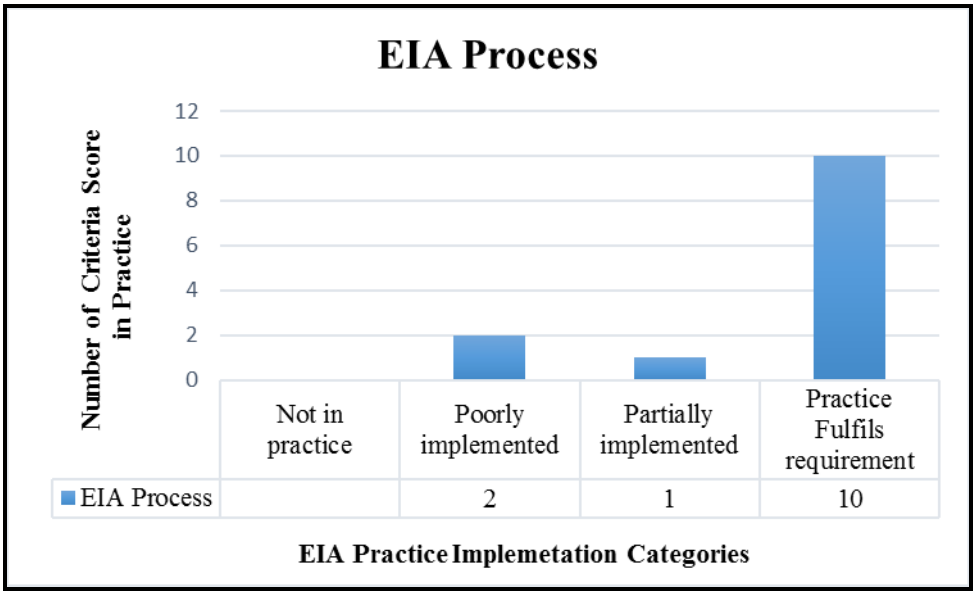

Figure 6: *EIA Process effectiveness level in practice*

Conclusion on EIA process criteria

Although ten criteria were found to be fulfil practical requirement and none not in practice, the poor or partial practically implemented criteria as illustrated in *figure 6* above inflicted some challenges on the EIA process. This gap in practice was attributed to mainly three factors, namely the low levels of awareness among different groups involved in the EIA process, low allocation of funds to several EIA institutions to facilitate carrying out their stipulated mandates and the limited institutional capacity to perform. However, the EIA practice within the Ugandan system was perceived by the researcher as well provided for on paper and its practice can drastically improve if the aforementioned challenges are addressed.

4.1.2. Evaluation based on foundation criteria for EIA effectiveness.

The foundation criteria were assessed in relation to sector specific EIA guidelines, EIA system expertise training, monitoring and capacity-building as described below.

21. Existence of general and/or specific sectoral guidelines.

Uganda has developed general EIA guidelines and several sector-specific guidelines. These include, among others, the *EIA guidelines for Water resources related projects of 2011* drawing provisions from the *Water Act Cap 152* and *the National Environment Act Cap 153* under Section 19, sub-section (8). However, the mere existence of such specific EIA guidelines does not automatically imply effective implementation in practice (Ndagire, personal communication, 22/07/2016). Through interviews with EIA practitioners, the study revealed that the practical success of the established EIA guidelines in Uganda depends not only on content quality but also on the actions in place for its effective application and implementation (Biribonwa, personal communication, 22/07/2016; Isamat, personal communication, 26/07/2016). However, as noted earlier, institutional monitoring and supervision is considerably limited to complement the legislative provisions. Nevertheless, several legal guidelines were perceived by the researcher as being very vital and valuable legislative tool to aid the effective preparation and assessment of the EIA process. The criterion was fulfilled theoretically but was found to be poorly implemented in practice.

22. Existence of EIA system implementation monitoring

In the Ugandan EIA system, no legislation or guidelines provides for a full monitoring of the EIA system. However, it was revealed during the interviews that legislative reviews in the system have taken place over time to facilitate system effectiveness (Luyima, Personal communication, 20/07/2016). However, the actual operation and effectiveness of this measure was perceived to be lacking by some respondents (Kusiima, personal communication, 19/07/2016; Kahangirwe, Personal communication, 27/07/2016). Therefore, the criterion was not fulfilled both in terms of document provisions and practice.

23. Presence of technical expertise in conducting EIA

For this study technical experts were recognised as those certified as EIA practitioners in the Uganda system. According to the official list from NEMA as of 2015, it consisted of 144 certified EIA practitioners and 76 registered environmental auditors. Therefore, in theory the researcher qualified the existence of qualified environmental technical experts in Uganda. However, according to the interviews with NEMA officials and other EIA experts, it was argued that only a small minority of these certified environmental technical experts are really actively committed to EIA practicing (Biribonwa, personal communication, 22/07/2016; Luyima, Personal communication, 20/07/2016). Therefore, the criterion was fulfilled in theory as EIA experts exist and partially fulfilled in practice as only a small minority of these are actively involved in the EIA process.

24. Existence of Trainings and capacity-building

As noted earlier in section 4.1 about EIA administration, institutional capacity in Uganda is considered limited. However, even though several EIA institutions like NEMA and DWRM acknowledge this challenge (Kikoyo, Personal communication, 02/08/2016), little in terms of capacity building interventions such as trainings have been endeavoured. Although legal documents such as NEA highlight capacity building requirements, NEMA as a supreme EIA institution has not endeavoured to operationalize such document provisions (Ndagire, personal communication, 22/07/2016; Luyima, Personal communication, 20/07/2016; Biribonwa, personal communication, 22/07/2016; Kahangirwe, Personal communication, 27/07/2016) to facilitate effectiveness EIA practices. Therefore, the criterion was found to be not in practice although provided for theoretically in legal documentation.

Conclusion to the foundation criteria for EIA effectiveness

Generally, the foundation criteria were evaluated to be good in terms of theoretical provisions under the legal documents. However, the practice was evaluated as poor and lacking as most theoretical mandate were either unpractised, poorly or partially implemented as shown in *figure 7* below.

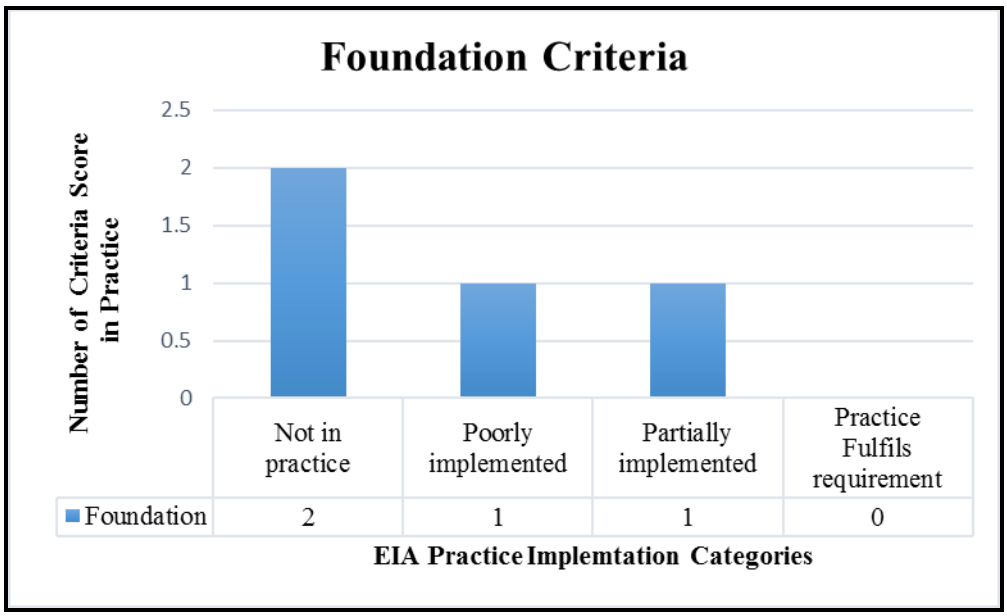

Figure 7: ***Foundation criteria EIA effectiveness level in practice***

The evaluation results of the study are further summarized in *table 5* below.

	SYSTEMATIC CRITERIA		**Criterion Scores**	
a	**EIA Legislation**	***Application in the Water Resources sector of Uganda***	**Theory**	**Practice**
1	Does the Legal framework for EIA exist?	*The National Environment Act Cap 153 of 1995; EIA Regulations, 1998; National EIA guidelines, 1997; Water act cap 152 of 2000 and the specific EIA guidelines for water resources of 2011 are the guiding frameworks. In practice this requirement is poorly implemented.*	*Yes*	*1*
2	Are there provisions for appeal by the developer or the public against decisions?	*Under the EIA Regulations provisions or an appeal where a developer may not be satisfied with any decision taken by*	*Yes*	*2*

		NEMA are outlined. In practice this requirement is partially implemented.		
3	Is there a time limit specification in the Legal or procedural frameworks?	*Time limit on EIA process decision, comments and review are specified in the EIA regulations and NEA. In practice this requirement is poorly implemented.*	*Yes*	*1*
b	**EIA Administration**			
4	Do EIA institutions exist and what's the level of their competence?	*Several institutions like NEMA, DWRM as well as relevant agencies and stakeholder exist. In practice this requirement is partially implemented.*	*Yes*	*2*
5	Does the provisions for a review body for EIA exist and its administrative function?	*Provisions are provided or under the EIA regulations to appoint a technical committee with the review and decision making function. This requirement is not implemented in practice.*	*Yes*	*0*
6	Are there elaborate specification of sectoral authorities' responsibilities in the EIA process?	*Responsibilities are described in the EIA regulations, NEA and Water Act. In practice this requirement is partially implemented.*	*Yes*	*2*
7	What is the level of coordination with other EIA agencies and control bodies?	*Inter-agency coordination was perceived to be poor with ad-hoc protocol.*	*Yes*	*1*
c	**EIA Process**			
8	Is the requirement for project briefs and reviews provided for?	*Project briefs are required according to NEA and EIA regulations; Reviews are done by NEMA in consultation with DWRM. In practice, this requirement is well implemented.*	*Yes*	*3*
9	Do specified screening categories exist?	*Water resources related projects have four screening categories. In practice, this principle is well implemented.*	*Yes*	*3*
10	Are there provisions for a systematic screening approach?	*Systematic screening procedures are followed using lists, ToRs and thresholds for mandatory EIA projects. In practice, this requirement is well implemented.*	*Yes*	*3*
11	Does a systematic scoping approach exist?	*Systematic scoping exists with the use of standard ToRs approved by NEMA in consultation with DWRM. In practice, this requirement is well implemented.*	*Yes*	*3*
12	Is there a requirement to consider alternatives?	*The regulations require the exploration of available possible alternatives and reasons for alternative selection. In practice, this requirement is well implemented.*	*Yes*	*3*
13	Does a specified EIA scoping report content guideline exist?	*Contents of EIS are specified and outlined in the water sector EIA guidelines in a comprehensive way. In practice, this requirement is well implemented.*	*Yes*	*3*
14	Is there a requirement for mitigation of impacts?	*Requirements for significant impact mitigation are mandated under the NEA and elaborated in the EIA regulations as recommended by NEMA basing on*	*Yes*	*3*

		predicted impacts in the project brief. In practice, this requirement is well implemented.		
15	Do the provisions for EIA reviews exist?	*EIA review provisions exist and are emphasized based on comparison with ToR and report format provided by the water sector guidelines. In practice, this requirement is well implemented.*	*Yes*	*3*
16	Do the provisions for Public participation in EIA process exist?	*Public participation is considered mandatory for the developer to publicise the impacts of the proposed project. Its systematic procedures are enacted under the regulations and guided by the water sector EIA guidelines; Non-technical EIA summary is also required for the public. In practice this requirement is poorly implemented.*	*Yes*	*1*
17	Does a systematic decision-making approach exist and practiced?	*A systematic decision-making procedure is followed taking into account the whole review comments and environmental acceptability of the project; Approval may be made with attached conditions to the developer; If the project is rejected, reasons for rejection are provided to be stated in writing.*	*Yes*	*3*
18	Do specified EIS report content exist?	*General EIS contents and requirement are elaborated under the EIA Regulation and water sector EIA guidelines. In practice, this requirement is well implemented.*	*Yes*	*3*
19	Are there requirements for an Environmental Management Plans (EMP)?	*Required and detailed under the Water Sector EIA guidelines to be attached to the EIS report. In practice, this requirement is partially implemented.*	*Yes*	*2*
20	Do the provisions for impact monitoring exist?	*Monitoring plan is required under the NEA; developer maintains up-to-date records and self-audits on project activities as required by EIA regulations; NEMA undertakes follow-up inspections and monitoring in consultation with DWRM. In practice these provisions are poorly implemented.*	*Yes*	*1*
	FOUNDATION CRITERIA			
21	Do general and/or specific sectoral guidelines exist?	*The Ugandan Guidelines or EIA of 1997; specific EIA guidelines are the general water sector guiding frameworks. In practice, this theoretical requirement is poorly implemented.*	*Yes*	*1*
22	Is the EIA system implementation evaluated for effectiveness?	*Limited EIA system monitoring from several EIA agencies; No formal legislative provisions for general EIA system monitoring. This requirement is not implemented in practice.*	*No*	*0*

23	Do Environmental technical expertise for conducting EIA exist?	*Registered and certified EIA practitioners, independent environmental consults and auditors list is produced by NEMA every year to carry out EIA technical constancy. In practice this requirement is partially implemented.*	*Yes*	*2*
24	Do capacity building trainings exist?	*No comprehensive training and EIA education programme from NEMA; However, a post graduate University course in EIA is taught. In practice this requirement is relatively implemented.*	*Yes*	*0*

Table 5: *Summary of the evaluation results regarding the effectiveness of EIA practice within the water sector of Uganda.*

Conclusion of the both systemic and foundation criteria evaluation

Of all the twenty-four criteria used, it was revealed that the Ugandan system has strong procedural mandates to facilitate a comprehensive EIA process for water related projects. According to the criteria used, the Ugandan EIA system recorded 96% (23 of 24) which was satisfactory to the criteria as provided for in theory. This implies that largely the EIA system of Uganda is well structured theoretically in accordance with the legal EIA requirements assessed using the modified criteria.

In practice however, the analysis of data showed that most theoretical requirements within the Ugandan EIA system are not satisfactorily being applied as stipulated for in the EIA process. Therefore, this affects the procedural effectiveness of the EIA process in the country.

4.2. Recommendations to improve EIA system effectiveness in Uganda

According to Wood and Jones (2002), the need to improve the variances between theoretical and practical deviancies should be emphasized in order to improve EIA effectiveness. Therefore, this section elaborates on specific recommendations for improving the identified weaknesses and challenges upsetting the procedural effectiveness of EIA in Uganda. Such recommendations for improvements are based

on the results from the application of systematic and foundation criteria of EIA effectiveness and include;

4.2.1. Recommendations based on Systemic Criteria

More commitment to the national EIA laws and regulations: There is significant need for more devotion and adherence to the existing national laws and regulations on EIA requirements and compliance at several stages of the project. Further, the national policies and laws should be consistent with the environmental management incentives and disincentives for failure to implement EMP recommendations or compliance with environmental standards. This in return could help increase environmental responsibility from the developers, hence also promoting EIA effectiveness.

Timely review of EIA laws and regulations: Several EIA policies and laws were enacted more than 15 years ago and a few of these have been reviewed ever since. Although the study revealed that supreme legislations including NEA and the EIA Regulations are under their first review, this comes a little bit late after several environmental damages have been recorded. Therefore, more timely reviews should be emphasized in order to curb the complex environmental issues using the most recent legal and technological advancements.

Strengthen compliance commitments and emphasis on project monitoring: Project monitoring for compliance is by far one of the most challenging activity not only on the side of the regulating authorities but also for developers. As often provided for in the EMP, industries should comply and carry out self-regulation on environmental aspects. This is not only done by industries for purposes of sustainability obligations but also for their corporate image in society. On the other hand, the authorities are incapacitated by the lack of technical, economic and human resources necessary to carry out such compliance monitoring and enforcement strategies. More funds should be allocated for such environmental supervisory roles

with more training on technical capacity so as to facilitate all these actions that promote environmental sustainability.

Further, in order to facilitate an effective EIA process, it should be ensured that NEMA, DWRM and other agencies responsible for EIA procedural effectiveness are adequately financed and resourced to perform their mandates.

Increase EIA awareness among the public: Public participation is required by the EIA policies and legislation at various stages of the EIA process as illustrated in the steps for conducting EIA under section 2.1. However, the lack of awareness among several sections of the public on the importance of EIA and environmental issues affect their meaningful participation. There is hence a dire need to make the public aware of their legislative provision so as to capacitate them to make articulate engagements with developers not only on grounds of compensation but also in critically assessing environmentally degrading project actions.

Further, The EIA regulations require an elaborate consultation and engagement with all affected parties, whose considerations should be fully incorporated into the design. However, elaborate public participation at several EIA stages is lacking and needs to be strengthened for improved process effectiveness. The more awareness is prioritised, the more the public will be able to question developers and government decisions on projects approved and the actors whose actions are not in line with environmental protection.

Strengthen inter-agency coordination: The study revealed that to some extent, many EIA actors including the regulatory bodies usually perform their responsibilities in isolation of each other. This in turn affects the EIA implementation due to little involvement of competent regulatory bodies and agencies. Therefore, strengthening interagency coordination is vital for EIA procedural effectiveness not only in the water sector but also in the entire EIA system of Uganda. Strong inter-agency coordination is vital for any effective environmental assessment due to the fact that

environmental issues are complex with implications that may be regional, national or international involving several sectors. Therefore, by having a good inter-sectoral relationship with prompt communication lead to effective exploitation of specialised knowledge and information sources from several sectors, thus facilitating an elaborate and informed decision making.

Further, the roles and responsibilities amongst Environmental agencies should be redefined. For *instance,* the EIA regulations assign and indicate various mandates performed by NEMA and other lead agencies as part of the EIA procedural practices. However, there are still supervisory and monitoring gaps with unclear and overlapping roles among these institutions. In addition, the poor coordination further results into poor performance which hinders effective environmental governance from the EIA process. Therefore, redefining the roles and responsibilities performed by several EIA agencies will minimise such short comings and improve inter-agency coordination.

Additional EIA Quality Control Mechanisms: NEMA should ensure improvements in the quality control mechanism at every phase of the EIA procedural process from project inception through compliance audits to decommissioning. In order to achieve this, there need to be elaborate reviews in the legislations and institutional mandates with technical capacity and adequate funding. Quality control mechanisms should also ensure that the opinions of all stakeholders are respected and taken into consideration to aid decision-making. The establishment of an independent assessment and advisory committee is recommended to improve the transparency and consistency of the EIA practice.

More adherence to the EIA procedural timeline: EIAs are meant to provide an insight into the significant impacts of the proposed projects. However, as revealed in this study, EIA reviews usually take longer than mandated under the legislations. As a result, it has become a common practice for developers to occasionally embark on the EIA process at a later stage of the project cycle or commencing the project

without approval. This has been attributed to the bureaucratic EIA approval and certification process within NEMA and to understaffing, which obstructs the timely handling of EIA procedural requirements. Consequently, this defeats the overall purpose of the EIA process. Therefore, more adherence to the mandated timelines can help improve procedural effectiveness with respect to the project plans.

4.2.2. Recommendations based on Foundation Criteria

Additional capacity building for EIA expertise: Competent technical capacity is a requirement for any EIA to be considered effective procedurally. However, capacity building has been greatly neglected in the Ugandan system particularly for regulatory agencies, practitioners and local government authorities that have a role in making the EIA effective. Therefore, capacity building on more clear-cut objectives for the regulatory and supervisory agencies can improve their operations effectively. Hence, this can contribute greatly to effective environmental governance and a mature EIA system.

5.0. CONCLUSION.

5.1. Conclusion

The objectives of this study were to evaluate the procedural effectiveness of the EIA system within the water resources sector of Uganda and to provide recommendations to improve the effectiveness of the EIA process. The study used both the systematic and foundation criteria for the evaluation of EIA effectiveness within the water sector.

According to the systematic criteria, the EIA legislation of Uganda was found to be theoretically effective, with decently elaborated legal and regulatory mandates to facilitate a comprehensive EIA process. The key legislations of NEA and the EIA regulations were considered very detailed. However, a big difference was observed by the researcher between EIA theory and practice within the Ugandan system. Several practices contradict with legal mandates and provisions, leading to poor implementation that results in a low degree of procedural effectiveness.

In relation to the EIA administration in Uganda, its functionality is well established under the NEA. However, challenges related to insufficient resources, lack of adequate technical capacity, poor compliance monitoring, the overlapping responsibilities and poor inter-agency coordination among the EIA institutions often hamper the timely execution of EIA activities. Although administrative structures are generally well established, their functionality was found lacking in practice.

Regarding legislative provisions, the EIA process was found to be fulfilling the assessment criteria used showing a good level of EIA procedural effectiveness. However, the study also revealed a significant difference between legal requirements and implementation in practice. Although several EIA practitioners conduct the process in compliance with the EIA frameworks, the effectiveness of the EIA process is hindered by challenges related to political influences, economic

power or interest, lack of appropriate monitoring strategies, poor inter-agency coordination and poor enforcement of legislations.

On the other hand, effectiveness in terms of the foundation criteria, which involves the activities undertaken to improve EIA system effectiveness was found to be poor. Apart from the existence of sector specific EIA guidelines, the EIA system implementation monitoring is lacking with no independent assessor to render the EIA process credibility and transparent. further, capacity building was found to be lacking thus hampering the procedural effectiveness.

In conclusion, the study found that the Ugandan EIA system has very comprehensive EIA legal frameworks when evaluated using the modified criteria of Wood (2003). However, their actual implementation and enforcement is very limited in practice to foster an effective procedural EIA process. Therefore, all actors in the EIA system should become equally concerned about environmental sustainability and be willing to fully exercise their mandates as provided for in the legal frameworks. On the other hand, a number of recommendations are made that if effectively implemented, the Ugandan EIA system can improve its EIA effectiveness procedurally hence facilitating a more informed decision-making process for better environmental governance.

5.2. Areas of Further Research

The study revealed that since the enactment of EIA practice in Uganda, there has never been a full evaluation on the system to gauge good practise and need for conducting reviews. This study therefore provides an insight into the effectiveness of EIA within the water resource sector of Uganda.

For further research, evaluation of substantive effectiveness is recommended to determine the extent to which the EIA process has been effective in achieving its founding purpose in Uganda.

A comparative study on the Ugandan EIA system against the practices from other countries, where success has been achieved with the EIA practices, would be another further research area. Insights of good practices may be borrowed from such a comparison and facilitate the formulation of customised practical guidelines for improving EIA effectiveness.

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Appendices

Appendix 1: *Projects Listed under Third Schedule requiring full EIA.*

THIRD SCHEDULE.
Projects to be considered for Environmental Impact Assessment.

1. General -

(a) an activity out of character with its surroundings;

(b) any structure of a scale not in keeping with its surroundings;

(c) major changes in land use.

2. Urban development, including -

(a) designation of new townships;

(b) establishment of industrial estates;

(c) establishment or expansion of recreational areas;

(d) establishment or expansion of recreational townships in mountain areas, national parks and game reserves;

(e) shopping centres and complexes,

3. Transportation, including -

(a) all major roads;

(b) all roads in scenic, wooded or mountainous areas;

(c) railway lines;

(d) airports and airfields;

(e) pipelines;

(f) water transport. 4. Dams, rivers and water resources, including -
(a) storage dams, barrages and weirs;

(b) river diversions and water transfers between catchments;

(c) flood-control schemes;

(d) drilling for the purpose of utilising ground water resources, including geothermal energy.

5. Aerial spraying.

6. Mining, including quarrying and open-cast extraction of-

(a) precious metals;

(b) diamonds;

(c) metalliferous ores;

(d) coal;

(e) phosphates;

(f) limestone and dolomite;

(g) stone and slate;

(h) aggregates, sand and gravel;

(i) clay;

(j) exploration for the production of petroleum in any form.

7. Forestry-related activities, including -

(a) timber harvesting;

(b) clearance of forest areas;

(c) reforestation and afforestation,

8. Agriculture, including -

(a) large-scale agriculture;

(b) use of new pesticides; (c) introduction of new crops and animals;
(d) use of fertilisers.

9. Processing and manufacturing industries, including -

(a) mineral processing, reduction of ores and minerals;

(b) smelting and refining of ores and minerals;

(c) foundries;

(d) brick and earthenware manufacture;

(e) cement works and lime processing;

(f) glass works;

(g) fertiliser manufacturing or processing;

(h) explosives plants;

(i) oil refineries and petrochemical works;

(j) tanning and dressing of hides and skins;

(k) abattoirs and meat-processing plants;

(l) chemical works and process plants;

(m) brewing and malting;

(n) bulk grain processing plants;

(o) fish processing plants;

(p) pulp and paper mills;

(q) food processing plants;

(r) plants for the manufacture or assembly of motor vehicles;

(s) plants for the construction or repair of aircraft or railway equipment;

(t) plants for the manufacturing or processing of rubber;

(u) plants for the manufacturing of tanks, reservoirs and sheet-metal containers; (v) plants for the manufacturing of coal briquettes.

10. Electrical infrastructure, including -

(a) electricity generation stations;

(b) electrical transmission lines;

(c) electrical substations;

(d) pumped-storage schemes.

11. Management of hydrocarbons, including the storage of natural gas and combustible or explosive fuels.

12. Waste disposal, including -

(a) sites for solid waste disposal;

(b) sites for hazardous waste disposal;

(c) sewage disposal works;

(d) major atmospheric emissions;

(e) offensive odours.

13. Natural conservation areas, including -

(a) creation of national parks, game reserves and buffer zones;

(b) establishment of wilderness areas;

(c) formulation or modification of forest management policies;

(d) formulation or modification of water catchment management policies;

(e) policies for management of ecosystems, especially by use of fire;

(f) commercial exploitation of natural fauna and flora;

(g) introduction of alien species of fauna and flora into ecosystems.

Appendix 2: Examples of Surface water projects that require EIA.

Examples of Surface Water Resources Projects that require EIA:

i. *Industrial and commercial water supply and discharge projects, which use municipal water supply system or private supplies and waste disposal facilities relying on surface water resources. These include: - small scale industries that affect the water quality in the vicinity of their location e.g. garages, petrol stations and storage facilities for petroleum products, etc,*

ii. *Agriculture and agricultural water supply projects, including irrigation; future developments of irrigation are likely to involve: - diversion of rivers on to farmlands; - pumping of water on to farmlands, and -construction of costly structures and irrigation infrastructures drawing water from lake and river sources.*

iii. *Water supply for fishing i.e. inland ponds and aquaculture; others include hydropower projects, mining sector, urban water supply project, Livestock watering, Wastewater disposal, Drainage, flood protection, hydraulic works and in-stream use and other activities.*

Source: *EIA Guidelines for Water Resources Sector related projects in Uganda (2011).*

Appendix 3: Examples of Groundwater related projects that require an EIA.

Examples of Groundwater Resources Projects that require EIA:

(i) Borehole drilling and hand augured shallow wells;
(ii) Springs and shallow wells;
(iii) Shallow wells and valley dams;
(iv) Earth reservoirs and gravity flow schemes.

Source: *EIA Guidelines for Water Resources Sector related projects in Uganda (2011).*

Appendix 4:Contents of the project brief.

Contents of a Project Brief

i. *Name and address of the developer*
ii. *Name, purpose, objectives and nature of the water project in accordance with the categories identified in the Third Schedule of the NEA;*
iii. *Description of the project site and its surroundings where the project is to be located (including Global Positioning System (GPS) coordinates, village, parish, sub county, county and district).*
iv. *Site location map;*
v. *Policies, laws, regulations governing such project;*
vi. *Description of project design and activities that shall be undertaken during and after the development of the project;*
vii. *Description of equipment to be installed and any buildings or related facilities;*
viii. *Description of the materials and input that the project shall use;*
ix. *Description of the products and by-products, including waste to be generated;*
x. *Description of any likely environmental impacts of the project, and how they will be eliminated or mitigated during the implementation of various phases/stages of the project;*
xi. *Description of any other alternatives, which are being considered (e.g. siting, technology, construction and operation procedures, sources of raw materials, handling of wastes etc.); and*
xii. *Any other information that may be useful in determining the level of EIA required by NEMA, and Decommissioning and restoration plans for closure and restoration of the site to productive post-closure use.*

Source: *EIA Guidelines for Water Resources Sector related projects in Uganda (2011).*

Appendix 5: List of Screening categories for water resources related Projects in Uganda.

Screening categories for Water Resources Sector related Projects

Category 1: *Small projects which do not have potential significant impacts and for which separate EIAs are not required, as the environment is the major focus of project preparation. These could include borehole drilling, hand augured shallow wells, protected springs and earth reservoir construction.*

Category 2: *Environmental analysis is normally unnecessary, as the project is unlikely to have significant environmental impacts. A project brief is enough. This could include project location in less sensitive areas or where many such schemes are in the same locality and their synergetic effects have potential impacts.*

Category 3: *A limited environmental analysis is appropriate, as the project impacts can be easily identified and for which mitigation measures can be easily prescribed and included in the design and implementation of the project. Projects in this category could include:*

i. rural water supply,
ii. large earth reservoirs, but not located in very sensitive areas
iii. big gravity flow schemes
iv. all category one projects located in sensitive areas.
v. aquaculture,
vi. small industries, and

Category 4: *An EIA is normally required because the project may have diverse significant impacts. Projects in this category could include:*

i. water projects requiring water to a level more than 400m3 in any period of twenty-four hours, or projects requiring to use motorized pumps;
ii. storage dams, barrages, weirs, valley tanks and dams;
iii. river diversions and inter-basin water transfer;
iv. flood control schemes, drilling e.g. for geothermal;
v. large reservoirs;
vi. irrigation and drainage schemes;
vii. water use industries e.g. pulp and paper, Breweries, etc.
viii. mining industry;
ix. sewage treatment plants;
x. small and large hydro power projects;
xi. urban water supply projects, and
xii. small to large gravity flow schemes.

Source: *EIA Guidelines for Water Resources Sector related projects in Uganda (2011).*

Appendix 6: EIA scoping format for water resources related projects in Uganda.

Format for the EIA Scoping Report

i. *Cover page: log, name of developer, name of consultant;*
ii. *Executive summary;*
iii. *Description of the project under consideration and its alternatives;*
iv. *Applicable environmental legislation and institutional framework;*
v. *Key stakeholders and their concerns;*
vi. *Key environmental aspects to be addressed in the EIA;*
vii. *Scope of the environmental baseline and areas of project influence;*
viii. *Recommendations on specific impact identification and evaluation methodologies;*
ix. *Time frames and resources needed to carry out the EIA;*
x. *Technical appendices;*
xi. *Stakeholder engagement methodology;*
xii. *List of stakeholders/people and institutions consulted (including contact details);*
xiii. *Records of stakeholder engagement;*
xiv. *List of documents consulted.*
xv. *List of tasks undertaken by the consultant.*

Source: *EIA Guidelines for Water Resources Sector related projects in Uganda (2011).*

Appendix 7: Ugandan EIS system accepted report format.

Accepted Format for the Water Sector EIA report:

1. Executive summary
2. Background
2.1 Project justification and purpose;
2.2 Project location;
2.3 Project description and associated activities;
2.4 Alternatives.
2.5. Environmental policy, legislative and institutional framework.
3. Approach and methodology
(This Chapter must set out the approach and methodology used in the EIA and how the data and information collected has been incorporated in the findings and recommendations):
3.1 General Approach
3.2 Geographical or mapping units
3.3 Environmental quality indicators
3.4 Assumptions, uncertainties and constraints
4. Environmental baseline study
5. Impact identification and evaluation.
(Cumulative effects and interaction between effects could form additional subject headings to ensure that these aspects are not overlooked. Tables and diagrams should be used to summarise and clarify findings in this Chapter).
6. Mitigation/optimisation measures and residual impacts
7. Environmental Management Plan.
8 Conclusions and recommendations
(This section must present a clear statement of the conclusions and recommendations on actions to be taken to ensure that environmental issues are adequately addressed in subsequent project preparation, implementation, monitoring and evaluation phases).
9. References
***10. Technical appendices**:*
»Records of stakeholder engagement.
»List of stakeholders consulted or engaged.
»Terms of Reference.
»Other technical information and data, as required.

Source: *EIA Guidelines for Water Resources Sector related projects in Uganda (2011).*

Appendix 8: EMP Matrix Sample Format.

EMP Matrix Sample Format

Project Activity	Potential impacts	Mitigation/ enhancement measures	Cost of mitigation enhancement	Responsibility	frequency	verifiable
1. Planning/Design/Construction phase						
Clearing of project site Excavation of site Laying of pipes						
2. Operation and Maintenance phase						
Water abstraction Discharge of effluents						
3. Decommissioning and Closure						
Removing infrastructure Restoring the site						

Source: *EIA Guidelines for Water Resources Sector related projects in Uganda (2011).*

Appendix 9: **List of Interviewees**

Names of the Interviewee	Organisation	Date of interview
Duncan Kikoyo	**EIA Review Coordinator** Directorate of Water Resources Management	**02/08/2016**
Eva Mutongole	**Head of Information, Library and Achieves** National Environmental Management Authority	**07/07/2016**
Ms. Josephine AURUGA CC/EIA/094/15	Nova Consult (U) Ltd	**20/07/2016**
Ms. Sheba NDAGIRE CC/EIA/130/15	Thom Consult Ltd	**22/07/2016**
Ms. Sarah NAMARA CC/EIA/069/15	Industrial & Nature Resources Consults Ltd	**21/07/2016**
Mr. Jamil Mbabazi KUSIIMA CC/EIA/090/15	JBN Consult & Planners	**19/07/2016**
Ms. Lynda BIRIBONWA CC/EIA/140/15	St. Barnabas Road, Kisugu,	**22/07/2016**
Mr. Alfred TUMUSIIME CC/EA/014/15	OPEP Consult Ltd.	**21/07/2016**
Mr. Eddie LUYIMA CC/EA/024/15	Eco & Partner Consult Ltd	**20/07/2016**
Mr. Happy Peter MURWANYI CC/EIA/038/15	Green Life Enviro Associates	**05/07/2016**
Mr. Hashiraph MUKASA CC/EIA/129/15	Gissat Environment Associates	**05/07/2016**
Mr. Martin ARYAGARUKA CC/EIA/135/15	Enviro-Care and Management Ltd	**19/07/2016**
Mr. Peter ISAMAT CC/EIA/035/15	Free-lance consultant	**26/07/2016**
Mr. Pius KAHANGIRWE CC/EIA/051/15	Free-lance consultant	**27/06/2016**

Appendix 10: Interview Question Guide

INTERVIEW GUIDE QUESTIONS

Dear Respondent,

My name is Simon Lubega a Master of Environmental and Energy Management student at the University of Twente in The Netherlands. As part of fulfilling one of the study requirements, I am undertaking an evaluation study on the Effectiveness of EIAs as tools for environmental governance in Uganda. The objective of this thesis is to evaluate the procedural effectiveness of EIA and make recommendations for its improvement and successful implementation in Uganda.
Therefore, the data and information provided during this interview is for academic purposes and its accuracy is paramount. Your contribution is highly appreciated and your responses will be treated with utmost discretion.

SYSTEMIC CRITERIA

a. EIA Legislation

1. Does the Legal framework for EIA exist?
2. Are there provisions for appeal by the developer or the public against decisions?
3. Is there a time limit specification in the Legal or procedural frameworks?

b. EIA Administration

4. Do EIA institutions exist and what's the level of their competence?
5. Does the provisions for a review body for EIA exist and its administrative function?
6. Are there elaborate specification of sectoral authorities' responsibilities in the EIA process?
7. What is the level of coordination with other EIAZ agencies and control bodies?

c. EIA Process

8. Is the requirement for project briefs and reviews provided for?
9. Do specified screening categories exist?
10. Are there provisions for a systematic screening approach?
11. Does a systematic scoping approach exist?
12. Is there a requirement to consider alternatives?
13. Does a specified EIA scoping report content guideline exist?
14. Is there a requirement for mitigation of impacts?
15. Do the provisions for EIA reviews exist?
16. Do the provisions for Public participation in EIA process exist?
17. Does a systematic decision-making approach exist and practiced?
18. Do specified EIS report content exist?
19. Are there requirements for an Environmental Management Plans (EMP)?
20. Do the provisions for impact monitoring exist?

FOUNDATION CRITERIA

d. Measures to improve EIA Effectiveness

21. Do general and/or specific sectoral guidelines exist?
22. Is the EIA system implementation evaluated for effectiveness?
23. Do Environmental technical expertise for conducting EIA exist?
24. Do capacity building trainings exist

Glossary

Developer: *A person, group or agency responsible for developing a new project or proposing to extend the existing project, which is subject to the EIA process.*

EIA Practitioner: *An expert proficient in undertaking and preparing the EIStudy process on behalf of the proponent or developer.*

EIStudy: T*he study that is carried out to determine the possible environmental impacts that the proposed policy, project, plans or activity and several measures to mitigate any of such significant impacts.*

Environmental Management Plan (EMP): *The document detailing specific actions to be implemented by the proponent/developer and other stakeholders to mitigate and minimise the adversity of predicted impacts throughout the project life cycles.*

Environmental Monitoring: *The continuous or periodic act of determining the potential and actual impacts of any activity on the environment ranging from short term or long-term phenomenon.*

Guidelines: *The set of strategies describing several methodologies for the implementation of EIA pre-requisites as adopted by the Authority or Lead agency responsible.*

Impact: *The result of any action affecting one or several elements of the natural, political or socio-economic environment either negatively or beneficially including water, land, atmosphere, climate and/or the biological factors of any flora, fauna or their aesthetic social factor for both natural and built environment.*

Lead agency: *Any government ministry or department, state corporations and parastatals or any local authority in which any law vests power and functions of any element of the environment or natural resource management.*

Project: *A set of strategic activities and plans intended to achieve explicit objectives within a given time frame in a specified area.*

Proponent: *Any private person, government or any organisation proposing to or undertaking a project or programme.*

Review: *The process that involves the adequate checking of an EIStudy to certify and ensure that the process meets the relevant legal requirements and wide acceptance of environmental impact findings and mitigations.*