A CRITICAL REVIEW OF THE QUALITY OF ENVIRONMENTAL IMPACT ASSESSMENT REPORTS IN LESOTHO

L. A. TALIME

Hons. B. Sc. Geography

Dissertation submitted in fulfillment of the requirements for the degree Master of Science in Geography at the University of Free State, Bloemfontein

JANUARY 2011

ABSTRACT

Environmental impact assessment (EIA) is one of the tools used by relevant authorities all over the world in an attempt to ensure that the principles of sustainable development are achieved. Since the Environment Act (EA) No. 15 of 2001 was passed in the parliament many EIAs have been conducted in Lesotho. This Act has been replaced with the EA No. 10 of 2008. Though it was not until June 2009 that the environmental law was promulgated, government institutions and environmental practitioners have been operating within the provisions of this Act. The preparation of high quality EIA reports is one component of an effective translation of EIA policy into practice. The Lee and Colley review package (Lee *et al* 1999) was used to assess the quality of 15 EIA reports submitted to the National Environment Secretariat which is now referred to as the Department of Environment (DoE). The reports comprised of the project briefs (PBs) and the environmental impact statements (EISs). Interviews with the EIA consultants, stakeholders and concerned government officials have also been conducted to underpin the root cause of poor quality of EIA reports. The analysis reveals that several key areas of EIA do not receive sufficient attention. The inadequacies are particularly in areas relating description of the development, identification, evaluation and mitigation of key impacts, consideration of alternatives, and consultation and participation of the public. The government institutions also show less interest in environmental matters and as a result matters relating to environment are given less priority. This leaves the effectiveness of the EIA process to be highly questionable. The study offers suggestions that would improve the EIA process in the country.

Keyword: *Environmental impact assessment*; *effectiveness, quality of EIA reports; Lesotho*

ACKNOWLEDGEMENTS

I am deeply indebted to the following people who contributed immensely and without whom this work would not have been possible:

- First and foremost, to my beloved husband for his love and support throughout all the years.
- To Miss E. Kruger, my supervisor, for her valuable suggestions, continuous support, encouragement and understanding required during the preparation on this thesis. My deepest gratitude.
- To the personnel at the Department of Environment in Maseru, Lesotho, for their unlimited support.
- To the EIA officers in other line Ministries.
- To the personnel at Sechaba Consultants for their invaluable help.
- To ‘M’e Mamochesane, the librarian at the National Library in Lesotho for her invaluable assistance.

Contents

LIST OF FIGURES AND TABLES

Figures

Tables

LIST OF ACRONYMS AND ABBREVIATIONS

CSE	-	Centre for Science and Environment
DOE	-	Department of Environment
DEAT	-	Department of Environmental Affairs and Tourism
EA	-	Environment Act
ECA	-	Economic Commission for Africa
EIA	-	Environmental Impact Assessment
EIS	-	Environmental Impact Statement
IAIA	-	International Association for Impact Assessment
IEMA	-	Institute of Environmental Management and Assessment
IUCN	-	International Union for Conservation of Nature
LEA	-	Lesotho Environment Authority
LEC	-	Lesotho Electricity Corporation
NAP	-	National Action Plan
NEAP	-	National Environmental Action Plan
NEC	-	National Environment Council
NEP	-	National Environmental Policy
NEPA	-	National Environmental Policy Act
NES	-	National Environment Secretariat
NGO	-	Non-Governmental Organisations
PB		Project Brief
ROD	-	Record of Decision
SAIEA	-	Southern African Institute for Environmental Assessment
SEA	-	Strategic Environmental Assessment
TAC	-	Technical Advisory Committee
UNDP	-	United Nations Development Programme
UNEP	-	United Nations Environmental Programme
US	-	United States
WASA	-	Water and Sewage Authority

CHAPTER ONE: INTRODUCTION AND RESEARCH PROBLEMS

1.1 Background of the study

Lesotho is a typical example of a developing country which has experienced many environmental problems as a result of introducing environmental legislation and policy rather late. Although environmental management in Lesotho dates back to the 1930s (Kakonge, 1997), the concept of environmental impact assessment (EIA) first evolved in the country in 1988 (Mokhehle & Diab, 2001). Lesotho was among the first countries to prepare a National Environment Action Plan (NEAP) in 1989 with the support of the World Bank, but it was never implemented (Kakonge, 1997). EIA has only been recently made mandatory with the enactment of the Environmental Act (EA) No. 10 of 2008 (which repealed EA No. 15 of 2001) in June 2009 (Lesotho Government, 2008).

Failure to enforce environmental legislation resulted in many negative environmental impacts. These included heavy pollution emissions, water shortages, inadequate sewage and refuse disposal and health hazards from industrial effluents from Maputsoe and Maseru towns (Kakonge, 1997; Mokhehle & Diab, 2001). Failure of various environmental initiatives has been a result of lack of political will and clear-cut environmental policies and legislation (Kakonge, 1997). Development projects that take place without much thought on how such developments are impacting on the environment result in endangering the very basis on which continuity and sustainability of development projects depend.

EIA can be broadly defined as the systematic identification and evaluation of the potential impacts (effects) of proposed development projects, plans, and legislative actions relative to the physical, chemical, biological, cultural and socio-economic components on the total environment (Canter, 1996). It is a planning and management tool which can be used to identify the type, magnitude and probability of changes likely to occur as a result of a proposed activity or policy, and to convey this information to responsible parties involved in the decision making process (Riffat & Khan, 2006).

The final step of the EIA exercise is to put the conclusions of the assessment in a communicable form to the concerned developer and authority. As outlined in the Principles of Environmental Impact Assessment Best Practice, the impacts of the proposal, the proposed measures for mitigation, the significance of effects and the concerns of the interested public and the communities affected by the proposal should be clearly and impartially documented (IAIA, 1999). Depending on the scope of the project, the final EIA report produced in Lesotho can either be a Project Brief (PB) or an Environmental Impact Statement (EIS). A PB is produced after the screening stage while the EIS is produced when a full EIA was undertaken. Both the PB and EIS will be referred to as an EIA report throughout the text. In Lesotho, EIA is administered by a central agency, the Department of Environment (DoE), previously known as the Lesotho Environment Authority (LEA). There are several purposes for undertaking EIA in Lesotho and these include:

- ✓ To integrate environmental considerations into development planning, thereby promoting sustainable livelihoods;
- ✓ To identify and enhance the positive impacts of the proposed projects;
- ✓ To ensure that potential negative impacts are foreseen and addressed at an early stage in the project cycle;
- ✓ To ensure that affected and interested communities participate in the process;
- ✓ To ensure that decision-makers are provided with information on environmental costs and benefits to complement information on its technical and economic feasibility at key decision points in the development of a project (Lesotho Government, 2002).

As Gilpin (1995) argues the primary purpose of the EIA is to assist the decision-making authority to arrive at a better-informed decision than would otherwise have not been the case. Though acceptance of the importance of environmental issues in development has grown enormously since 1970, the performance of EIA in developing countries generally falls far behind that of EIA in developed countries (Wood, 2003). Research into the quality of EIA reports have been undertaken in some developing countries such as Tanzania (Mwalyosie & Hughes, 1998), Ghana (Appiah-Opoku, 2001), Viet Nam (Doberstein, 2003), Malawi (Mhango, 2005), Pakistan (Nadeem & Hameed, 2006) and South Africa (Kruger & Chapman, 2006; Sandham, Moloto & Retief, 2008; Sandham, Siphugu & Tshivhandekano, 2005; Sandham &

Pretorius, 2008), but not yet in Lesotho. The findings of such research revealed that there are still areas that need to be improved to produce good quality EIA reports. This means that it remains to be seen whether the primary purpose of introducing EIA process in the developing countries is met or not. Since Lesotho is a developing country characterized with rapid industrial expansion, it is of crucial importance that the quality of the EIA reports in the country should be reviewed. Such an exercise will help in highlighting the strengths and weaknesses of the EIA practice in the country and will provide much needed opportunity to constantly improve EIA at the policy, procedural and technical levels. The purpose of EIA effectiveness review is problem solving rather than faultfinding (Sadler, 1996). It is against this background that the research into the quality of EIA studies undertaken in Lesotho was carried out.

1.2 Research Problem

In Lesotho EIA is provided for under the Environmental Act (EA) of 2008 (Lesotho Government, 2008) which has repealed the EA of 2001. It is administered by a central government agency, the Department of Environment (DoE), previously known as the Lesotho Environment Authority (LEA). Though the EA of 2008 was only promulgated in June 2009, EIA first evolved in the country in 1988 (Mokhehle & Diab, 2001). For over a decade EIA studies were undertaken voluntarily without any form of guidelines.

A review of EIAs conducted for 17 major development projects from 1980 to 1999 in Lesotho revealed that seven projects had undergone some form of environmental assessment while systematic EIA was conducted on only two. Formal scoping was seldom followed and public participation was lacking. Evaluation, mitigation and monitoring requirements were also inadequately addressed by most of the EIAs (Mokhehle & Diab, 2001). The quality of EIA reports and the approaches taken to do them have varied because of limited experience and the absence of guidelines (Motsamai, Keatimiloe & Pomela, 2003).

The drafting of the EIA guidelines in 1999 (Lesotho Government, 1999) and the establishment of the Environmental Act No. 15 of 2001 (Lesotho Government, 2001) marked a milestone in the history of EIA in Lesotho (though the Act was never enacted). Finally project proponents and consultants had some guiding documents to refer to when undertaking EIA studies. Since then a lot of EIA reports have been submitted to DoE for review and granting of an EIA licence. Much

as this signifies a step towards fulfilling the goal of subjecting development projects to environmental scrutiny, it is important to evaluate the EIA reports so as to establish the strengths and pitfalls of the EIA practice within the country. And also to establish whether there have been changes on the quality of the EIA reports produced after the guidelines were availed to the project proponents, and provisions made for EIA in the EA No. 15 of 2001. Reviewing the quality of the EIA reports will help in highlighting the constraints to effective implementation of EIA practice and hence develop mechanisms to improve the practice.

1.3 Aim and Objectives of the research

1.3.1 Aim of the research

The principal aim for undertaking this research is to assess the quality of EIA reports in Lesotho in order to understand the effectiveness of EIA in Lesotho.

1.3.2 Objectives of the research

The objectives of carrying out this research are:

1. To review the literature on the effectiveness of an EIA practice and on evaluation techniques used.
2. To review literature on EIA in developing countries (since Lesotho is a developing country)
3. To evaluate the Lesotho EIA reports using the Lee & Colley review package
4. To highlight areas for potential improvement in the EIA report quality
5. To draw conclusions and make suggestions for future improvements

1.4 Significance of the research

This research is expected to provide recent information on the EIA system and EIA practice in Lesotho, and to help understand the functioning of the system and establish ways to improve the whole process. It is also intended to promote knowledge networking with a view to enhancing the application and effective use of EIA as a policy tool in promoting sustainable development. As noted by the IUCN (2007) the quality of available environmental and social information is critical both to review and to supporting the quality of and controlling the cost of EIA itself. It is

also hoped that, analysis of the quality of EIA reports in Lesotho will help other developing countries, particularly the Sub-Saharan countries, and the findings of this research will form a basis for further research on post-authorization activities in order to fully evaluate the performance of EIA in Lesotho.

1.5 An outline of the methodology

To carry out the objectives of the research, 15 EIA reports produced from 2001 until 2006 were reviewed using the Lee & Colley review package (Lee, Colley, Bonde & Simpson 1999). The EIA reports reviewed were obtained from the Department of Environment and from the consultants. Primary data on EIA officers' and consultants' understanding of the EIA procedures and the legal requirements were collected through in-depth interviews and questionnaires. For a detailed description of the methodology employed, refer to Chapter 3.

1.6 Outline of the report

This report comprises five chapters. Chapter 1 provides a brief introductory background to the study and outlines the research problem, the aim and objectives of the research. Chapter 2 gives an overview of existing literature on the effectiveness of EIA and the evaluation techniques used to assess the performance of aspects which contribute to the overall effectiveness of EIA. EIA in developing countries and the state of EIA in Lesotho are also discussed in this chapter. The methodology employed to get the necessary data for the research is outlined in Chapter 3. Chapter 4 discusses the findings of the research. The conclusions drawn from the research and suggestions for improving the quality of EIA reports so as to improve the effectiveness of EIA as a tool to aid decision-making and promote sustainable development are presented in Chapter 5.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Environmental Impact Assessment (EIA) was first established as a response to increasing concerns regarding the environmental effects of major developments (IEMA, 2004). The United States (US) became the pioneer country to establish the first comprehensive environmental protection law, known as the National Environmental Policy Act (NEPA) in 1969. NEPA provided a baseline for EIA legislation throughout the world. The US EIA model and that of other developed countries share basic principles and reflects commonly agreed upon approaches to similar problems (Li, 2008).

While EIAs in developing countries are based on the same set of principles, their implementation often falls considerably short of international standards (Li, 2008; Wood, 2003). They frequently suffer from insufficient consideration of impacts, alternatives and public participation (Appiah-Opoku, 2001; Doberstein, 2003; Li, 2008; Mhango, 2005; Nadeem & Hameed, 2006; Wood, 2003) and hence raise the concerns of whether EIA does influence decision-making or not. Given that EIA is often the chief and most comprehensive means of assessing potential environmental and social impacts of major development projects these inadequacies are particularly troubling, especially in countries where environmental safeguards are weak due to deficiencies in regulation, enforcement or both.

The overall effectiveness of the EIA depends on many aspects but among these the quality of the EIA report is of particular importance (Lee *et al*, 1999). This research is concerned with critically analysing the quality of EIA reports in Lesotho. This chapter provides a review of literature on the effectiveness of EIA practice and the techniques used to evaluate the EIA reports to establish the effectiveness of the EIA practice. The chapter begins with a brief discussion on the concept of EIA and its purpose, followed by a brief discussion on EIA effectiveness, the quality of reports and on the existing review packages that were developed for reviewing the quality of EIA reports over the world. Then literature on EIA in developing countries is explored. The last section of the chapter explores current EIA practice in Lesotho and its shortcomings.

2.2 EIA, its purpose and objectives

2.2.1 What is EIA?

Environmental impact assessment is referred to as a policy and management tool for both planning and decision-making (Glasson, Therivel & Chadwick, 2005; Modak & Biswas, 1999). Lawrence (2003) defines EIA as a systematic process of:

- ✓ Determining and managing (identifying, describing, measuring, predicting, interpreting, integrating, communicating, involving and controlling) the
- ✓ potential (or real) impacts (direct and indirect, individual and cumulative, likelihood of occurrence) of
- ✓ proposed (or existing) human actions (projects, plans, programs, legislation, activities) and their alternatives on the
- ✓ environment (physical, chemical, biological, ecological, human health, cultural, social, economic, built, and interrelations).

This definition shows that EIA is a process that blends many activities. The systematic exploration of interrelationships between the proposal and the environment and among alternatives and impacts is clearly crucial in EIA (Lawrence, 2003). In essence EIA is a systematic process that examines the environmental consequences of development actions and ensures that these effects are taken into account during project design (Glasson *et al*, 2005). It is anticipatory, participatory and systematic in nature and relies on multidisciplinary input. EIA is not restricted or biased to the examination and mitigation of negative impacts alone but positive ones as well. It can explore the possible positive impacts due to development projects and suggest ways of enhancing them further by carrying out modifications in the project. EIA is thus a multifaceted decision-making tool (Modak & Biswas, 1999).

2.2.2 Purpose and objectives of EIA

EIA is a process with several purposes. Its first and immediate purpose is to be an aid to decision making (Glasson *et al*, 2005; Lohani, Evans, Ludwig, Everitt, Carpenter & Tu, 1997; UNEP, 2002). EIA was first established as a response to increasing concerns regarding the environmental effects of major developments (IEMA, 2004). Hence it is expected to provide

information for decision making on the environmental consequences of proposed actions, before decisions are taken and at a time where it can actually affect the outcome (Glasson *et al*, 2005). The emphasis in EIAs, in contrast with other mechanisms for environmental protection such as a cost-effectiveness analysis, is on a systematic, holistic, and multidisciplinary assessment of the potential impacts of specific projects on the environment (Li, 2008).

EIA is thus expected to assist decision makers to ultimately arrive at actions which are more environmentally compatible (Canter, 1996). EIA does not provide decision makers with ready answers, but should provide understandable information on which to base a decision (Pretorius, 2006). The primary objective in fulfilling the purpose of EIA is to ensure that potential problems are foreseen and addressed at an early stage in the project's planning and design. To achieve this objective, the assessment should provide information on the environmental, social and economic benefits of proposed activities (Lee & George, 2000). This should then be presented to decision makers clearly and systematically.

Secondly, EIA's purpose is to aid the developer. Although EIA is seen as time consuming and expensive, when properly undertaken, it can be of great benefit to developers. If the process is fully integrated into the project cycle, it can enable developers to identify environmental and social issues at an early stage. This will allow developers to minimise or eliminate the negative impacts on the environment (Glasson *et al*, 2005). This may lead to improved relations between the developer, the local authority and the local communities and therefore lead to a smoother planning permission process (Glasson *et al*, 2005). The public often see EIA regulations as a means to delay or prevent development. Involving the public in the EIA process can help avoid public controversy and create trust in the applicant and his/her planning (Furia & Wallace-Jones, 2000).

EIA is recognized internationally as a key tool to be used in guiding human beings on the path to sustainable development. Hence the ultimate purpose of EIA is to promote environmentally sound and sustainable development through the identification of appropriate enhancement and mitigation measures (UNEP, 2002). EIA has to ensure that development proposals do not undermine critical resources and ecological functions or well being, lifestyle and livelihood of the communities and people who depend on them (UNEP, 2002). There is still a long way to go

before this purpose can be achieved. To date, EIA has not adequately addressed the cumulative effects of development (IEMA, 2004). This means that there is much work to be done to integrate the sustainability agenda with EIA.

2.3 EIA effectiveness

Since EIA emerged in 1969, academics have been questioning the effectiveness of the process, in both theory and practice (Cashmore, Gwilliam, Morgan, Cobb & Bond, 2004; Sadler 1996). Much of the debate about the effectiveness of EIA revolves around the factors that can be advanced to explain why EIA systems are effective, on which evaluation criteria are appropriate in judging the effectiveness of the EIA system and on how EIA in general can be improved (Glasson *et al*, 2005). According to Sadler (1996) effectiveness refers to whether something works as intended and meets the purpose(s) for which it is designed.

Different authors relate EIA effectiveness either to the quality of EIA reports and EIA procedural implementation (Bailey, 1997; Barker & Wood, 1999; Harmer, 2005; Pinho, Maia & Monterroso, 2007) or on the role of EIA in development planning (Hacking & Guthrie, 2008; Sadler, 1996). Sadler (1996) identified four aspects of effectiveness as:

1) The quality of the reports
2) The effect on decision making
3) The effectiveness of prediction and management of the impacts
4) And monitoring and post-auditing

EIA can be seen as an effective environmental management tool if it achieves three purposes: aid to decision-making, aid to developer and achieving sustainable development (Glasson *et al*, 2005). Literature also states that EIA is effective if it achieves its goals for environmental protection, is cost effective and assesses impacts throughout the life of a project (Glasson *et al*, 2005; Morrison-Saunders & Bailey, 1999). As argued by Glasson *et al* (2005) EIA should be a means to good environmental management over the life of a project. Generally, it is agreed that EIA has led to improvements in the environmental management of development activities (Bailey, 1997; Glasson et al, 2005). However, the development of EIA practice has also been accompanied by a significant amount of literature that identifies numerous weaknesses. Lack of

consideration of cumulative impacts, insufficient public participation, little monitoring and auditing, limited influence on decision making process, inadequate consideration of alternatives and the poor quality of environmental impact assessment reports have been highlighted as weaknesses of current practice (Glasson *et al*, 2005; Mokhehle & Diab, 2001; Wood, 2003). The process of evaluating effectiveness can be rather expensive. However, the purpose of EIA effectiveness review is problem solving rather than faultfinding. It is directed towards process development by highlighting the means for improved quality control and the basis for better practice and management (Sadler, 1996). Since the quality of an EIA report is one indicator of effectiveness, it is crucial for the EIA report to be of good quality for EIA to meet its purpose. The EIA report has to provide an adequate level of environmental information for decision-making.

2.3.1 Quality of EIA reports

The function of the EIA report is to help the responsible authority in making informed decisions, the public in understanding the likely impacts of the proposal, and the proponent in managing these impacts (UNEP, 2002). Therefore the quality of the EIA report is of particular importance among all the aspects that the overall effectiveness of EIA depends. It is the fundamental indicator of the effectiveness of EIA since the information presented in the report reflects the technical and scientific quality of the EIA process (Modak & Biswas, 1999; Pinho *et al*, 2007). The EIA report is the final outcome of the EIA process, hence it should include all the necessary environmental information related to a project and decision-making (Glasson *et al*, 2005; Wood, 2003).

The target audience of the EIA report consists of a non-technical component, represented by decision-makers and members of the public, and a technical component represented by specialists in government bodies, NGOs and other expert groups (Canter, 1996). The EIA report should therefore be clearly communicated in plain, non-technical language which is accessible to the non-specialist, project specific and of direct relevance to the decision-maker (DEAT, 2004). For the EIA to meet its purpose, it is important for the report to be of good quality. Glasson *et al* (2005) highlighted production of poor quality EIA reports as a weakness of current practice.

Research into the quality of EIA reports, particularly in developing countries reveals that there are some areas which could benefit from improvements. These include description of the development and baseline studies, identification of impacts, assessment of impact significance, consideration of alternatives, mitigation of impacts, public participation, monitoring and post-auditing (Jalava, Pasanen, Saalasti & Kuitunen, 2010; Kruger & Chapman, 2005; Mhango, 2005; Peterson, 2010; Sandham, Moloto & Retief 2008; Sandham & Pretorius, 2008). However, EIA quality studies have shown that overall quality of EIA reports have often improved with time (see Glasson *et al*, 2005; Kabir, Momtaz & Gladstone, 2008; Sandham & Pretorius, 2008).

2.3.2 Evaluation and Review

EIA report review is the principal quality control function within any EIA system (Pretorius, 2006). Review is the evaluating of documentation to determine its adequacy for consultation and decision-making (Lee & George, 2000). The purpose of review is to assure the completeness and quality of information gathered in an EIA. The key objectives of EIA review (UNEP, 2002) are to:

- ✓ assess the adequacy and quality of an EIA report,
- ✓ take account of public comment,
- ✓ determine if the information is sufficient for a final decision to be made, and
- ✓ identify as necessary, the deficiencies that must be addressed before the report can be submitted.

The quality review of the EIA report involves evaluating how well a number of assessment tasks have been performed (Lee & George, 2000). The elements of EIA review and the aspects considered differ with arrangements that are in place in a particular country. Reviews must establish a set of quality criteria to be met as well as a minimum standard for achieving these (Pretorius, 2006). A review of the EIA report should not just be a matter of checking that required information is presented. It should also consider the quality and success of the whole EIA process (Jalava *et al*, 2010).

2.3.3 Existing review packages

A large number of guidance documents and sets of criteria have been developed around the world to assist in assessing the adequacy and quality of EIA reports. Examples include the Lee & Colley review package (Lee *et al*, 1999), the European Commission (EC) criteria (2001), the Oxford Brooks University review package (1996), Sandham & Pretorius (2008) and Sandham, Moloto & Retief (2008). All of these packages draw on international practice, and provide valuable insights into the scope of information and considerations that should be included in EIA reports, and set high standards for the contents of EIA reports (Simpson, 2001). The criteria often reflect the regulatory requirements and the set of objectives of EIA with the aim to ensure that the reviewer focuses on appropriate issues (Jalava *et al*, 2010). Some of the packages are discussed below.

2.3.3.1 The European Commission Guidelines on EIS Review

This Guideline is designed to be used to assess the quality of EIA report across European Union member states. The EC Guidelines consist of a checklist with 143 review questions divided into seven sections which may contain subsections (Table 2.1). The checklist could also allow the possibility for comparing the results with similar studies (EC, 2001).

Table 2.1: EC Guidelines (EC, 2001)

Section	Section title	No. of subsections	No. of review questions
1	Description of the project	5	49
2	Alternatives	0	5
3	Description of the environment likely to be affected by the project	2	22
4	Description of the likely significant effects of the project	6	38
5	Description of mitigating measures	0	10
6	Non-technical summary	0	7
7	Quality of presentation	0	12
	Total		143

First the reviewer has to identify whether the listed question is relevant for the particular project. Next, they evaluate the adequacy of the information for decision making. The EC Guidelines

allows the reviewer to answer the questions with “yes” or “no”, but also provides a 5 grade system for evaluating the adequacy of the information in the EIA report and for comparative appraisal of EIA report. The grade system is outlined as follows:

A: Full provision of information with no gaps or weaknesses

B: Good provision of information with only very minor weaknesses which are not of importance to the decision

C: Adequate provision of information with any gaps or weaknesses in information not being vital to the decision process

D: Weak provision of information with gaps and weaknesses which will hinder the decision process but require only minor work to complete

E: Very Poor provision of information with major gaps or weaknesses which would prevent the decision process proceeding and require major work to complete (EC, 2001).

The reviewer grades the quality of information in each section of the checklist by aggregating the grades for the individual review questions, and then aggregates these to provide an overall grading for the EIA report.

2.3.3.2 The Lee & Colley review package

The Lee & Colley review package was developed for the review of EIA reports in the UK (Lee *et al*, 1999). This package had been widely used to undertake reviews of project level EIA reports. It consists of multiple criteria arranged in a four level hierarchical structure consisting of an overall report grade, review areas, categories and sub-categories, which are used to assess the quality of EIA reports (Figure 2.1).

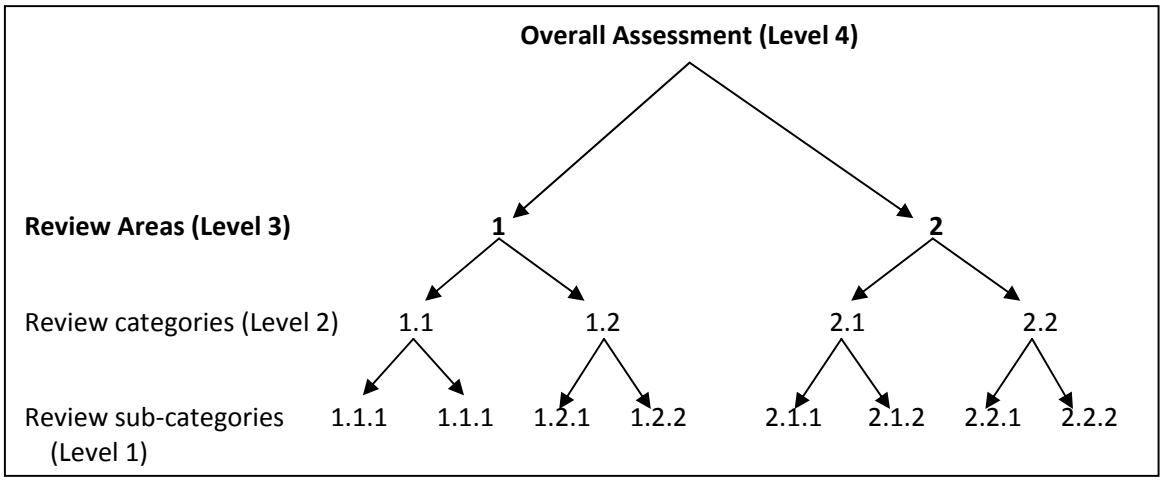

Figure 2.1: The hierarchical structure of the Lee & Colley review package (Lee *et al*, 1999)

The review topics are hierarchically arranged under four review areas and these are:

1. Description of the development, the local environment and the baseline conditions
2. Identification and evaluation of key impacts
3. Alternatives and mitigation
4. Communication of results

The quality review involves evaluating how well a number of assessment tasks (sub-categories, categories and areas) have been performed. The reviewer commences the review at level 1, the sub-categories level (Figure 2.1) which contains simple criteria relating to specific tasks and procedures in the EIA process. Then drawing upon these assessments, the reviewer progressively moves upwards from one level to another, applying more complex criteria to broader tasks and procedures in the process until the overall assessment of the EIA report has been completed.

The assessment from applying each criterion is recorded by the reviewer on a collation sheet using a standard list of assessment symbols (Table 2.2). The symbols A-C represent generally satisfactory performance and D-F generally unsatisfactory performance at each of the levels in the review hierarchy. The collation sheet is not only used to record the assessment symbols, but also as a brief summary of the strengths and weaknesses of the statement that has been assessed.

Table 2.2: Assessment symbols of the Lee & Colley review package (Lee *et al*, 1999)

Rating	Explanation
A	Generally well performed, no important tasks left incomplete
B	Generally satisfactory and complete, only minor omissions and inadequacies
C	Can be considered just satisfactory despite omissions and or inadequacies
D	Parts are well attempted but must, as a whole be considered just unsatisfactory because of omissions or inadequacies
E	Not satisfactory, significant omissions or inadequacies
F	Very unsatisfactory, important tasks(s) poorly done or not attempted
N/A	Not applicable. The review topic is irrelevant in the context of this EIA report

The structural and methodological clarity of the Lee & Colley review package, and its comprehensive scope and familiarity to many professionals in the field of project level EIA makes it a natural choice for adaptation for use with EIA reports (Simpson, 2001). This review package has been developed and adapted to the EIA procedures of many countries (Lee *et al*, 1999; Mwalyosi & Hughes, 1998; Sandham *et al*, 2005; Sandham & Pretorius, 2008; Simpson, 2001). This shows that the Lee & Colley review package is one of the better review packages developed (Lee *et al*, 1999).

2.3.3.3 The Oxford-Brookes University review package

This review package is an amalgamation and extension of Lee & Colley's and the EC's criteria developed by the Impacts Assessment Unit at the Oxford Brookes University and funded by the Department of Environment of the Scottish and Welsh Offices in 1995-96 (Glasson *et al*, 2005). The package is better known as the Impact Assessment Unit (IAU) review package. The IAU review package was developed for a research project into the changing quality of EISs. The package is a robust mechanism for systematically reviewing the EIA report. The package includes 92 criteria and not all the criteria are relevant to all projects.

This review package is similar to the Lee & Colley review package, consisting of a hierarchical system of eight categories, each divided into sub-categories (Glasson *et al*, 2005), but with only three levels in the hierarchy. The review categories are:

- Description of the development

- Description of the environment
- Scoping, consultation, and impact identification
- Prediction and evaluation of impacts
- Alternatives
- Mitigation and monitoring
- Non-technical summary
- Organization and presentation of information

Each criterion is graded on the basis of the quality of the material provided and each section is then awarded an overall grade. From the grade given to each section an overall grade for the report is arrived at. The IAU review grades are based upon the grading system developed by the Lee & Colley review package. A collation mark is given to each category and an overall mark is calculated (Glasson *et al*, 2005).

2.3.3.4 The EIS Checklist for Lesotho

The EIS Review checklist points for Lesotho are grouped into nine headings. These are:

- General information about the proposed project
- EIA procedure (this includes the public hearing process and comments from the interested and affected parties (I & APs)
- Land-use and physical information
- Biophysical information
- Demographic information
- Socio-economic information
- Significant environmental impacts
- Mitigation measures (Environmental Management Plan (EMP))
- Conclusion (Lesotho Government, nd)

For each heading the Environmental Officer undertaking the review should review the statement in the EIA report and draw up the conclusive remarks of the impacts assessed by the DoE. Comparison with guidelines and standards should be made as well as reference to the drafted conditions for how DoE deems the development should operate in order to comply with Lesotho

regulation, development plans etc. This is a one level review checklist for reviewing the completeness of an EIA. This review checklist is hardly effective in reviewing the quality of information that is presented. As Jalava *et al* (2010) argues an EIS review should not just be a matter of checking that required information is presented but should also consider the quality and success of the whole EIA process. There is no alternatives section in the review checklist. The only alternative considered is the location alternative and this is checked under the description of the site.

2.4 EIA in Developing Countries

A lot of developing countries have now adopted EIA as a solution to combating environmental problems caused by development projects however EIA practice in these countries differs from EIA in the developed worlds (Wood, 1995 and 2003) and is at a much less mature stage than in developed worlds (Le Gouais, 2003). This difference can be attributed to the fact that the creation of environmental policies and programs in developing countries has been motivated by quite different factors and has thus proceeded quite differently than in Western countries where EIA originated (Boyle, 1998).

EIA in developing countries is set within a tradition different from developed countries where there is an open system of government, well-informed citizens and wide disclosure of information. Its implementation in these countries is shaped by vastly different political, institutional, social, economic and environmental conditions (Mokhehle and Diab, 2001), and it follows a top-down approach rather than a bottom-up approach. The environmental policies created have largely been 'top-down' initiatives by governments themselves not because of a perceived necessity but as a fashionable response to Western developments (Boyle, 1998). Among the most significant of these influences have been international peer pressures to respond to environmental problems, particularly as articulated at the 1972 Stockholm and 1992 Rio international environment conferences (Boyle, 1998).

Even where formal legislative bases for EIA exist, the bottom-up demand for environmental controls and organizational capacity to implement them are often absent in developing countries (Wood, 1995). Wood (1995) and Doberstein (2003) regard this lack of demand as a consequence of the lack of political priority accorded to the environment in general, and EIA in particular.

Glasson *et al* (2005) also cites working in a culture where there is an absence of information sharing as a reason for lack of indigenous demand for environmental protection. Despite the slow diffusion of EIA into developing countries, over the last two decades, environmental impact assessment has been incorporated, either formally or informally into the planning structures of most developing countries worldwide. However, as Doberstein (2003) argues, the most important question with regard to the EIA concept in developing countries is not whether EIA is present, but whether it is structured and positioned well enough within the overall development planning to reduce the negative impacts of development.

The viewpoint in developing countries towards EIA is that environmental effects must not be ignored but development must not be impeded for this reason alone. The response of developing countries to environmental protection pressures is constrained by policy priorities. The economic, social and political concerns may be considered more important and be given greater attention (Lee, 2000). Despite the increase in adoption of environmental regulations into planning structures of most developing countries, their effectiveness is often reduced and hence the EIA performance in developing countries falls short of EIA in developed worlds (Annandale, 2001; Lee & George, 2000; Wood 2003).

The reasons for this ineffectiveness are given by Lee (2000) as incomplete coverage, overlapping competencies relating to their application, ambiguities over the interpretation of their provisions, inadequacies in monitoring compliance and deficiencies in enforcement procedures and practice. In addition, academics have identified the following factors as constraints to effective implementation of EIA in developing countries: the unavailability, inadequacy and inaccessibility of environmental data; poorly defined scoping process; weak consideration of alternatives; ineffective mitigation measures; ineffective consultation and public participation; poor quality reports; poor EIA follow-up; poor enforcement of the implementation of EIA due to lack of adequately skilled staff, inadequate financial and human resources, transport and monitoring equipment (Appiah-Opoku, 2001; Duthie, 2001; ECA, 2005; Hutton, Telford & Krugmann, 2003; Kakonge, 2006; Mhango, 2005; Memon, 2000; Nadeem & Hameed, 2005; Peterson, 2010; Spong & Walmsley, 2003; Steinemann, 2001; Ts'ehlo, 2003; Zubair, 2001; Wood, 2003).

Most EIA legislation in developing countries provides that the no-action alternative be explored, yet in practice this hardly takes place. The no-action alternative is often not a viable choice in circumstances where the alleviation of poverty and starvation may be the predominant goal (Diab, Ellery, Tooley, Mckenzie & Barnes, 1999; ECA, 2005; Wood, 2003). Where there are conflicting interests, the development needs of the local community and the opportunity to improve their living conditions become the overriding factor in the final decision on whether to develop or not (Diab *et al*, 1999). This was particularly the case in KwaZulu-Natal in South Africa concerning the construction of a power line (Diab *et al*, 1999).

The local community felt that the construction of the power line would improve their living conditions as they will have electricity. However, Non-Governmental Organisations (NGOs) were concerned about the ecological sensitivity of the proposed area, and felt that another alternative should be explored. After much debate and opposition from the concerned environmentalists, the construction of a power line was given the go ahead. This proves Wood's (2003) point in arguing that the no-action option is often not a viable choice in circumstances where the alleviation of poverty and starvation may be the prominent goal.

The best alternative can be deliberately avoided in developing countries (Zubair, 2001). This is a particularly sensitive issue for developing countries, where mega-projects that have significant macroeconomic impacts are a novelty, but enjoy high-level political support (Hutton *et al*, 2003). Economic benefits derived from such projects typically carry a high environmental cost, but because of the prevailing political will and pressure from proponents, little value is placed on the analysis of the alternatives (Hutton *et al*, 2003).

For example, the proposal to construct the Upper Kotmale dam and hydropower station in Sri Lanka involved risky tunneling and meant that part of Talawakelle Township would be inundated (Zubair, 2001). Instead of considering a run of the river reservoir that would reduce the power capacity from 125 to 90MW, with less environmental impacts, nonviable alternatives were considered. These included opting for power generation with diesel and coal, and energy conservation, which were merely examined and dismissed (Zubair, 2001).

Active participation of the public is an important principle for best practice EIA (IAIA & IEA, 1999). Glasson *et al* (2005) argues that the public as well as statutory consultation can help to ensure quality, comprehensiveness and effectiveness of EIA. Though it is widely accepted in developed countries that the benefits of stakeholder involvement in EIA include development that delivers more environmental and social benefits and avoids conflicts (Hughes, 1998), there is no tradition of consultation and participation in many developing countries (Lee, 2000; Purnama, 2003; Wood, 1995).

Motsamai, Keatimilwe & Pomela (2003) argues that little participation results from a lack of appreciation of the role of EIA in development and insufficient information about proposed development projects, which comes from the absence of a culture of public debate on developmental issues. Insufficient information about proposed development projects can also be due to physical remoteness of some concerned areas, which makes it difficult for their inhabitants to gain access to information relevant to development plans and to EIA (Bisset, 2000; Hughes, 1998). The use of complex technical jargon in public forum with a public not technically equipped with the required knowledge to understand and critically challenge information is another factor affecting effective public participation (Weaver, Chonguica, Rukato & Tarr, 2003).

As in the developed world, monitoring has been a missing step in EIA in developing countries (Wood, 2003). Wood (2003) argues that projects in developing countries may change substantially between authorization and implementation and environmental controls may not be observed or monitored. Therefore monitoring is crucial for effective implementation of EIA systems. Without some form of follow-up, the consequences of pre-decision EIA activities will not be known. By incorporating feedback into the EIA process, follow-up assesses the impact of impact assessment and thereby enables learning from experience to occur (Morrison-Saunders & Arts, 2004). Wood (2003) fears that advances in environmental protection and enhancement achieved through the use of EIA in developed nations will prove inadequate on a global scale unless a similar level of attention is given to the application of EIA in developing countries.

2.5 EIA in Lesotho

2.5.1 Evolution of EIA in Lesotho

The concept of EIA was first introduced in Lesotho in 1988, during an International Conference on Environment and Development, sponsored by the Lesotho Government and the World Bank (Mokhehle & Diab, 2001). Lesotho showed its commitment to the process of sound environmental planning in 1989 with the preparation of a National Environment Action Plan (NEAP), with the support of the World Bank (Kakonge, 1997). The NEAP (Lesotho Government, 1989) provided for increased awareness of environmental concerns in sectoral planning and programming. Following the preparation of the NEAP, Lesotho's Constitution was amended in 1993 to incorporate a section on environmental protection (Lesotho Government, 1993). Section 36 of the Constitution states that:

> *"Lesotho shall adopt policies designed to protect and enhance the natural and cultural environment of Lesotho for the benefit of both present and future generations and shall endeavor to assure to all citizens a sound and safe environment adequate for their health and well-being,"*

The 1992 Rio Earth Summit propelled Lesotho to engage in initiatives aimed at sustainable development and improved resource management. Subsequent to the NEAP, the National Action Plan to implement Agenda 21 was launched in May 1994 (Lesotho Government, 1994). This action plan built on the foundation of NEAP and emphasized the importance of having an environmental legislative framework in Lesotho. It recommended that EIA be made mandatory for specific development projects. The environmental problems expressed in the NEAP and Agenda 21 National Action Plan resulted in the formation of the National Environment Secretariat (NES). NES was initially established under the Prime Minister's Office as the main environmental coordinating institution in Lesotho. Subsequently the NES fell under the Ministry of Gender and Youth Affairs, and then moved to the Ministry of Tourism, Environment and Culture in 2003.

Since the establishment of the Environment Act (EA) No. 10 of 2008, the NES is now known as the Department of Environment (DoE). DoE is responsible for administering EIA in Lesotho.

The mandate of DoE is to coordinate and facilitate good environmental management practices in the country, and to oversee EIAs for all projects with significant impacts in Lesotho and to ensure that aspects of public participation and technical review are undertaken effectively. The National Environmental Policy (NEP) was adopted by the Lesotho Government in 1996 and was revised in 1998 (Lesotho Government, 1998). The overall goal of the NEP is to achieve sustainable livelihoods and development for Lesotho.

The environmental policy focuses on the social and economic dimensions, the management and conservation of natural resources and the promotion of community participation. One of the objectives of NEP is to develop a system of guidelines and procedures for EIA, audits, monitoring and evaluation in order to minimize or mitigate adverse environmental impacts and enhance environmental benefits. The guiding principles for EIA, monitoring and auditing are set out in section 4.22 of the NEP (Lesotho Government, 1998).

The Environment Bill of 1998 which subsequently became known as the Environment Act (EA) No. 15 of 2001 (Lesotho Government, 2001) was produced with the help of the United Nations Development Programme (UNDP). The Environment Act (EA) No.15 of 2001 was passed in the parliament but was never enacted, however all the government institutions and environmental practitioners have been operating within the provisions of this legislation. The Environment Act No. 15 of 2001 was revised and eventually the Environment Bill of 2006 was produced. The Environment Bill of 2006 has since been replaced with the Environment Act (EA) No. 10 of 2008, which was enacted on 16 June 2009.

The aim of the Environment Act No. 10 of 2008 (Lesotho Government, 2008) is to provide framework environmental law for the implementation of the National Environment Policy. Part V of the Act is the most relevant to EIA practice in the country. The aspects covered in this section include:

- s 19 Types of projects for which and EIA is required
- s 20 Submission of a project brief
- s 21 EIA studies and statements
- s 22 Review of EIS
- s 23 Environmental monitoring
- s 24 Environmental audits
- s 25 EIA licence and record of decision

The new Act is similar in scope to the old Act but strengthens certain elements such as actions to be taken with regard to spills and environmental emergencies, and also the institutional arrangements. The EA No. 10 of 2008 makes provision for the Director to establish environmental quality standards for water quality; air quality; soil quality; wastes; noise; and for control of noxious smells (Lesotho Government, 2008). The new Act also makes provision for the establishment of various institutional structures: the National Environment Council (NEC), the Environmental Coordinating Committee (ECC) and the Environmental Units (EUs).

The Council will be responsible for drafting environmental policy, harmonizing policies, plans and activities of government departments and ensuring coordination among stakeholders engaged in environmental protection. The ECC will be responsible for ensuring that there is maximum co-operation and coordination among the line ministries and other organisations dealing with environmental protection. There are no EIA regulations currently but the Department of Environment is busy drafting them.

Section 25(1) of the EA No. 10 of 2008 states that no person shall operate, execute or carry out a project or activity specified in the First Schedule to EA No. 10 of 2008 without an EIA license issued by the DoE. Provision is made for penalties with non-compliance of the provisions of the Act. Following the formulation of the Environment Bill in 1998, draft EIA guidelines were produced in 1999 to ensure that a proper procedure is followed for all projects with significant impacts on the environment. The EIA guidelines were reproduced in 2002 (still as a draft). The 'final' EIA guidelines were produced in 2009, following the promulgation of the Environment Act No. 10 of 2008. The guidelines are designed to help to integrate environmental concerns and economic development from the earliest stages of project development as required in the National Environment Policy and the EA No. 10 of 2008. The guidelines are applicable to all types of projects, whether initiated by the public sector or private sector, for which EIA is required.

2.5.2 EIA Procedural Framework in Lesotho

The steps to be taken in the EIA process are set out in detail in the draft EIA guidelines for EIA in Lesotho. The procedures and steps are summarized in Figure 2.2. Project proponents who wish to initiate activities listed in the Schedule are obliged to apply for an EIA licence, before

commencing with a development. As a first step in the application of an EIA licence, the proponent is required to meet and discuss the development proposal with DoE and then to prepare and submit 15 copies of a project brief (PB) to DoE. DoE then distributes the PB to relevant line ministries for review.

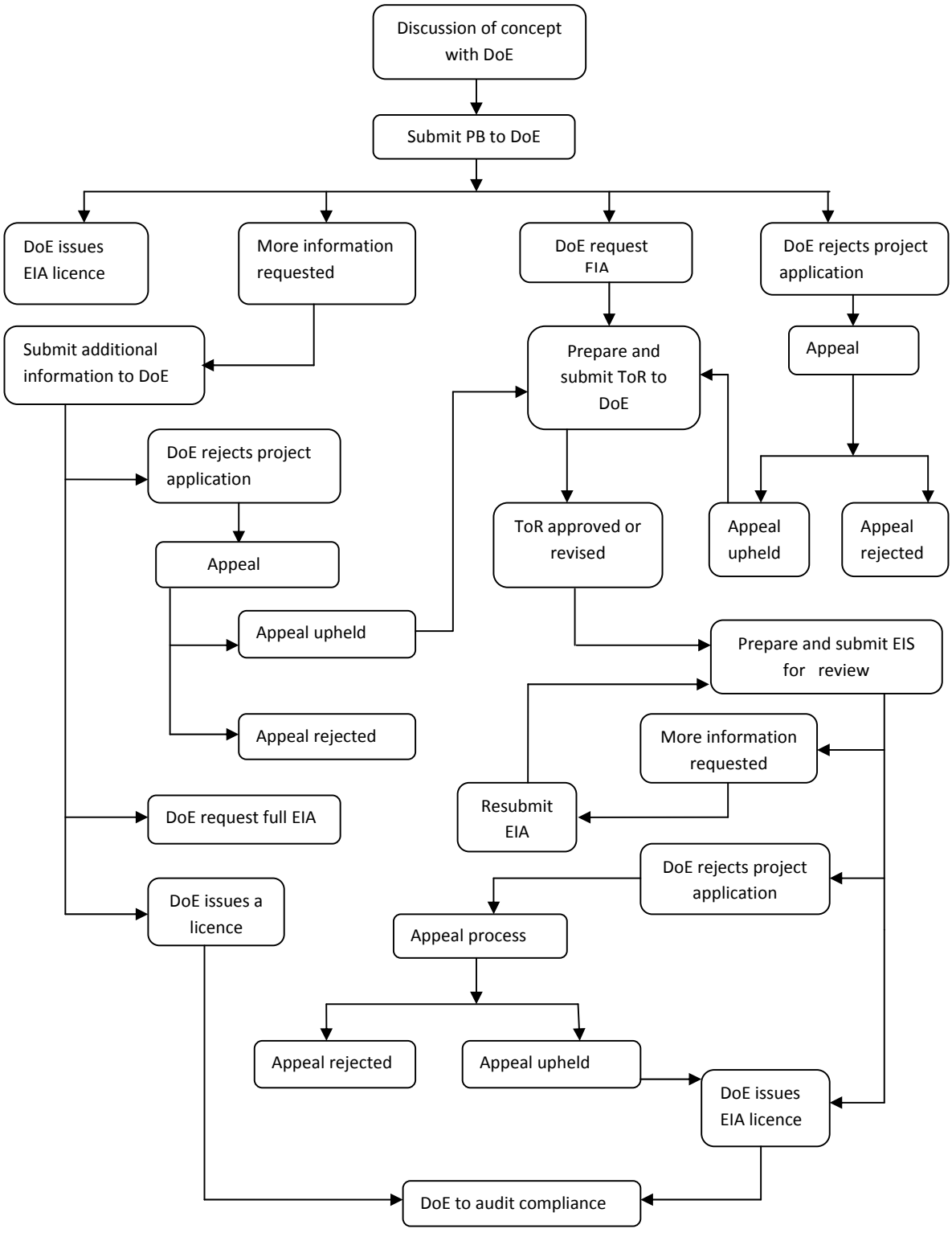

Figure 2.2: EIA procedure in Lesotho (Lesotho Government, 2008 and 2009)

The project brief consists of: purpose, nature, location and scope of the project; activities to be undertaken; the policy, legal and administrative requirements; the likely impacts; alternatives; issues, opportunities and constraints; environmental management and mitigation plans (Lesotho Government, 2002). Upon receiving the project brief, the Director of DoE can classify the PB as one requiring:

1) No formal assessment and issue a license
2) A preliminary environmental assessment (additional information is required before decision is made)
3) A full EIA (a full EIA must be undertaken and then an Environmental Impact Statement (EIS) is prepared on completion of study.

Both the preliminary environmental assessment and a full EIA are undertaken by consultants approved by DoE. DoE has prepared a list of minimum requirements for environmental consultants in Lesotho, and is in the process of establishing a registration and certification scheme for environmental consultants in Lesotho. This would mean that only certified consultants would undertake the required environmental studies. Contents of EISs include: detailed description of the project and its activities; potentially affected environments, technology and processes used; outline of alternatives considered; environmental impacts of the proposed project (direct, indirect and cumulative); a description of how the information provided has been generated; uncertainties encountered; social, economic and cultural impacts of the development; identification and a comprehensive mitigation plan (Lesotho Government, 2009).

The cost of conducting the EIA is borne by the developer. The developer is expected to submit an EIS 30 days after its completion to DoE for review. The Act provides for an EIA report to be open for public inspection however the report can only be inspected on payment of the prescribed fees. After reviewing the EIS and if the Director is satisfied with the adequacy of the report and feels that the project or activity should be approved, the Director then issues an EIA license with terms and conditions appropriate and necessary to facilitate sustainable development and effective management of natural resources. When the project application is rejected proponents are allowed to make appeals. The appeal must be made in writing to DoE within 30 days of the decision to reject the application. Failure to prepare PBs/EISs for projects listed in

the First Schedule to the Act can result in imprisonment or a fine. Monitoring and auditing are the responsibilities of the Director of DoE.

2.5 Shortcomings of EIA in Lesotho

Under the new Act (EA No.10 of 2008), consultants are not required to carry out any public consultation and include findings of such processes in the EIA report. This does not reflect best practice. Most funding agencies would require that a full public consultation process be carried out as part of the EIA. Section 21(3) states that the EIS shall be open for public inspection and may be inspected on payments of the prescribed fees. Environmental problems affects all citizens in a country and as thus the EIS should be treated as a public document and should be made available for inspection freely, with no charges being imposed.

Section 22 (a)-(d) makes provision for the Director to invite public and persons likely to be affected by the proposed project to comment on the EIS if the Director deems it necessary. The Director may also decide to hold a public hearing for the affected parties, after submission of the EIS. This means that where the Director is of the opinion that public review of EIS is not necessary the public will not get the opportunity to verify the contents of the EIS, especially the analysis of social impacts. Also, holding a public hearing after the completion of the EIA study would not be deemed to be an acceptable public consultation process.

No provision is made for public review of the project brief (PB). Considering the fact that for some projects the EIA licence is issued after the screening stage, it is quite troubling that the public is not allowed to review the PB. There are no legal provisions for decentralization or outsourcing the administration of the EIA process in Lesotho. Legal provisions should be made for decentralization of administration of the EIA process to promote awareness of environmental concerns throughout the ten Districts of Lesotho. Despite EIA having been lifted to legislative level in many developing countries, including Lesotho, there is still a need for development and improvement of the institutional dimension of EIA.

EA no. 15 of 2001 provided for environmental monitoring, however this is hardly carried out. Ts'ehlo's research (2003) revealed that EIA follow-up in Lesotho is not a common practice. Currently there are no regulations governing EIA, it is just an Act. There is no specific review

criteria, just a checklist hence the EIA report review is highly subjective. DoE is highly understaffed. Currently there are only three EIA Officers and they have to review all the countries' EIA reports (personnal communication with M. Peete-Mathaba, 2009). Since the comprehensiveness and quality of EISs is still a matter of concern, establishing a committee that will be responsible for reviewing the quality and adequacy of EIA reports is a must in Lesotho. Peterson's (2010) comparative analysis of individual and group assessment of the EISs revealed that the joint assessment resulted in several sections of the EIS receiving lower grades than the initial grades from individual assessment. This shows that the group was more critical of the details than the individual reviewers were.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The issue of examining or evaluating EIA processes has been approached with differing intensions. According to Emmelin (1998) there are four categories of EIA evaluation. Category 1 consists of approaches that focus on EIA system design from an administrative point of view. An example of this is the international comparative review work done by Wood (1995). Wood (1995) established evaluation criteria based on an ideal type EIA system. This evaluation model consists of 14 core criteria.

Category 2 consists of evaluation of EIA documentation against ideal type criteria for 'good' documents or 'good' practice. An example of this is the Lee and Colley EIS review package (Lee *et al*, 1999). The third category of EIA evaluation focuses on the practical implementation of EIA. In this category, implementation tends to be measured by way of case study surveys, with a specific interest in effectiveness. The best example of this is the work done by Sadler (1996).

The final category consists of those that attempt to understand the functioning of EIA, and the quality of processes and documents, in the context of organizational and professional culture. This categorization scheme suggests that researchers can make choices about how to approach the task of evaluation of EIA.

The Lee and Colley review package was used for this study. This chapter describes the research design and methodology used in carrying out the objectives of the research and how results obtained were analyzed. Both primary and secondary data were used in this research.

3.2 Research design

Primary data on the state of EIA practice in Lesotho were collected through interviews and questionnaires (see Appendix E). Interviews were carried out with EIA officials from DoE and other stakeholders (relevant line ministries) to provide information on the status of environmental legislation in Lesotho, the quality of EIA reports and to identify factors that influence quality. These personnel were selected because they are responsible for reviewing EIA

reports after submission and were in a position to provide additional information on the quality of EIA reports in Lesotho.

Secondary data were obtained through reviewing the EIA reports. The EIA reports were evaluated using the Lee and Colley review criteria. The Lee & Colley review package was developed for the review of EIA reports in the UK (Lee *et al*, 1999) but had been widely used to undertake reviews of project level EISs. This review package has been successfully used in a number of countries where it has been developed and changed to be appropriate to the EIA procedures of these countries (Glasson et al, 2005; Mwalyosie & Hughes, 1998; Pretorius, 2006). The successful use of this review package worldwide, and its quick and easy to understand structure and methodology are the reasons why the Lee and Colley review package was used in this study.

3.3 Sampling protocol

The Lee & Colley review criteria was administered on 15 EIA reports (Appendix B) produced between 2001 and 2006. Initially 20 randomly selected EIA reports produced from 2001 until 2008 were anticipated to be reviewed however only 15 reports could be accessed due to closure of the library at the DoE. Two EIA reports were to be randomly selected from each of these sectors: manufacturing industries, mining and mineral extraction, roads, urban and rural development (for example, hotels, shopping complexes, library etc), energy infrastructure, waste handling, storage & treatment, tourism (for example, national conservation areas), agriculture, water resources (for example, dams) and communication facilities (all projects carried out under these sectors must be subjected to EIA as stated in the EA No. 10 of 2008). However this proved to be difficult due to the closure of the library at DoE as a result of ongoing renovations. Alternatives had to be made and some reports were sourced from consultants. Only 15 EIA reports were readily accessed and all 15 were reviewed regardless of the sectors under which the EIA was carried out.

3.4 Lee and Colley review package

The package consists of hierarchically arranged review topics under four review areas (L ee *et al*, 1999):

1. Description of the development, the local environment and the baseline conditions
2. Identification and evaluation of key impacts
3. Alternatives and mitigation of impacts
4. Communication of results

When using the Lee and Colley package, the review is done by a team of two people who are sufficiently familiar with the requirements of the EIA process and who ideally have technical competencies related to the particular nature of the environmental study. Working independently, the findings of the review are recorded on a collation sheet. The final evaluation score is given after the two reviewers have discussed their evaluations and attempted to reach consensus at every level. In this package, the reviewer begins the review at the lowest level, level 1 (Figure 3.1).

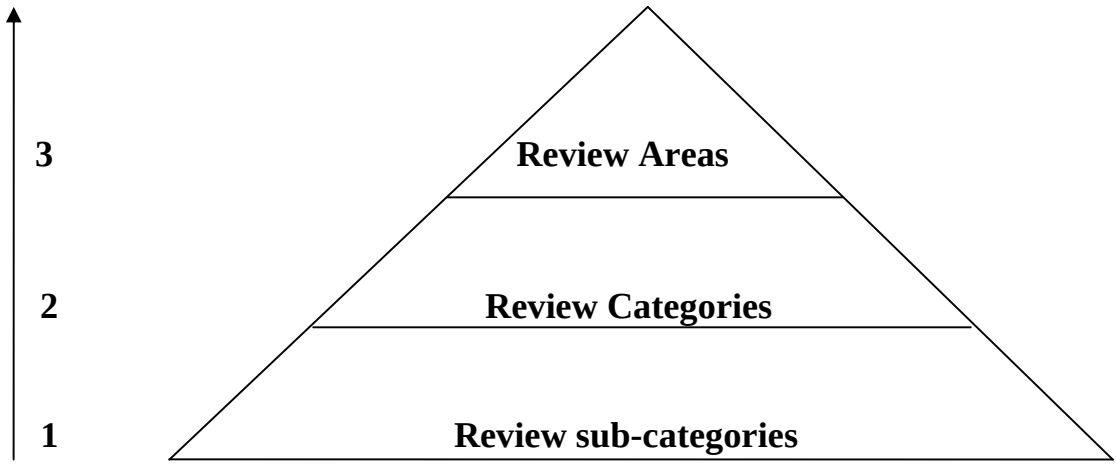

Figure 3.1: The hierarchical structure of the Lee and Colley review package (Lee *et al*, 1999)

This level contains simple criteria relating to specific tasks and procedures in the EIA process. These are referred to as sub-categories. Then drawing upon these assessments, the reviewer progressively moves upwards from one level to the next applying more complex criteria to broader tasks and procedures in the process until the overall assessment of the EIA statement has been completed. The content and quality of the environmental statement is reviewed under each of the sub-categories, using a sliding scale of assessment symbols (Table 3.1). The reviewer then records the assessment resulting from the application of each criterion on the Collation Sheet

(see Appendix D). The Collation Sheet is not only used to record the assessment symbols, but also as a brief summary of the strengths and weaknesses of the report that has been assessed. Alphabetical symbols were deliberately chosen to discourage addition and subtraction, which could distort results (Lee *et al*, 1999). Scores for higher levels of the hierarchy are not determined by numerical averages but by an overall performance score per category.

Table 3.1: Assessment symbols of the Lee & Colley criteria (Lee *et al*, 1999)

Rating	Explanation
A	Generally well performed, no important tasks left incomplete
B	Generally satisfactory and complete, only minor omissions and inadequacies
C	Can be considered just satisfactory despite omissions and or inadequacies
D	Parts are well attempted but must, as a whole be considered just unsatisfactory because of omissions or inadequacies
E	Not satisfactory, significant omissions or inadequacies
F	Very unsatisfactory, important tasks(s) poorly done or not attempted
N/A	Not applicable. The review topic is irrelevant in the context of this EIA report

3.5 Data Analysis

Findings of the study will be presented first, followed by the interpretation of the results. Data analysis will be twofold. The first part of the analysis will focus on the finding of the review of the selected case studies. Due to the amount of detail included in the sub-categories, only the results of the categories will be discussed. The results of the sub-categories review will be included in the report as Appendix A. The discussion will commence at the category level as this gives the optimal indication of the overall assessment of the report. The results will be discussed by review area and category.

The second part of the chapter will be an analysis of the questionnaire results. The chapter will conclude with the overall analysis of the quality of the EIA reports in Lesotho. Since the category graded A, B, and C is regarded as having performed satisfactorily, these grades will be grouped together to determine the percentage of reports that are considered to be of satisfactory quality for broader interpretation.

3.6 Limitations of the study

The following limitations were encountered in undertaking the study:

- The closure of the library in the DoE made it difficult to access the EIA reports from the department. Alternatives were made and some EIA reports were sourced from the consultants.
- Only 15 reports could be reviewed instead of 20 as anticipated. It was anticipated that 20 EIA reports will be randomly selected from the reports produced from 2001 until 2008. Two reports were to be randomly selected from each of the following sectors: manufacturing industries, mining and mineral extraction, roads, urban and rural development (for example, hotels, shopping complexes, library etc), energy infrastructure, waste handling, storage & treatment, tourism (for example, national conservation areas, agriculture, water resources (for example, dams) and communication facilities. EIA is required for all projects carried out under these sectors (Lesotho Government, 2008).
- The reports accessed did not have information on the time taken for authorization of projects and the record of decision and so these two aspects were not reviewed. Assessment of these aspects of the EIA process was based on the information gathered from interviews.
- Only one project proponent could be reached due to time constraints
- Of the 15 EIA reports reviewed, 13 were PBs and 2 EIAs.

CHAPTER FOUR: RESEARCH RESULTS AND ANALYSIS

4.1 Introduction

This chapter deals with the analysis and interpretation of results obtained from reviewing 15 EIA reports (of which 13 were the PBs and 2 EISs) using the Lee & Colley review package. The chapter also includes an analysis of the questionnaires administered to EIA practitioners, relevant authority and project proponents. Due to the amount of detail included in the sub-categories of Review Areas, only the results of the Review categories and Review Areas will be discussed in the report, the evaluation results of the sub-categories are included in Appendix A. The layout of the chapter is such that section one of the analysis is presentation and interpretation of the evaluation of the EIA reports, while section two discusses the questionnaire results. The chapter concludes with the overall analysis of the quality of EIA reports in Lesotho and their implication on the effectiveness of EIA practice in Lesotho.

4.2 Results and discussion of the EIA reports review

4.2.1 Review Area 1 – Description of development, the local environment and the baseline conditions

The purpose of this Review Area is to get a holistic picture of the proposed development within an existing environment and baseline conditions so as to predict, analyse and assess all possible impacts efficiently. Review Area 1 is divided into five review categories (Table 4.1). The results for Review Area 1 are presented in Figure 4.1, and the average data for Review Area 1 is presented in Figure 4.2.

Table 4.1: Summary of results from case studies

Review Category		Well performed	Satisfactory, minor omissions	Satisfactory, omissions and inadequacies	Unsatisfactory	Very unsatisfactory, poorly done	Very unsatisfactory, tasks not done	% s Satisfactory (A-C)
Summary of preliminary grades		**A**	**B**	**C**	**D**	**E**	**F**	
1.1	Description of the development	1	3	5	3	2	1	60
1.2	Site description	0	1	6	3	3	2	47
1.3	Residuals: types and quantities	0	1	8	4	1	1	60
1.4	Bounding of study	0	1	6	5	2	1	47
1.5	Baseline conditions	0	2	6	2	2	3	53
2.1	Identification of impacts	0	0	2	4	0	9	13
2.2	Analysis of impact severity	0	0	4	2	5	4	27
2.3	Assessment of impact significance	0	0	4	2	4	5	27
3.1	Alternatives	0	2	1	2	4	6	20
3.2	Scope and effectiveness of mitigation	0	1	5	3	2	4	40
3.3	Commitment to mitigation	0	2	3	3	2	5	33
4.1	Public involvement	0	2	4	4	2	3	40
4.2	Layout of report	0	4	4	2	3	2	53
4.3	Presentation of information	2	2	6	1	3	1	67
4.4	Emphasis	0	3	7	2	1	2	67
4.5	Non-technical summary	0	3	2	3	1	6	33
SUMMARY OF ALL REVIEW AREAS								
1	Description of the development, the local environment and the baseline conditions	0	2	5	5	2	1	47
2	Identification and evaluation of key impacts	0	0	4	1	5	5	27
3	Alternatives and mitigation of impacts	0	2	3	3	2	5	33
4	Communication of results	0	4	3	3	2	3	47
FINAL GRADE FOR EIA REPORT		0	1	4	4	1	5	33

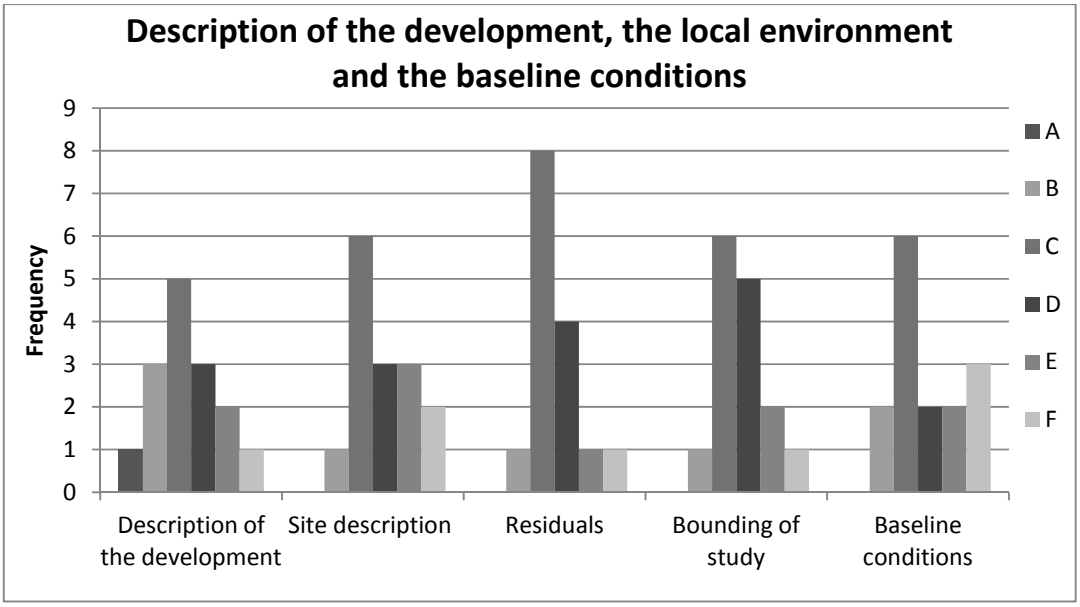

Figure 4.1: Results of the Review categories of Review Area 1.

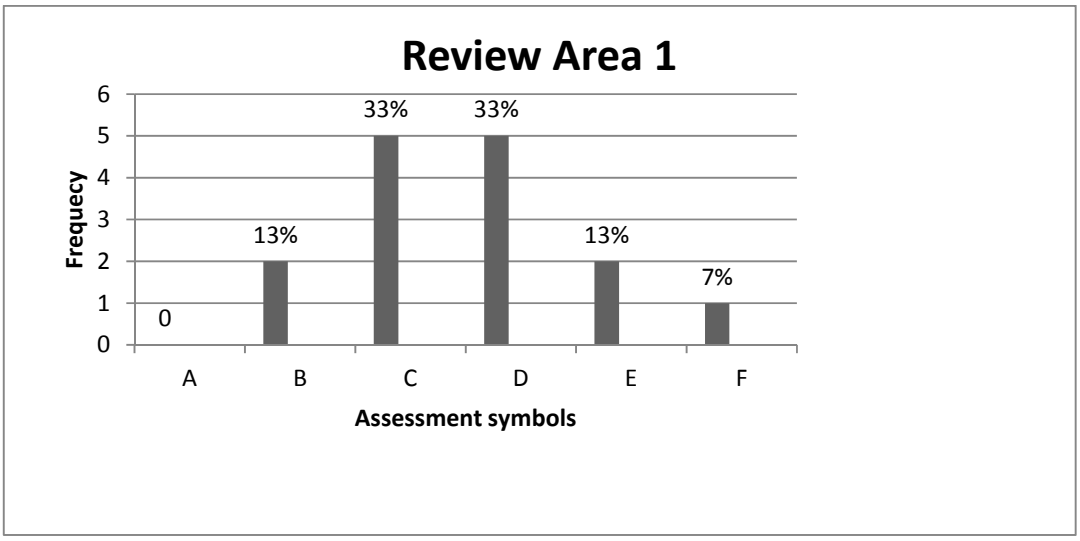

Figure 4.2: Results of Review Area 1

Review category 1.1 (60%), 1.3 (60%) and 1.5 (53%) were found to be satisfactorily described while Review category 1.2 (47%) and 1.4 (47%) were not so satisfactory described (Table 4.1 and Figure 4.1). When considering the results of the sub-categories (Appendix A) it is clear that the description of the development and the residuals are not problem areas since all the sub-

categories' satisfactory ratings were above 50%. The overall assessment of Review Area 1 shows that 47% (7 of the 15 reports reviewed) of the EIA reports reviewed provided a satisfactory description of the development, the local environment and the baseline conditions (Table 4.1 and Figure 4.2). The low quality (less than 50% the reports A-C) project description resulted from incomplete information on the project scope and timeline, which was missing information on project steps and phases. The reason for the poor description of Review 1.4 can be attributed to the fact that the task of designing and sketching plans is usually left with the architects hired by the developers and not with the consultants, and are not so readily available when requested by consultants to include in the report. 53% of the reports reviewed (Table 4.1) did not include plans of the development.

Review category 1.5 was just satisfactorily (53%) attempted. Looking at the results of the sub-categories (Appendix A) it can be seen that 67% of the EIA reports reviewed satisfactorily attempted sub-category 1.5.1 due to the fact that secondary data about topography, land use, climate and socio-economic aspects were used. However this data is not readily available to consultants as was revealed during interviews with stakeholders. To collect data about baseline conditions of every area is too expensive and time consuming. However it is crucial that data about baseline conditions is continually collected to improve the EIA process in Lesotho.

Sub-category 1.5.2 (47%) and 1.5.3 (27%) were not satisfactorily attempted. Only 5 (33%) of the reports reviewed satisfactorily determined the probable future state of the environment in the absence of the projects. No attempt to determine the probable future state of the environment if the development is not carried out was made in 33% of the reports reviewed. This explains why the overall assessment of the reports that satisfactorily attempted Review category 1.5 is just 53% (Table 4.1 and Figure 4.1).

4.2.2 Review Area 2 - Identification and evaluation of key impacts

The process of impact prediction is generally considered to be the core activity of the EIA process since it identifies the nature of the impacts that lead to decisions being made on whether projects can proceed or not. As shown in Table 4.1, Figure 4.3 and Figure 4.4, the identification and evaluation of key impacts is the most poorly attempted Review Area with only 27% of the EIA reports reviewed being of satisfactory level. 5 (33%) of the EIA reports received a grade E

and another 5 (33%) a grade F in the overall assessment of Review Area 2 (Figure 4.4). The EIA terms of reference are required when the full EIA is undertaken. Since full EIAs were undertaken in 2 of the reports, 13 of the EIA reports reviewed did not document the EIA terms of reference. Hence it was difficult to establish whether all significant impacts have been accounted for. The process of scoping is that of deciding, from all of the project's possible impacts and from all the alternatives that could be considered, which of the identified impacts are significant. In Lesotho the PB is submitted after the screening stage and the EIS, after the scoping exercise. This means all the possible and significant impacts of the proposed projects had not been fully explored and hence leaves much to be desired with respect to the adequacy of PBs when regarded as complete EIA reports, especially with big projects such as mining.

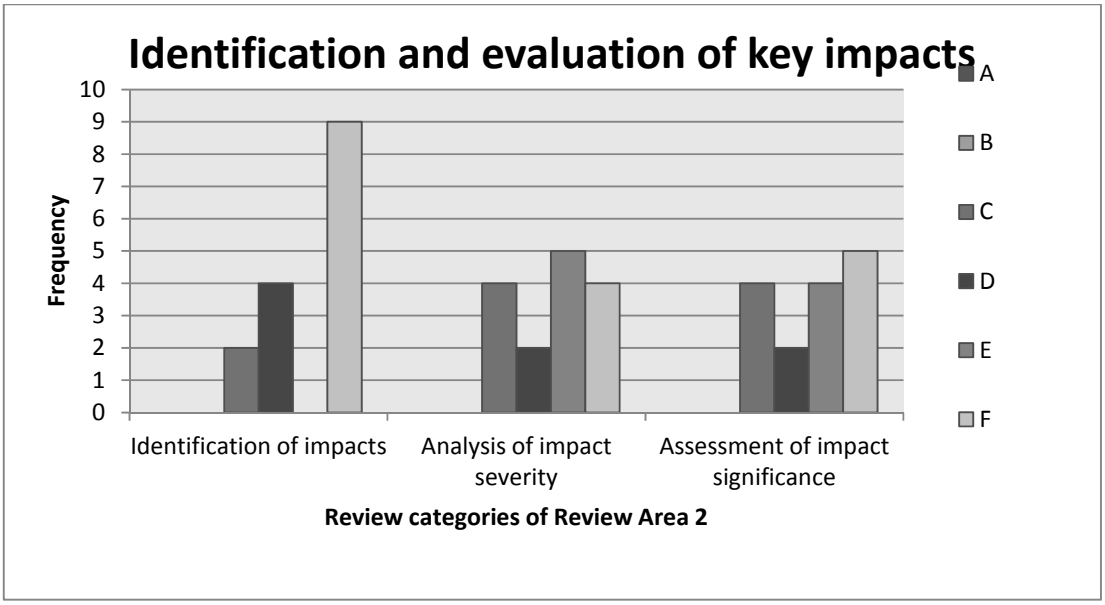

Figure 4.3: Results of the Review categories of Review Area 2

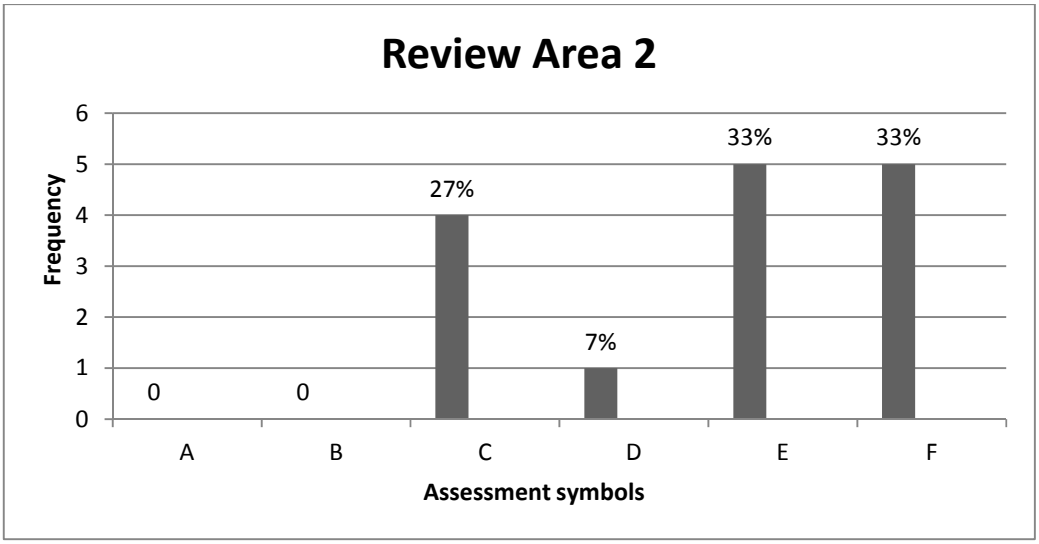

Figure 4.4: Results of Review Area 2

Review category 3.1 was the most poorly (2 (13%) of the reports reviewed were of satisfactory quality and 9 (60%) were graded 'F') attempted of the three Review categories of Review Area 2 (Figure 4.3). All the reports graded 'F' under identification of impacts were the PBs. Impacts were poorly documented in these reports since no scoping was undertaken to identify all the possible impacts of the projects. The manner in which the impacts were identified was not well described nor the methods used.

The impacts arising from non-standard operations were hardly attempted in most of the reports reviewed. The impacts were also not identified with respect to stages of the development as specified in the EIA guidelines. Identification of the impacts in pre- and post-construction stages of the projects was missing from the reports. The focus was just on the construction and operation stage of the projects. This resulted in consultants leaving out significant impacts of the projects. As argued by Glasson *et al* (2005) EIA should be a means to good environmental management over the life of a project not at certain stages of the project.

This implies that the consulting teams were mostly concerned with the consequences of putting up the projects rather than with the consequences of the project once put up. This code of practice undermines the very concept of environmental sustainability for which EIA is earmarked because there is no justification whatsoever to assume that a project would have no impacts in the post-construction phase since there is a reaction to every action (Mhango, 2005).

Similarly, supporting data and scientific or analytical methods were hardly used in identification of impacts. The identification of impacts relied heavily on experts' judgement, checklists and literature review of similar nature. As Mhango (2005) argues, reliance on literature reviews of similar projects undermines the effectiveness of impacts analysis because even similar projects are bound to have differences when implemented in different environments under different circumstances.

Socio-economic and cumulative impacts were also not so well attempted in most reports. Poor attempts in identifying socio-economic impacts can be attributed to limited public participation (only 5 (40%) of the reports performed satisfactorily with regard to public involvement). Cumulative impacts were satisfactorily identified in only 6 (40%) of the reports, with 5 (33%) of these reports getting a score of 'C' (Appendix A, sub-category 1.4.3). Consideration of cumulative impacts is as important as that of direct and indirect impacts. As Shrimpton and Storey (2000) argue, assessment of impacts of individual projects is important but assessment of single actions may miss the bigger picture of impacts.

Impacts are analysed as the deviation from baseline conditions. Therefore poor baseline descriptions hinder effective analysis of impacts. The reports revealed that some consultants fail to analyse impacts as deviations from baseline conditions. Even where detailed description of baseline conditions was given the prediction of the impact severity was poorly done. Table 4.1 and Figure 4.3 show only 27% of the EIA reports satisfactorily attempted the prediction of impact severity. The determination of the significance of environmental impacts has been identified as the most critical element of EIA (Sadler, 1996; Wood, 2008). The assessment of impact significance was also the most poorly performed of Review Area 2 with only 27% of the EIA reports being rated satisfactory (Table 4.1). All of the reports that made the 27% were graded C (Table 4.1 and Figure 4.3), meaning they were *just* satisfactory.

60% (4 were graded D and 5 graded E) of the reports reviewed did not document the magnitude, severity or significance of the identified impacts. This not only makes the authenticity of the impacts, in so far as whether they are really likely to occur impossibly difficult, but also hampers the assessment of the effectiveness of the mitigation measures and makes it difficult to know how to prioritise the identified impacts (Mhango, 2005).

4.2.3 Review Area 3 – Alternatives and mitigation of impacts

Consideration of alternatives and identification and description of effective mitigation measures are among the fundamental requirements underpinning environmental impact assessment and should therefore be subjected to critical review. A discussion of alternatives ensures that the developer has considered both other approaches to the projects and the means of preventing environmental damage (Pretorius, 2006). The examination of the alternative (Review category 3.1) for the projects was the most poorly done of Review Area 3, with only 3 (20%) of the EIA reports being well attempted (Table 4.1 and Figure 4.5). From these only 1 EIA report received a grade B and the rest grade C. The report that received a grade B was actually one of the two EISs with the other one receiving a grade C. This means that nine (60%) of the EIA reports that failed to satisfy the requirements for consideration of alternatives were actually PBs. These findings further indicate that the adequacy of the PBs in as far as providing the decision-makers with necessary information, to make informed decision with regard to the licensing of the project is highly questionable and so is the ability of EIA to be used a tool to safeguard the environment in Lesotho.

6 (40%) of the 15 EIA reports reviewed did not consider any alternatives at all while 4 (27%) (Figure 4.5) just mentioned alternatives explored in passing in 3-4 lines, and without any justification to the chosen one. The alternatives explored in these EIA reports were just the sites alternatives yet the Environmental Act No. 10 of 2008 (Lesotho Government, 2008) stipulates that the main alternatives to the technology, method and processes that will be used in the implementation of the project and the reasons for rejecting them should be discussed. The main weakness of Review category 3.1 resulted from the limited number of alternatives proposed and assessed and the complete omission of assessment of a no-action alternative in all the EIA reports reviewed.

The main reason for the limited number of alternatives proposed is that EIA exercises are undertaken rather late in the project planning and design feasibility stages. As a consequence the findings are not always able to bring about consideration of alternative site layouts, location, technology and/or effective mitigation measures. This is a common weakness in developing

countries (Mhango, 2005; Wood, 2003). EIA reports are too often submitted after the project has been defined and the site acquired. This makes EIA a mere damage limitation exercise.

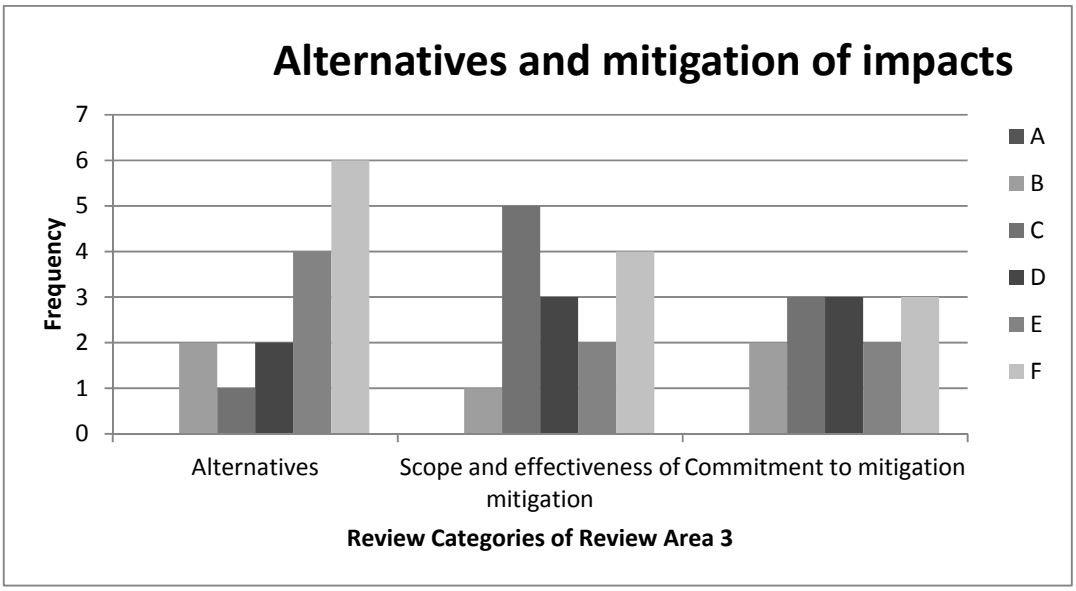

Figure 4.5: Results of the Review categories of Review Area 3

It was discouraging to establish that the requirement to evaluate the no-action alternative was grossly ignored in most of the report despite the emphasis in the EIA guidelines that it must be examined. Thus there was no comparison whatsoever of the pros and cons of not going ahead with the project to that of undertaking the project. This suggests that the analyses are often undertaken to justify a decision that has already been taken to commission a project, rather than to propose and adopt the most feasible and sensible course of action. However, as Diab *et al* (1999) argues, how does one justify a no-development alternative when there are urgent and basic human needs to be met?

In Lesotho, EIAs are predominantly project driven. A project is conceived, planned and designed and then an EIA is undertaken. This means that certain alternative options such as choice of site, location and type of technology and design to be used are a done deal by the time an environmental consultant is hired to undertake an EIA study. As emphasised by Lee and George (2000) the timing of a submission of the report is an area of concern in developing countries. Submitting inadequate reports towards the end of the project cycle when no options are presented

reduces the EIA to a mere formality and fails to promote its use as a tool that can facilitate sustainable development.

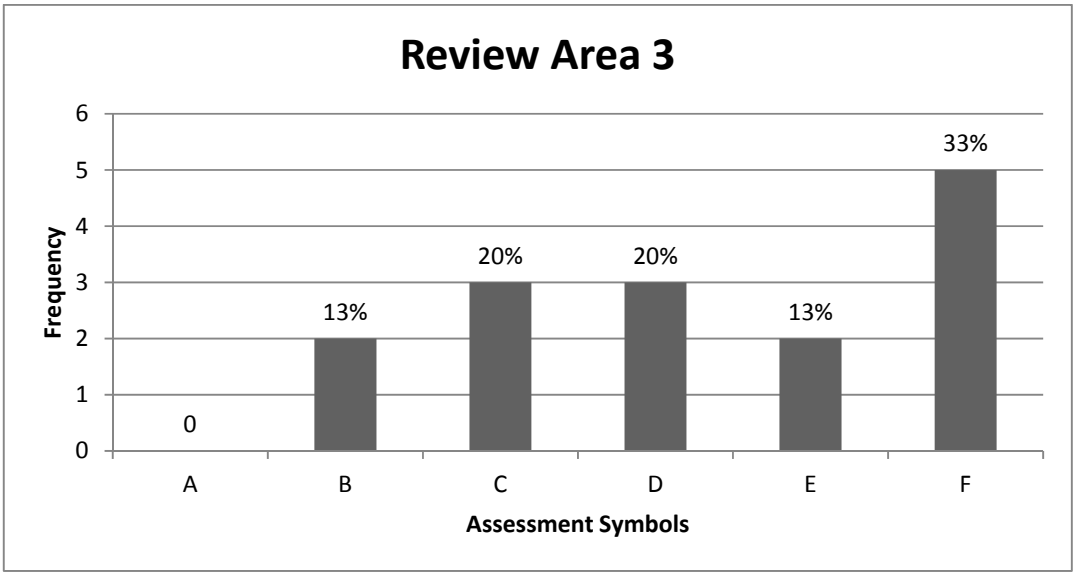

Figure 4.6: Results of Review Area 3

Review category 3.2 and 3.3 were also very poorly attempted (Table 4.1 and Figure 4.5). Figure 4.6 shows that 33% of the reports were rated as satisfactory in Review Area 3. Only 6 (40%) of the EIA reports were satisfactorily attempted Review Category 3.2. Of the six reports, the grade C was assigned to five of them, indicating just satisfactory level of performance and hence a greater room for improvements. The non-specific mitigation measures that lacked the strong commitment of the developer to implement the measures are the reason for poor performance of Review categories 3.2 and 3.3. Mitigation measures proposed in some of the reports do not give any indication of their potential effectiveness in reducing the significant impacts hence they are of little use to decision-makers. Mitigation of predicted impacts is a key component of EIA (Wood, 2003). Therefore, to be of any use to decision-makers, mitigation measures must be clearly defined and then an indication of the effectiveness of these measures must be given.

4 (27%) (Figure 4.5 Review category 3.2)) of the reports did not document any public consultation and the subsequent results regarding public participation, yet it is the key to ensuring that the EIA addresses issues of relevance to local communities who are victims of any change a development project may bring about. Most of the reports only mentioned that the

public was consulted and that they participated, without specifying how they participated. Astonishingly, almost all of the EIAs did not document possible unmitigated impacts, implying that the proposed mitigation measures would address all consequences of the projects. This is impractical given that EIAs are, to a large extend characterised with uncertainties (Tennøy, Kværner & Gjerstad, 2006).

Review category 3.2 was also poorly performed. Commitment to mitigation was satisfactorily indicated in 33% of the reports (Figure 4.5). This could be because prior to the coming into effect of EA No. 10 of 2008, EIA follow-ups were carried out voluntarily since the EA No. 15 of 2001 was not operational (Ts'ehlo, 2003). Hence some consultants just suggested mitigation measures without specifying how the measures are to be carried out. However, it is expected that EIA reports that will be prepared after the EA No. 10 of 2008 coming into force, will show huge improvements where mitigation measures are concerned. This is because, as per provisions of EA No. 10 of 2008 (Lesotho Government, 2008), project proponents are required to include a comprehensive mitigation plan which shall include:

a) A full description of the mitigation measures that will be implemented in order to prevent, reduce or otherwise manage environmental effects of the project and
b) how the measures will be implemented.

4.2.4 Review Area 4 – Communication of results

The guidelines about the contents of the EIA report do not indicate number of chapters and format of the report. As a result, the layout and presentation of the report depends upon the approach and taste of the consultants. However, it is critical that the findings of the EIA exercise are successfully communicated to stakeholders and decision-makers. The results for Review Area 4 are presented in Figure 4.7, and the average data for Review Area 4 is presented in Figure 4.8. Review categories 4.2, 4.3 and 4.4 were well attempted in Review Area 4 (Table 4.1 and Figure 4.7). However, most of the reports were only just satisfactory, and none were well performed, indicating that there is room for improvement.

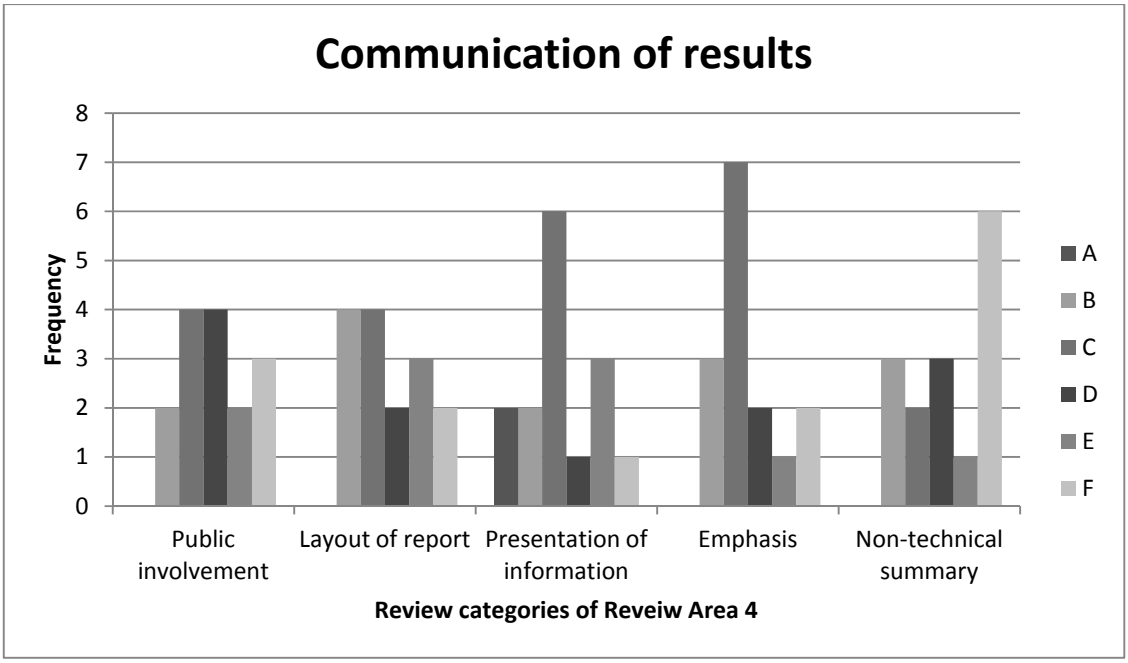

Figure 4.7: Results of the Review categories of Review Area 4

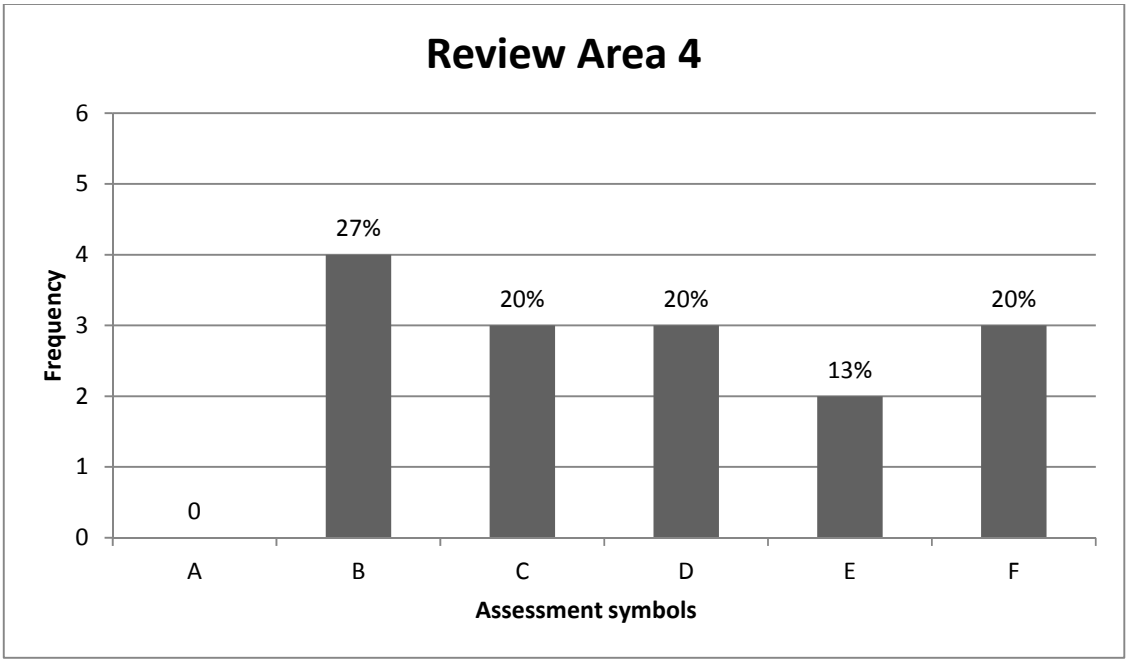

Figure 4.8: Results of Review Area 4

Public participation is a continuous two way process which involves promoting full public understanding of the processes and mechanisms through which environmental problems and needs are investigated and solved by responsible agencies by:

- ✓ Keeping the public fully informed about the status and progress of studies and implications of project, plan, program or policy formulation and evaluation activities; and
- ✓ actively soliciting from all concerned citizens their opinions and perceptions of objectives, needs and preferences regarding use of resources and alternative development or management strategies and any other information and assistance relative to the decision (Canter, 1996).

Public participation being part and parcel of EIA has been made a mandatory requirement in Lesotho. However the nature and extent of public participation is still poorly handled. Public participation and consultation was poorly carried out, with 60% (9 of 15 were graded D-F) of the EIA reports failing to satisfy any of the requirements of public participation (Figure 4.7). This means public views were sought and taken into consideration in only 40% of the EIA studies. This shows that although public participation is enshrined in legislation and in the guidelines of EIA, it is neglected or starts at a later stage of project development rather than early. It is often only conducted to meet legislation requirements rather than to consider communities' views in predicting and mitigating impacts. When community participation and consultation is not incorporated in project development, disputes are bound to arise and thereby causing delay with project implementation.

The layout of 53% (Figure 4.7) of the reports was of satisfactory level. Two of the reports in this Review category did not include any introduction and even the external sources used in the reports were not acknowledged within the reports nor referenced. 33% of the reports in Review category 4.5 were rated as satisfactory. Like Review category 4.2, this Review category was poorly done in Review Area 4. The non-technical summary was not included in six of the reports reviewed. This had a great influence on the overall quality of Review Area 4, with only 47% of the reports being of satisfactory level.

4.3 Overall assessment of the EIA reports reviewed

A summary of the results of all Review Areas is presented in Table 4.2 and Figure 4.9.

Table 4.2: Summary of the results obtained from the application of the review package

		Well performed	Satisfactory, minor omissions	Satisfactory, omissions and inadequacies	Unsatisfactory	Very unsatisfactory, poorly done	Very unsatisfactory, tasks not done	% s Satisfactory (A-C)
SUMMARY OF ALL REVIEW AREAS		**A**	**B**	**C**	**D**	**E**	**F**	
1	Description of the development, the local environment and the baseline conditions	0	2	5	5	2	1	47
2	Identification and evaluation of key impacts	0	0	4	1	5	5	27
3	Alternatives and mitigation	0	2	3	3	2	5	33
4	Communication of results	0	4	3	3	2	3	47
Final Grade Review for EIA Report		0	1	4	4	1	5	33

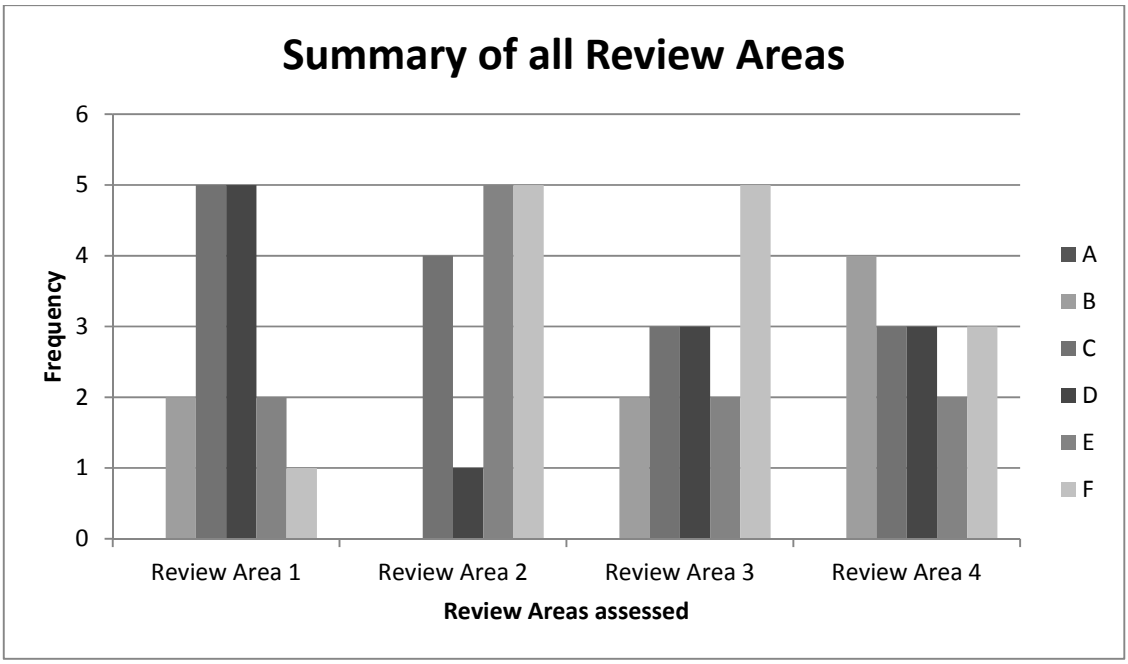

Figure 4.9: Summary results of all Review Areas

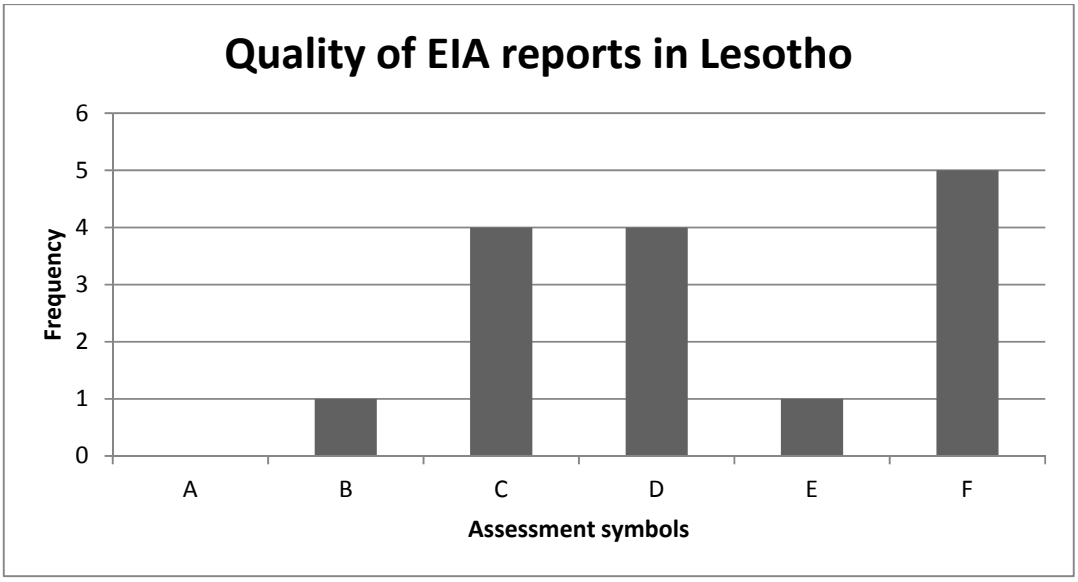

Figure 4.10: Results of quality of EIA reports in Lesotho

In Table 4.2 it is clear that all the four Review Areas were poorly attempted, with Review Area 2 the most poorly rated with only 27% of the reports satisfactorily attempted, followed by Review Area 3 with 33% of the reports assigned grade B-C. A review of the EIA reports revealed that the identification and analysis of impacts during assessments are not done satisfactorily. Quite often, impacts are not adequately qualified in terms of significance and there is no formal consideration of project alternatives. Without the prediction and rationally justifying the significance of an impact one cannot, with certainty, establish which consequences of a project are critical and warrant a high degree of priority. Public concerns are hardly incorporated in the final reports. This has therefore not made it possible for assessments to focus on issues, and interventions on significant impacts (ECA, 2005). The Review Area 1 and 4 were also not well performed.

The overall quality of the EIA reports reviewed is indicated in Figure 4.10. 5 (33%) of the reports were rated as very unsatisfactory. This shows that the adequacy of the PBs in terms of providing all the necessary information critical to authorities making informed decisions is very questionable. In general the quality of EIA reports produced by consultants is a major concern in Lesotho. This mainly arises from the increased number of individuals carrying out EIAs which brought with it inexperienced practitioners whose quality of work leaves a lot to be desired.

These findings are similar to Mokhehle and Diab's (2001) findings. A review of EIAs conducted for 17 major development projects from 1980 to 1999 by Mokhehle & Diab (2001) revealed that only seven projects had undergone any form of environmental assessment, while systematic EIA was conducted on only two. Formal scoping was seldom followed, and public participation was lacking. Evaluation, mitigation measures and monitoring requirements were also inadequately addressed by most of the EIAs. This observation supports the conclusions by George (2000) and Wood 2003) to the effect that developing countries are weak particularly in impact prediction. Even with the establishment of the EA No. 15 of 2001 and the provision of the EIA guidelines, there is no improvement in the quality of the EIA reports. This shows that compliance with the law is a matter of concern in Lesotho.

4.4 Analysis of questionnaires

Analysis of the questionnaire responses and interview notes has highlighted a variety of issues that will be discussed in this section.

4.3.1 General background of Questionnaire respondents

A total of 6 questionnaires were administered to EIA practitioners who work in Lesotho. Of the six respondents, 3 (50%) have 0-3 years of experience working as consultants, 1 (16.7%) each have 4-6 years, 7-9 years and 10+ respectively. 2 (33.3%) have been involved with more than ten EIAs over the last 3 years while the rest of the respondents (66.7%) have only been involved with 3 EIAs. More respondents have less than three years of experience. This could be due to an increase in consultancy work as more pressure is put on countries to ensure that development projects are carried out in harmony with the environment. Similarly a higher percentage (67%) of respondents involved with up to 3 EIAs could be due to an increased number of consultants readily available to carry out impact assessment studies. Thus, instead of having to use certain consultants, project proponents have a wide range to choose from.

83% of the respondents are involved in all stages of the EIA process. Only one respondent is involved in baseline studies, impact prediction and mitigation proposals. The respondents are involved in a wide range of most environmental components when undertaking EIA, with the most common ones highlighted as: socio-economic, water and wastes management. However

this does not correspond with the evaluation results. Of the 15 EIA reports evaluated the socio-economic component was poorly handled in 10 of the reports.

Regarding the sector in which the consultants have experience in, the respondents appeared to have experience in different sectors: energy, housing, wastes, water. All the respondents were aware of the existence of the Environmental Act No. 10 of 2008 as the legislation governing EIA in Lesotho and the EIA guidelines of 2002. However only 2 (33.3%) knew when this Act was enacted. This is troubling since these consultants are supposed to prepare EIA reports according to the provisions of this Act and leaves one wondering about the quality of their work and their credibility as consultants.

4.3.2 Role of EIA in Lesotho

The main purpose of EIA according to the respondents is to reduce environmental impacts (Table 4.3), its being an instrument for sustainable development and for achieving development consent are also indicated as other important objectives.

Table 4.3: Respondents' opinion about the main purpose of EIA

EIA PURPOSE	**PERCENTAGE ***
Reducing environmental impacts	100
Instrument for sustainable development	66.7
Achieving development consent	50
Aid to decision making	33.3
Reducing future costs	16.7
Helping the developer	0

***Respondents have to choose three answers and rank them in order of importance.*

The fact that 50% of the respondents stated achieving development consent as a purpose of EIA shows that EIA, to some extent is simply being regarded as a 'tick box' exercise, completed only to achieve development consent and explains the poor performance of EIA reports on identification and evaluation of impacts. When the EIA process is purely used as a means of achieving planning consent and therefore focusing on the pre-decision stage, it is not being used

to its full potential. In theory, EIA is an iterative process, which benefits greatly from feedback as it enables lessons to be learnt and environmental impacts to be controlled (Morrison-Saunders & Arts, 2004).

Literature highlight the main purpose of EIA as an aid to decision-making (Glasson *et al*, 2005; UNEP, 2002) but according to the respondents it is not (only 33.3% think so). The EIA process is said to be effective if it achieves its purposes (Sadler, 1996). A higher percentage (66.7%) of respondents feels that EIA is not effective in helping decision makers and developers alike. These are the respondents who indicated competency of relevant authorities as the main weakness of the current EIA practice in Lesotho (see section 4.3.3). Judging from the respondents' opinions and the research findings on the quality of EIA report, a lot of work still needs to be done before the EIA can be effectively implemented in Lesotho.

4.3.3 Strengths and weakness of EIA in Lesotho

The strengths and weaknesses of the current EIA are a good indication of where EIA could be extended in order to enhance its role and improve effectiveness. Only 1 (16.7%) of the respondents indicated the willingness of the environmental practitioners to abide by the provisions of the law and good basis in legislation as the main strengths of the current EIA practice in Lesotho. The rest of the respondents did not attempt the question. The reason for this could be that they do not see any strength with the current EIA practice.

The main shortcomings with the current EIA practice are identified as: inadequate consideration of alternatives, lack of political will, lack of monitoring after decision-making, poor coordination with planning regulations, competency of relevant authorities and limited influence in decision making (Table 4.4). The reason for the lack of political will, being highlighted as the main weakness is that sustainable development issues are not at the top of the development agenda which result from lack of understanding of their importance (Doberstein, 2003).

Table 4.4: Shortcomings of EIA in Lesotho

Shortcomings	**PERCENTAGE ***
Inadequate consideration of alternatives	100
Lack of monitoring after decision-making	100
Lack of political will	100
Poor coordination with planning regulations	83.3
Competency of relevant authorities	66.7
Limited influence on decision-making	66.7
Lack of baseline data	33.3
Lack of environmental awareness	16.7
Insufficient public involvement	0

***Respondents have to choose four answers and rank them in order of importance.*

This explains the late enactment of Environmental Act (EA) No. 10 of 2008 (Lesotho Government, 2008) which repealed EA No. 15 of 2001 (Lesotho Government, 2001). EA No.15 of 2001 was passed in parliament in 2001 but was never gazetted until it was repealed by the EA of 2008, which was gazetted on June 16, 2009. To a high extent (66.7%), EIA does not significantly influence decision-making but acts largely as a mitigation exercise for reasons such as: many projects such as roads and building structures are considered to be of national, political or strategic importance, or even better, crucial for poverty reduction and industrialization.

Doberstein (2003) cites this in part to the origins of an EIA as a development planning concept. His argument is that as an offshoot of western 'rational planning' EIA has often been uncritically imported into developing countries without significant efforts to address cultural, political and administrative differences. A good example for this is the establishment of Pioneer Mall which houses Pick n Pay in Lesotho. The mall was constructed without any EIA study being undertaken though it was built next to a Central Prison and a primary school. Only and environmental management plan was requested. The disturbance of the ground resulted in one classroom collapsing during the school calendar. The school had to be relocated to other premises. Had an impact assessment been done, this could have been avoided.

Although there is much literature discussing EIA follow-up, there is no evidence to suggest that it is a major concern among practitioners. Ts'ehlo's (2003) research on experience of EIA

follow-up in Lesotho established that no follow-ups are conducted despite being provided for in legislation. Lack of baseline data (33.3%) was also stated as a weakness. The problem with baseline data in Lesotho is that, the necessary data is there but it is highly inaccessible. This information is kept at DoE and according to the stakeholders interviewed it is such a hassle to access this information. It is interesting to note that none of the respondents stated insufficient public involvement as a weakness and only one (16.7%) respondent stated lack of environmental awareness as a weakness even though the review of the EIA reports revealed public involvement in EIA as another area that is poorly handled by practitioners undertaking EIA studies.

Though provision is made for the public to review the EIA reports, this never happens. The main reasons cited for this are lack of environmental awareness and lack of interests on environmental concerns as the public is only concerned with job creation opportunities and not with the administrative process that goes with job creation. When development projects are located in rural areas, even if the reports were made available, to participate under the current requirements, individuals must have understanding of what EIA is; timely knowledge of the comment and review periods; access to the location(s) where the report is lodged, financial means to pay for the fee imposed and the required written language abilities to provide written comment. This is likely to exclude more people.

When community participation and consultation is not incorporated in project development, disputes are bound to arise and thereby causing delay with project implementation. A good example in this regard is the diamond mining at Kolo-Ha-Petlane in the Mafeteng district. It appeared community members were never consulted about the mining project; they only got to know about the project when mining activities were already underway. As if that was not enough, the bodies of their loved ones were exhumed without their permission and to make matters worse the whole process took place at night. This caused a huge dispute as community members wanted to know what was happening. Clearly this shows that the concerned public was not consulted prior to commencement of the mining activities. Some community members were quoted as saying:

> *"There were no proper negotiations and everything is still being imposed on us, we have no choice. They think the dead can not see and speak. They*

brought security with them and there was nothing we could do, we were helpless" (Matope, 2009).

Apparently the exhumation team was escorted by the police and army personnel to deal with the community in case they tried to oppose the exhumation. When the concerned public tried to protest against the development they were told that they have no choice but to follow instructions. This was reported by Matope T. (2009:8). Two PBs were submitted to DoE in relation to this development project. The two were among the EIA reports with poor identification and prediction of impacts and inadequate public participation. The fact that the project went ahead despite the poor PB and also the fact that the mining project was approved based on a PB and not a full EIA shows that in Lesotho the decision-making process is not influenced by EIA reports. This also confirms that economic concerns are given priority over environmental concerns.

4.3.4 Improving the EIA practice in Lesotho

All the respondents were in favour of the suggested solutions to improving the EIA practice in Lesotho. In addition, the respondents suggested the following as other means through which the EIA practice in Lesotho can be improved and environmental safeguarding ensured:

- Environmental issues should be prioritized by the government
- EIA regulations should be developed
- NGOs should be actively involved in environmental issues
- Certification schemes should be introduced

Introducing certification schemes for consultants will surely improve the quality of EIA reports as only the consultants with the right qualification and years of experience will be hired by the developers.

4.5 Key findings related to Quality of Selected EIA Reports

In summary, the following key issues can be gleaned from previous discussion on critical review of selected EIA reports:

- ✓ Provision of inadequate information regarding the project
- ✓ Insufficient competency of EIA practitioners
- ✓ Insufficient time for conducting EIA
- ✓ Inaccessibility of baseline data
- ✓ No use of quantitative impact assessment methods
- ✓ Poor public participation
- ✓ Inadequate consideration of alternatives
- ✓ No sound basis of proposed mitigation measures
- ✓ Incompleteness of the reports due to unnecessary omissions (i.e. not including non-technical summary)

4.6 Conclusion

The investigation and findings have highlighted important issues that need urgent attention if the EIA system in Lesotho is to take its rightful position as an effective tool in environmental management. Resolving these issues is of paramount importance to improving the EIA practice in the country but unless there is political willingness, bolstered by a thorough understanding of the relationship between EIA and environmental sustainability assurance there is little hope for change in the way EIA is treated.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter aims to summarise the findings of the study, and to provide recommendations made from the research for EIA follow-up practice in Lesotho.

5.2 Summary

The main aim of this research was to critically review the quality of the EIA reports in Lesotho to highlight the strengths and weaknesses so as to suggest ways of improving the whole EIA process. This study revealed that the EIA reports in Lesotho are generally of poor quality as a result of the unsatisfactory undertaking of most of the EIA components with respect to compliance with their minimum regulatory requirements. This research has also revealed that Lesotho have a good legal base. The only problem with the Act is the fee that is charged for reviewing the EIA reports. It is the author's opinion that the EA No. 10 of 2008 has to be revised and the government has to do away with imposing a fee to review the EIA reports.

In summary, the review of 15 EIA reports revealed the following key weaknesses in terms of the quality of EIA reports in Lesotho.

- ✓ Provision of inadequate information regarding the project
- ✓ Insufficient competency of EIA practitioners
- ✓ Insufficient time for conducting EIA
- ✓ Inaccessibility of baseline data
- ✓ No use of quantitative impact assessment methods
- ✓ Poor public participation
- ✓ Inadequate consideration of alternatives
- ✓ No sound basis of proposed mitigation measures

Analysis of the questionnaire responses also revealed that just like other developing countries (see Kakonge, 2006; Mhongo, 2005, Nadeem & Hameed, 2006; Wood, 2003) human capacity

and political unwillingness to prioritise environmental concerns in planning still remain the biggest challenges in the effective institutionalization and application of EIA in Lesotho.

5.3 Conclusion

Many challenges remain in relation to effective application of EIA and the extent to which EIA findings influence development decisions in Lesotho. DoE has the potential to play a significant role in guiding the nation towards environmental sustainability, but human capacity constraints hinder its effectiveness. Just like other developing countries (see Kakonge, 2006; Mhongo, 2005, Nadeem & Hameed, 2006; Wood, 2003) human capacity and political unwillingness to prioritise environmental concerns in planning still remain the biggest challenges in the effective institutionalization and application of EIA in Lesotho. The findings of this research have implications not only for the quality of EIA reports but also for the effectiveness of the entire EIA process. And, as the quality of a product reflects the effectiveness of the process through which it is produced, the EIA process can principally be improved by addressing the above-noted weaknesses, particularly by improving the factors that are inducing them. In light of these shortcomings, the following recommendations are made.

5.4 Recommendations

Based on the findings of the research, it is recommended that DoE should:

- Develop best practice guidelines for public participation to assist consultants with strategies for effective public participation at all levels.
- Develop capacity building programmes based on clearly identified needs, taking into account experience and lessons learnt. The capacity building programmes should be aimed for the authority, the proponents and the EIA practitioners and the general public.
- Establish a certification/registration system for EIA practitioners.
- Develop review criteria applicable to Lesotho
- Establish a code of conduct for EIA practitioners.
- Establish an independent review body.
- Develop sectoral impact assessment guidelines.

- Promote involvement of other Ministries in environmental matters. This will facilitate prioritisation of environmental concerns.
- Develop a mechanism to ensure monitoring of project impacts to identify and rectify impacts that were not picked up by the EIA.

REFERENCES

Annandale, D. (2001). Developing-country EIA: Developing and evaluating environmental impact assessment systems for small developing countries, Impact Assessment and Project Appraisal 19(3):187-193.

Appiah-Opoku, S. (2001). Environmental impact assessment in developing countries: the case of Ghana, Environmental Impact Assessment Review 21: 59-71.

Bailey, J. (1997). Environmental Impact Assessment and Management: An under explored relationship. Environmental Management 21(3): 317-327.

Baker A. & Wood, C. (1999). An Evaluation of EIA System Performance in Eight EU Countries. Environmental Impact Assessment Review 19: 387-404.

Bisset, R. (2000). Methods of consultation and public participation, in N. Lee & C. George (eds.) Environemtal Assessment in Developing and Transitional Countries, John Wiley & Sons: Chichester.

Boyle, J. (1998). Cultural influences on implementing environmental impact assessment: insights from Thailand, Indonesia and Malaysia, Environmental Impact Assessment Review, 18:95-116.

Canter, L.W. (1996). Environmental Impact Assessment, MaGraw-Hill: New York.

Cashmore, M., Gwilliam, R., Morgan, R., Cobb, D. & Bond, A. (2004). The interminable issue of effectiveness: substantive purposes, outcomes and research challenges in the advancement of environmental impact assessment theory. Impact Assessment and Project Appraisal, 22(4):295-310.

DEAT. (Department of Environmental Affairs and Tourism) 2004. Environmental Impact Reporting, Integrated Environmental Management, Information Series 15, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

Diab, R.D., Ellery, W.N., Tooley, J., McKenzie, A. & Barnes, K. (1999). The no development option versus the development option in an underdeveloped area, Impact Assessment and Project Appraisal, 17 (3):243-252.

Doberstein, B. (2003). Environmental capacity-building in a transition economy: the emergence of EIA capacity in Viet Nam, Impact Assessment and Project Appraisal, 21(1):25-42.

Duthie, A.G. (2001). A review of provincial environmental impact assessment administrative capacity in South Africa, Impact Assessment and Project Appraisal, 19(3):215-222.

EA (Environmental Act). See Lesotho Government, 2001, 2008

EC (European Commision) 2001. Guidabce on EIA, EIS review, 2001

ECA (Economic Commission for Africa). (2005). Review of the Application of EIA in Selected African Countries, Addis Ababa.

Emmelin, L. (1998). Evaluating environmental impact assessment systems – part 1: Theoretical and methodological considerations. Scandinavian Housing and Planning Research 15:129-148.

Furia, L.D & Wallace-Jones, J. (2000). The effectiveness of provisions and quality of practices concerning public participation in EIA in Italy, Environmental Impact Assessment Review, 20:457-479.

George, C. (2000). Comparative Review of Environmetal Assessment Procedures and practice, in N. Lee & C. George (eds.) Environemtal Assessment in Developing and Transitional Countries, John Wiley & Sons: Chichester..

Gilpin, A. (1995). Environmental Impact Assessment: Cutting edge for the twenty-first century, Cambrigde University Press: Cambridge.

Glasson, J., Therivel, R. & Chadwick, A. (2005). Introduction to Environmental Impact Assessment, Routledge: Oxon.

Hacking, T. & Guthrie, P. (2008). A Framework for clarifying the meaning of Triple Bottom-Line, Integrated, and Sustainability Assessment. Environmental Impact ASSESSMENT Review 28: 73-89.

Harmer, C. (2005). Is Improving the Effectiveness of Environmental Impact Assessment in the UK Dependent on the Use of Follow-up? Views of Environmental Consultants. Available on http://www.uea.ac.uk/env/all/teaching/eiaams/pdf.dissertations/2005/HarmerClare.pdf (Accessed on 21/09/08).

Hughes, R. (1998). Environmental Impact Assessment and Stakeholder Involvement, International Institute for Environment and Development (IIED), Environmental Planning Issue No.11 1998.

Hutton, J., Telford, S. & Krugmann, H. (2003). Country report : Mozambique, in South African Institute for Environmental Assessment. Environmental Impact Assessment in southern Africa, SAIEA: Windhoek.

IAIA (International Association of Impact Assessment) & IEA (1999). Principles of Environmental Impact Assessment Best Practice. Available on www.iaia.org/modx/assets/files/Principles of IA_web.pdf (Accessed on 17/09/08).

IEMA (Institute of Environmental Management and Assessment). (2004). Guidelines for Environmental Impact Assessment, Lincoln.

IUCN (International Union for Conservation of Nature) (2007). African Experts Workshop on Effectiveness of Environmental Impact Assessment Systems, held in the United Nations Conference Centre in Addis-Ababa, Ethiopia from 12-13th April 2007.

Jalava K., Pasanen S., Saalasti M. & Kuitunen M. (2010). Quality of Environmental Impact Assessment: Finnish EISs and the opinions of EIA professionals. Impact Assessment and Project Appraisal 28(1):15-27

Kabir S.M.Z., Momtaz S., & Gladstone W. (2008). The Quality of Environmental Impact Statement (EIS) in Bangladesh, A paper presented at IAIA Conference on the role of Impact Assessment in Transitioning to the Green Economy on 6-11 April 2010, Geneva.

Kakonge, J.O. (1997). EIA in Lesotho: Prospects and challenges, Environmental Impact Assessment Review, 17:109-121.

Kakonge, J.O. (2006). Environmental impact assessment in Sub-Saharan Africa: The Gambian experience, Impact Assessment and Project Appraisal, 24(1):57-64

Kruger, E. & Chapman, O.A. (2005). Quality aspects of Environmental Impact Assessment Reports in the Free State Province, South Africa. South African Geographical Journal, 87(1):52-57.

Lawrence, D.P. (2003). Environmental Impact Assessment: Practical Solutions to Recurrent Problems, John Wiley & Sons: New Jersey.

Lee, N. (2000). Environmental assessment in its developmental and regulatory context, in N. Lee & C. George (eds.) Environemtal Assessment in Developing and Transitional Countries, John Wiley & Sons: Chichester

Lee, N., Colley, R., Bonde J., & Simpson J. (1999). Reviewing the Quality of Environmental Statements and Environmental Appraisals. Occassional Paper number 55. Menchester; Department of Planning and Landscape. University of Menchester.

Lee, N. & George, C. (2000). Environmental Assessment in Developing and Transitional Countries, John Wiley & Sons Ltd: Chichester.

Le Gouais, P.J. (2003). Capacity building for environmental impact assessment: A review of training practices in developing countries. Available on http://www.uea.ac.uk/env/all/teaching/eiaams/pdf_dissertations/2003/LeGouais.pdf (Accessed on 15/09/08).

Lesotho Government (no date). The Environmental Impact Assessment Manual.

Lesotho Government (1989). The National Environment Action Plan, Government Printers: Maseru.

Lesotho Government (1993). The Constitution of Lesotho, Government Printers: Maseru.

Lesotho Government (1994). Lesotho National Agenda 21 Action Plan, Government Printers: Maseru.

Lesotho Government (1998). National Environment Policy. Government Printers: Maseru.

Lesotho Government (2001). Environmental Act No.15 of 2001, Governement Printers: Maseru.

Lesotho Government (2002). Draft Guidelines for Environmental Impact Assessment, Ministry of Tourism, Environment & Culture, Lesotho Environment Authority, Maseru Lesotho.

Lesotho Government (2008). Environment Act No. 10 of 2008, Government Printers: Maseru.

Lesotho Government (2009). Guidelines for Environmental Impact Assessment, Ministry of Tourism, Environment & Culture, Lesotho Environment Authority, Maseru Lesotho.

Li, J.C. (2008). Environmental impact assessment in developing countries: An opportunity for greater environmental security? Working Paper No. 4, Foundation for Environmental Security and Sustainability. Available on http://www.fess.global.org/working Papers/EIA.pdf (Accessed on 19/08/08).

Lohani, B.N., Evans, J.W., Ludwig, H., Everitt, R.R., Carpenter, R.A. and Tu, S.L. (1997). Environmental Impact Assessment for Developing Countries in Asia, Manila, Asian Development Bank.

Matope, T. 2009. Your dilapidated house is sitting on diamonds. *Public Eye*:8, Oct. 10-16

Memon, P.A. (2000). Devolution of environmental regulation: environmental impact assessment in Malaysia, Impact Assessment and Project Appraisal, 18(4):283-293.

Mhango, S. 2005. The quality of Environmental Impact Assessment in Malawi: A retrospective analysis. Development Southern Africa, 22(3) 383-408.

Modak, P. & Biswas, A.K. (1999). Conducting Environmental Impact Assessment in Developing Countries. UN university Press: Tokyo.

Mokhehle, L. & Diab, R. (2001). Evolution of environmental impact assessment in a small developing country: A review of Lesotho case studies from 1980 to 1999, Impact Assessment and Project Appraisal, 19(1):9-18.

Morrison-Saunders, A. & Arts, J. (2004). Assessing impact: Handbook of EIA & SEA Follow-up, Earthscan: London.

Motsamai, B., Keatimilwe, K. & Pomela, M. (2003). Country report: Lesotho, in South African Institute for Environmental Assessment. Environmental Impact Assessment in southern Africa, SAIEA: Windhoek.

Mwalyosie, R. & Hughes, R. (1998). The performance of EIA in Tanzania: an Assessment, International Institute for Environment and Development, London.

Nadeem, O. & Hameed, R. (2006). A Critical Review of the Adequacy of EIA Reports – Evidence from Pakistan. PWASET Vol. 17:200-205.

Peterson, K. (2010). Quality of environmental impact statements and variability of scrutiny by reviewers. Environmental Impact Assessment Review 30:169-176

Pinho, P., Maia, R. & Monterroso, A. (2006). The quality of Portuguese Environmental Impact Studies: the case of small hydropower projects. Environmental Impact Assessment Review 27:189-205.

Pretorius, H.M. (2006). The quality of environmental impact reports in the North-West province, South Africa. Dissertation submitted in fulfillment of the requirements for the degree of Master of Science in Geography and Environmental Studies at the North- West University, Potchefstroom.

Purnama, D. (2003). Reform of the EIA process in Indonesia: Improving the role of public involvement, Environmental Impact Assessment Review, 23(4):415-439.

Riffat R. & Khan D. (2006). A Review and Evaluation of the Environmental Impact Assessment Process in Pakistan. Journal of Applied Sciences in Environmental Sanitation, 1:17-29.

Sadler, B. (1996). Environmental Assessment in a changing world: Evaluating practice to improve performance. International study on the effectiveness of environmental assessment, Canadian Environmental Assessment Agency, Ottawa.

Sandham L.A., Moloto M.J. & Retief F.P. (2008). The quality of environmental impact reports for project with the potential of affecting wetlands in SA. Water SA Vol 34(2).

Sandham, L.A. & Pretorious, H.M. (2008). A review of EIA report quality in the North West Province of South Africa. EIA Review 28(4-5): 229-240.

Sandham, L.A., Siphugu, M.V. & Tshivhandekan, T.R. (2005). Aspects of Environmental Impact Assessment (EIA) Practice in the Limpopo Province – South Africa. AJEAM-RAGEE Vol. 10 p50-65.

Shrimpton, M. & Storey, K. (2000). Assessing and Managing Socio-economic effects: Improving the process of environmental impact assessment. Paper presented in the European Centre for Occupational Health, Safety and Environment (ECOHSE). Symposium Kaunus, Lithuania, Oct. 2000.

Simpson J. (2001). Developing a review package to assess the quality of EA reports of Local Authority structure and local plans in the UK. Environmental Impact Assessment Review 21:83-95

Spong, P-J & Walmsley, B. (2003). Country report: Malawi, in South African Institute for Environmental Assessment. Environmental Impact Assessment in southern Africa, SAIEA: Windhoek.

Steinemann, A. (2001). Improving alternatives for environmental impact assessment, Environmental Impact Assessment Review, 21:3-21.

Tennøy, A., Kværner, J. & Gjerstad, K.I. (2006). Uncertainty in environmental impact assessment predictions: The need for better communication and more transparency. Impact Assessment and Project Appraisal, 24(1):45-56

Ts'ehlo, M. (2003). Experience of EIA follow-up in Lesotho. Dissertation submitted in partial fulfillment of the requirements for the degree of Master of Science in the school of life & Environmental Sciences at the University of Natal, Durban.

UNEP (2002). UNEP EIA Training Resource Manual, UNEP, Geneva. Available on http://www.unep.ch/etu/publications/EIAMan_2edition_toc.htm (Accessed on 09/06/08).

Weaver, A., Chonguica, E., Rukato, H. & Tarr, P. (2003). Nepad and Environmental Assessment, AJEAM-RAGEE 7:1-13.

Wood, C. (1995). Environmental Impact Assessment: A Comparative Review, Prentice Hall: Harlow.

Wood, C. (2003). Environmental Impact Assessment in Developing Countries: An Overview. Available on http://www.environment-integration.org/Download/D123/Wood.pdf (Accessed on 10/04/08).

Wood, G. (2008). Threshold and criteria for evaluating and communicating impact significance in environmental statements: See no evil, hear no evil, speak no evil. Environmental Impact Assessment Review 28:22-38

Zubair, L. (2001). Challenges for environmental impact assessment in Sri Lanka, Environmental Impact Assessment Review, 21:469-478

APPENDIX A**:** RESULTS OF SUB-CATEGORY REVIEW

Table 1: Sub-category of review area 1 – Description of the development and baseline conditions

	Review Category	Review Sub-Category		Well performed	Satisfactory, minor omissions	Satisfactory, omissions and inadequacies	Unsatisfactory	Very unsatisfactory, poorly done	Very unsatisfactory, tasks not done	% s Satisfactory (A-C)
Review Area 1			**Description of the development**	**A**	**B**	**C**	**D**	**E**	**F**	
	1.1	**1.1.1**	Purpose and objectives of development	2	5	6	1	1	0	87
		1.1.2	Size/scale of development, nature and duration described	1	3	7	3	1	0	73
		1.1.3	Environmental Planning adequately described	1	3	6	3	1	1	67
		1.1.4	Important design features highlighted	1	4	3	4	2	1	60
		1.1.5	Adequate indication of physical appearance of completed development	1	2	4	2	3	3	47
		1.1.6	Nature and quantity of material used during different phases	1	2	5	4	1	2	53
		1.1.7	Number of workers involved during different phases	1	2	4	5	2	1	47
	1.2		**Site description**							
		1.2.1	Site Plan	1	3	4	3	4	0	53
		1.2.2	Description and demarcation of Land use areas	0	1	6	5	2	1	47
		1.2.3	Alternative plans, designs and sites adequately discussed	0	0	4	6	1	4	27
	1.3		**Residuals: types and quantities**							
		1.3.1	Estimated types and quantities of waste	0	0	9	4	1	1	60
		1.3.2	Proposed handling and disposal of wastes and residuals	1	2	8	2	1	1	73
	1.4		**Bounding of study**							
		1.4.1	Indication of area likely to be affected	1	2	6	3	1	2	53
		1.4.2	Broad definition of affected area	0	0	7	5	2	1	47
		1.4.3	Cumulative impacts included	0	1	5	6	2	1	40
	1.5		**Baseline conditions**							
		1.5.1	Important components of the affected environment	1	2	7	4	0	1	67
		1.5.2	Existing data sources searched	0	2	5	4	2	2	47
		1.5.3	Interaction and effect of the development activities on the	0	0	5	3	2	5	27

			environment							

Table 2: Sub-category of review area 2 – Identification, analysis and assessment of impacts

	Review Category	Review Sub-Category		Well performed	Satisfactory, minor omissions	Satisfactory, omissions and inadequacies	Unsatisfactory	Very unsatisfactory, poorly done	Very unsatisfactory, tasks not done	% s Satisfactory (A-C)
Review Area 2			**Identification of impacts**	**A**	**B**	**C**	**D**	**E**	**F**	
	2.1	**2.1.1**	All points identified in EIA terms of reference included*	0	1	1	0	0	0	
		2.1.2	Direct and indirect impacts identified and method given	0	1	5	5	3	1	40
		2.1.3	Environmentally sensitive areas addressed	0	1	3	1	4	6	27
		2.1.4	Impacts arising from non-standard operating conditions	0	2	3	1	1	8	33
		2.1.5	All possible impacts from each phase identified	0	0	4	3	7	1	27
		2.1.6	Key impacts selected for further investigation	0	0	0	2	0	13	13
	2.2		**Analysis of impact severity**							
		2.2.1	Impacts analysed as deviation from baseline conditions	0	0	5	1	4	5	40
		2.2.2	Data used to estimate the severity of impacts is sufficient	0	0	5	3	2	3	33
		2.2.3	Methods used to predict impact severity described	0	1	3	2	4	6	20
		2.2.4	Description of impact severity encompass appropriate characteristics	0	1	4	3	2	5	33
		2.2.5	Estimates of impacts recorded where possible	0	1	4	3	2	5	33
	2.3		**Assessment of impact significance**							
		2.3.1	Significance of impacts remaining after mitigation described	0	1	5	2	2	5	33
		2.3.2	Significance of impacts is assessed	0	1	4	5	3	2	40
		2.3.3	Proposed method of assessing significance justified	0	1	3	1	2	8	27
		2.3.4	Economic values attributed to environmental costs and benefits	0	1	2	3	1	9	20
		2.3.5	Stakeholders affected by the development are clearly identified	1	2	5	4	2	1	53

**Terms of reference are included in the full EIA study is undertaken*

Table 3: Sub-category of review area 3 – Alternatives and mitigation

	Review Category	Review Sub-Category		Well performed	Satisfactory, minor omissions	Satisfactory, omissions and inadequacies	Unsatisfactory	Very unsatisfactory, poorly done	Very unsatisfactory, tasks not done	% s Satisfactory (A-C)
Review Area 3			**Alternatives**	**A**	**B**	**C**	**D**	**E**	**F**	
	3.1	**3.1.1**	Range of alternatives considered and reason for final choice given	0	2	3	4	3	3	33
		3.1.2	Alternative construction strategies considered and assessed	0	0	3	0	2	10	20
		3.1.3	Alternative means of achieving project goals for public sector proposals considered	Not Applicable to the EIAs reviewed (N/A)						
	3.2		**Scope and effectiveness of mitigation measures**							
		3.2.1	Concerned stakeholders adequately consulted	1	2	3	3	2	4	40
		3.2.2	Mitigation of all significant adverse impacts considered	0	2	7	3	2	1	60
		3.2.3	Unmitigated impacts discussed and justification given	0	0	0	0	0	15	0
		3.2.4	Indication of effectiveness of mitigation measures	0	1	3	1	3	7	27
		3.2.5	Effective environmental monitoring and management plan presented	0	2	6	4	2	1	53
	3.3		Commitment to mitigation	0	1	3	4	2	5	27

Table 4: Sub-category of review area 4 – Communication of results

	Review Category	Review Sub-Category		Well performed	Satisfactory, minor omissions	Satisfactory, omissions and inadequacies	Unsatisfactory	Very unsatisfactory, poorly done	Very unsatisfactory, tasks not done	% s Satisfactory (A-C)
				A	B	C	D	E	F	
Review Area 4	**4.1**		Public involvement	0	2	4	4	2	3	40
	4.2		**Layout**							
		4.2.1	Introduction	1	3	5	4	2	0	60
		4.2.2	Logic arrangement of information	2	3	5	1	2	2	67
		4.2.3	External sources acknowledged	1	2	5	2	1	4	53
	4.3		**Presentation**							
		4.3.1	Information is comprehensive to non-specialist	2	2	5	2	1	3	60
		4.3.2	Report presented as an integrated whole	3	3	5	3	0	1	73
	4.4		**Emphasis**							
		4.4.1	Emphasis is given to potentially significant impacts	0	3	5	3	2	2	53
		4.4.2	Statement is unbiased	1	3	6	3	0	2	67
	4.5		**Non-technical summary**							
		4.5.1	Non-technical summary	1	3	3	2	0	6	47
	4.3	**4.5.2**	Summary is comprehensive	1	1	3	2	2	6	33

APPENDIX B: LIST OF REPORTS REVIEWED

1. PB of Kolo-Ha-Petlane Diamond Mining Project
2. PB of Kimberlite Pipe No. 66 Mining Project
3. PB of Afri-Ski Project
4. PB of Star Lion Insurance Building
5. PB of Scrap Metal Dealer Shop
6. PB of Satellite Fire Station at Thetsane Industrial Area Proposal
7. PB of National Library and Archives Building
8. PB of Phomolong Re-Development Project
9. PB of Phase 1 of Molikaliko Flyfishing Lodge Proposal
10. PB of Ha-Tsolo Quarry Site proposal
11. PB of Industrial Estate Establishment in Butha-Buthe Proposal
12. PB of Tsehlanyane Eco-lodge Proposal
13. PB of LEC Utilities Sector Reform Project
14. EIS of Ha-Teko Clay Extraction Site Project
15. EIS of Alpine Slopes Snow, Golf and Mountain Estate Proposal

APPENDIX C: LIST OF PEOPLE INTERVIEWED AND QUESTIONNAIRE **RESPONDENTS**

CONTACT PERSON		INSTITUTION
	Mrs Mampoi Peete-Mathaba	NES, Maseru
	Ms Qenehelo	NES, Maseru
	Mr Busa	WASA, Maseru
	Mrs M. Ts'ehlo-Moremoholo	LEC, Maseru
	Mrs D. Pullanikkatil	Lerotholi Polytechnic
	Mr M. Rafoneke	Tikoloho Environmental Consultants
	Mr Mohlolo Lehasa	Sechaba Consultants, Maseru
	Mrs K. Molapo-Phomane	Enviro-Tech Consultants
	Mr J. Matla	Lefisa Venture Investments
	Mr T. J. Mafatle	Kolo Partners

APPENDIX D: COLLATION SHEET

Project _____

Category and Sub category[1]		**Ratings (A, B,C,D, E, F, N/A)**
REVIEW AREA 1		
1.1	**DESCRIPTION OF THE DEVELOPMENT**	
1.1.1*	Purpose and objectives of Development	
1.1.2*	Size/scale of development, nature and duration of construction and operation activities are adequately described, with the use of diagrams, charts and maps	
1.1.3*	Environmental Planning that went into the design of the project is adequately described	
1.1.4	Important design features are highlighted	
1.1.5	There is adequate indication of physical appearance of completed development within the receiving environment	
1.1.6	Nature and quantities of material used during different phases are described	
1.1.7	Number of workers employed during different phases is estimated	
Preliminary Grade for category 1.1	**A B C D E F**	
Comments		
1.2	**SITE DESCRIPTION**	
1.2.1*	The land area of the development site is well defined and its location clearly mapped	
1.2.2	The uses to which this land will be put are described and the different land use areas discussed	
1.2.3	The alternatives considered are adequately discussed according to Criteria 1.2.1 and 1.2.2	
Preliminary Grade for category 1.2	**A B C D E F**	

[1] **The sub-categories bolded and marked with * must obtain Grade A, B or C for the category to be Considered satisfactory, otherwise the report must be returned for revision.**

Comments		
1.3	**RESIDUAL/WASTE MATTER**	
1.3.1*	Estimated types and quantities of wastes generated are adequately estimated and uncertainties are acknowledged.	
1.3.2*	Proposed handling/treatment and disposal of wastes and residual is indicated	
Preliminary Grade for category 1.3	**A B C D E F**	
Comments		
1.4	**ENVIRONMENT DESCRIPTION**:	
1.4.1*	The area expected to be affected by the development is delimited with the aid of a suitable scale map(s).	
1.4.2*	The affected environment is broadly defined to include any potentially significant effects occurring away from the immediate project site(s).	
1.4.3	The time horizon of the study is long enough to account for delayed effects	
Preliminary Grade for category 1.4	**A B C D E F**	
Comments		
1.5	**BASELINE CONDITIONS**	
1.5.1	Important components of the affected environment are adequately identified and described. The methods and investigations undertaken are disclosed and uncertainties are indicated	
1.5.2	Existing data sources were used	
1.5.3	Local land use and development plans were consulted and other data collected as necessary to assist in the determination of the probable future state of the environment, without the project, taking into account natural fluctuations and human activities	
Preliminary Grade for category 2.1	**A B C D E F**	
Comments		
Final Grade for Review Area 1	**A B C D E F**	
Comments on Review Area 1		

REVIEW AREA 2		
2.1	**IDENTIFICATION OF IMPACTS***	
2.1.1*	All important issues identified in the EIA terms of reference are included in the report. Deviations and exclusions are adequately accounted for.	
2.1.2*	Direct and indirect impacts are identified using a systematic methodology. A brief description of the impact identification methods is given along with the rationale for using them	
2.1.3	Due attention is paid to environmentally sensitive areas, to off-sites, time delayed or recurring impacts and to cumulative effects with existing and anticipated developments	
2.1.4	Impacts arising from non-operating conditions are also included	
2.1.5*	All possible impacts from each phase of the project are considered	
2.1.6*	Key impacts were identified and selected for more intensive investigation	
Preliminary Grade for category 2.1	**A B C D E F**	
Comments		
2.2	**ANALYSIS OF IMPACT SEVERITY: the likely impacts of the development are analyzed and Described in as precise terms as possible**	
2.2.1*	Impacts are analyzed as the deviation from baseline conditions	
2.2.2*	Data used to estimate the severity of impacts is clearly described and gaps in data are indicated and accounted for	
2.2.3*	Methods used to predict impact severity are described and are appropriate to the size and importance of the projected disturbance. Assumptions and limitations of the methods are explicitly discussed	
2.2.4	Description of impact severity encompass the appropriate characteristics (e.g. magnitude, extend, duration, frequency, likelihood of occurrence) of impact	
2.2.5	Estimates of impacts are recorded in measurable quantities	
Preliminary Grade for category 2.2	**A B C D E F**	
Comments		
2**.3**	**ASSESSMENT OF IMPACT SIGNIFICANCE**	
2.3.1*	Significance of all impacts remaining after mitigation are described	
2.3.2	Assess significance of impact in terms of local, national and (where appropriate)	

	international societal values	
2.3.3	Proposed method of assessing significance are justified	
2.3.4	Economic values are attributed to environmental costs and benefits	
2.3.5*	Stakeholders affected by the development are clearly identified	
Preliminary Grade for category 2.3	**A B C D E F**	
Comments		
Final Grade for review area 2	**A B C D E F**	
Comments on Review Area 2		
REVIEW AREA 3		
3.1	**ALTERNATIVES**	
3.1.1*	Project alternatives are considered (sites, processes, designs and operating conditions) Their advantages and disadvantages are discussed and the reasons for final choice given	
3.1.2	Alternative construction strategies (e.g. timing, local versus imported labour) are considered and assessed for their environmental and socio-economic implications	
3.1.3	Alternative means of achieving project goals for public sector proposals are considered, otherwise reason is given for their omission	
Preliminary Grade for category 3.1	**A B C D E F**	
Comment		
3.2	**SCOPE AND EFFECTIVENESS OF MITIGATION MEASURES**	
3.2.1*	Concerned stakeholders have been adequately consulted and their view incorporated in the development of mitigation measures	
3.2.2*	Mitigation of all significant adverse impacts is considered	
3.2.3	Unmitigated impacts are discussed and justification offered at to why the se impacts cannot be mitigated	
3.2.4	Indication of the effectiveness of these measures	
3.2.5*	An effective environmental monitoring and management plan is presented to deal with expected and unforeseen impacts caused by the project	
Preliminary Grade for category 4.3	**A B C D E F**	

Comments		
3.3	The project proponent clearly expresses a commitment to and capability of carrying out the mitigation measures	
Preliminary Grade for category 3.3	**A B C D E F**	
Comments		
Final Grade for review area 3	**A B C D E F**	
Comments on review area 3		
REVIEW AREA 4		
4.1 COMMUNICATION		
4.1.1*	There is adequate consultations with concerned project stakeholders and, the scope and results of the public involvement program are adequately documented in the report	
Preliminary Grade for category 4.1	**A B C D E F**	
Comments		
4.2 LAYOUT OF THE REPORT		
4.2.1	Introduction briefly describing the project the aims of the environmental assessment and how those aims are to be achieved is given	
4.2.2*	Information is logically arranged in sections/chapters and the whereabouts of important data is indicated in a table of contents. Terms of reference are given and study team is identified	
4.2.3	Reference to external sources is given	
Preliminary Grade for category 4.2	**A B C D E F**	
Comments		
4.3 PRESENTATION		
4.3.1*	Information is comprehensible to non-specialist. Tables, graphs and other graphics are used as appropriate. Unnecessary technical language or obscure language is avoided	
4.3.2	Report is presented as an integrated whole	
Preliminary Grade for category 4.3	**A B C D E F**	

Comments		
4.4	**EMPHASIS (info should be presented without bias)**	
4.4.1*	Prominence and emphasis given to all potentially significant adverse impacts	
4.4.2	The report is unbiased	
Preliminary Grade for category 4.4	**A B C D E F**	
Comments		
4.5	**NON-TECHNICAL SUMMARY (it should outline the main conclusions and how they were reached)**	
4.5.1	Adequate non-technical summary of the analysis and main findings. Avoids technical terms and detailed explanation of scientific reasoning	
4.5.2	Summary is comprehensive	
Preliminary Grade for category 4.5	**A B C D E F**	
Comments		
Final Grade for review area 4	**A B C D E F**	
Comments on review area 4		

Source: Lee *et al* (1999)

APPENDIX E: QUESTIONNAIRE

Dear Participant

My name is Likeleli Talime and I am undertaking a dissertation as part of my MSc in Geography, specializing in Environmental Management at the University of the Free State. My research seeks to investigate the strengths and weaknesses of Environmental Impact Assessment procedures in Lesotho. I am hoping to achieve this through undertaking analysis of the reports of the EIA studies done in Lesotho and seeking the stakeholders' and practitioners' views on the state of EIA in Lesotho are critical for this research.

This questionnaire is aimed at getting views on the state of EIA practice in Lesotho from the practitioners' perspective. The research is for academic purposes and the information given will be treated with absolute confidentiality.

STATE OF EIA IN LESOTHO

1. How many years have worked as an environmental consultant?

   0-3 ☐ 4-6 ☐ 7-9 ☐ 10+ ☐

2. How many EIAs have you been involved with in the last 3 years?

   1-3 ☐ 4-6 ☐ 7-9 ☐ 10+ ☐

3. Which stages of the EIA process are you predominantly involved in? *Please tick all that apply*

Screening	☐	Mitigation proposals	☐
Scoping	☐	Presentation of findings	☐
Baseline studies	☐	Monitoring	☐
Impact prediction	☐	Other (*please state*)	☐

_____

4. When undertaking EIA which of the following environmental components do you specialize in?

Air Quality	☐	Noise	☐	Water	☐
Ecology	☐	Soils	☐	Other	☐
Landscape	☐	Socio-Economic	☐	(*please state*)	

_____

5. In which sector/(s) do you have experience of EIA preparation?

Agriculture	☐	Housing	☐	Wastes	☐
Energy	☐	Minerals	☐	Water	☐
Transport	☐	Other (*please specify*)	☐		

_____

6. Is there legal provision for EIA in Lesotho?

   _____

7. How long has the regulations governing EIA in Lesotho been in force?

   _____

8. Are there any guidelines that practitioners have to follow when undertaking EIA studies?

   _____

9. In your opinion. What is the purpose of undertaking EIA studies?
   (choose a 3 and rank them in order of importance using 1,2,….)

Purpose	Code	Tick	Rank
Achieving development consent	1		
Reducing environmental impacts	2		
Instrument for sustainable development	3		
Aid to decision making	4		
Helping the developer	5		
Reducing future costs	6		
Other (Please specify)			

10. What are the strengths of the current EIA practice in Lesotho?
    Good basis in legislation ☐ Lots of guidelines ☐
    Other (*please state*) ☐

    _____

11. What are the weaknesses of the current EIA practice in Lesotho? (choose 4 and rank them in order of importance)
    Lack of baseline data ☐ Lack of local EIA expert ☐
    Inadequate consideration of alternatives ☐ Lack of environmental awareness ☐

Insufficient o public involvement	☐	Poor coordination with planning regulations	☐
Poor Scoping	☐	High levels of uncertainty	☐
Limited influence in decision making	☐	Lack of monitoring after decision making	☐
Competence of relevant authorities	☐	Other (please state)	☐

_____

12. Do you feel current EIA practice is effective at:
(please tick the box that you feel most fits your view for each option)

	Strongly Agree	Agree	Disagree	Strongly Disagree
Helping decision makers	☐	☐	☐	☐
Helping developers	☐	☐	☐	☐
Reducing environmental impacts	☐	☐	☐	☐
Contributing to sustainable development	☐	☐	☐	☐

13. How can the EIA practice in the country be improved?

Involve local people in assessment studies	☐	Increase environmental awareness	☐
		Promote capacity building	☐
Develop sectoral guidelines	☐	Promote EIA follow-ups	☐
Other (please state)	☐		

_____

Thank you for your participation

APPENDIX F: DEFINITIONS OF TERMS

Alternatives - A possible course of action, in place of another, that would meet the same purpose and need of proposal (Lesotho Government, 2002).

Environment - The physical factors of the surroundings of the human beings including land, water, atmosphere, climate, sound, odour, taste, biological factors or animals and plants and the social factors of aesthetics and includes both natural and the built environment (Lesotho Government, 2008).

Environmental Impact Assessment (EIA) - The systematic identification and evaluation of the potential impacts (effects) of proposed development projects, plans, and legislative actions relative to the physical, chemical, biological, cultural and socioeconomic components on the total environment (Canter, 1996).

Environmental Impact Statements (EIS) – The environmental impact statement documents the information and estimates of impacts derived from the various steps in the process (*Glasson et al*, 2005)

Scoping - A process of determining the range of issues to be analysed in the environmental assessment and recorded in the assessment report (Wood, 2000). Scoping ensures that the EIA studies remain focused on the significant effects and that time and money are not wasted on unnecessary studies (DEAT, 2002).

Screening - A screening mechanism seeks to focus on those projects with potentially significant adverse environmental impacts or whose impacts are not fully known (Glasson *et al*, 2005)