Screening of EIA in the Free State Province: A comparative analysis between the 1997 and 2006 EIA Regulations

C.N.J. WELMAN

Student number: 20124740

Mini-dissertation submitted in partial fulfilment of the requirements for the degree Master of Environmental Management at the North-west University

Supervisor: Prof. F.P. Retief

2008

Potchefstroom Campus

Abstract

Between September 1997 and June 2006, the South African National and Provincial Government received more than 43 600 separate EIA applications, which is particularly high compared to international trends. This was, in the main, attributable to the weak screening mechanism incorporated into the Regulations.

When introducing the new EIA Regulations in April 2006, Minister Marthinus van Schalkwyk highlighted some of the specific improvements over the previous Regulations that have been incorporated into the new Regulations. The 1997 EIA system was often bogged down by over-exhaustive work on relatively minor applications. The 2006 EIA Regulations introduced an updated screening mechanism and it is estimated that this will result in a 20% reduction in the number of EIA applications.

The main research question of this dissertation focuses on the comparative effect of the screening of EIA applications between the 1997 and 2006 South African EIA Regulations. On provincial level, the Free State was investigated.

In order to address this research a two-pronged approach was followed. Firstly a review of both international and local literature was conducted on EIA in general and screening in particular, which was then interpreted to relate to a South African context. Secondly, EIA project data were obtained from the Free State Department of Tourism, Environmental and Economic Affairs as well as from industry. These data were analysed in line with the research sub-questions and supported the findings of the literature survey.

The research confirmed that the average monthly project load nationally reduced from 425 to 306 applications, representing an average reduction of 28% between the two EIA regimes. In the Free State, the average monthly project load reduced from 22 to 12 applications, representing an average reduction of 46% between the two EIA regimes. The predicted 20% reduction in the number of applications was therefore realised. The possible effect of national and global economic downturn was not included in the investigation.

Under the 1997 EIA Regulations, five activities resulted in almost 90% of all submitted projects, i.e. communication network structures, change of land use, dangerous goods activities, public and

private resorts and electricity infrastructure. When looking at the 2006 EIA Regulations it was found that four activities triggered EIA in almost 63% of all projects submitted for Basic Assessment. These were transformation of land, construction of masts, concentration of animals and construction of roads. Three activities triggered EIA in almost 79% of all projects submitted for full EIA. These were developments larger than 20 hectares, underground tanks and filling stations and sewage treatment with a capacity larger than 15 000m^3 per year.

It is concluded that although the number of EIA applications has been reduced under the NEMA regime, the spread in terms of types of activities has shown significant similarities. Generally speaking it is only a change in the types of infrastructure development, from electricity to roads and sewerage which has been prominent.

Key words:

Environmental impact assessment, screening, threshold, exemption.

Opsomming

Tussen September 1997 en Junie 2006 het die Suid-Afrikaanse regering meer as 43 600 Omgewingsinvloedbepaling (OIB) aansoeke ontvang op beide Nasionale en Provinsiale vlak, wat besonders hoog is vergeleke met internasionale tendense. Dit was hoofsaaklik te wyte aan die swak siftingsmeganisme soos vervat in die 1997 OIB Regulasies.

Met die bekendstelling van die nuwe OIB Regulasies in April 2006 het Minister Marthinus van Schalkwyk verskeie verbeterings bo die vorige Regulasies uitgelug wat vervat is in die nuwe Regulasies. Die 1997 OIB stelsel was gereeld vertraag deur onnodig omvattende werk wat vereis word vir relatiewe onbeduidende projekte. Die 2006 OIB Regulasies het 'n opgedateerde siftingsmeganisme in gebruik gestel en daar word beraam om 'n 20% vermindering in die aantal aansoeke mee te bring.

Die hoofnavorsingsvraag van hierdie verhandeling fokus op die vergelykende effek van die sifting van OIB aansoeke tussen die 1997 en 2006 Suid-Afrikaanse OIB Regulasies. Op 'n Provinsiale vlak het die ondersoek gefokus op die Vrystaat.

Om die navorsing aan te spreek is 'n tweeledige benadering gevolg. Eerstens is 'n oorsig van plaaslike en internasionale literatuur gedoen oor OIB in die algemeen en sifting in besonder, waarna dit in 'n Suid-Afrikaanse konteks geplaas is. Tweedens is OIB projekinligting verkry van die Vrystaatse Departement van Toerisme, Omgewings- en Ekonomiese Sake, asook vanuit die bedryf. Hierdie data is ontleed na aanleiding van die sub-navorsingsvrae en het die bevindinge van die literatuurstudie bevestig.

Die navorsing het bevind dat die gemiddelde nasionale maandelikse projeklading verminder het van 425 tot 306 aansoeke, wat 'n gemiddelde verlaging van 28% verteenwoordig tussen die twee OIB stelsels. Die gemiddelde maandelikse projeklading in die Vrystaat het verminder van 22 tot 12 aansoeke. Dit verteenwoordig 'n 46% vermindering tussen die twee OIB stelsels. Die beraamde vermindering van 20% is gevolglik gerealiseer. Die moontlike effek van nasionale en wêreldwye ekonomiese afplatting was nie ingesluit in die ondersoek nie.

Onder die 1997 OIB Regulasies het vyf aktiwiteite gelei tot byna 90% van alle aansoeke, naamlik strukture vir kommunikasienetwerke, die verandering van grondgebruik, aktiwiteite wat verband hou

met skadelike stowwe, openbare en private oorde en elektrisiteitsinfrastruktuur. Onder die 2006 OIB Regulasies het vier aktiwiteite gelei tot byna 63% van alle aansoeke onder die Basiese Bepalingroete, naamlik verandering van grondgebruik, konstruksie van maste, konsentrasie van diere en konstruksie van paaie. Drie aktiwiteite het tot byna 79% van alle aansoeke onder die volledige OIB roete gelei, naamlik ontwikkelings groter as 20 hektaar, ondergrondse tenks en vulstasies en rioolafvalbehandeling waar die kapasiteit 15 000 m^3 per jaar oorskry.

Daar is bevind dat, alhoewel die aantal OIB aansoeke afgeneem het onder die Nasionale Omgewingsbewaringswet se OIB Regulasies, die verspreiding van aktiwiteite duidelike ooreenkomste getoon het. Die enigste beduidende verandering is in die tipes infrastruktuurprojekte wat verander het van elektrisiteitsnetwerke tot paaie en riolering.

Sleutelwoorde:

Omgewingsinvloedbepaling, sifting, drempel, vrystelling.

Declaration

I declare that this mini-dissertation, apart from the contributions mentioned in the acknowledgements, is my own work. It is being submitted for the Degree Master of Environmental Management at the North-West University, Potchefstroom Campus. It has not been submitted before for any degree or examination at any other university.

Signature of candidate

4 February 2009

Acknowledgements

My appreciation and gratitude is expressed to the following persons who contributed to this research:

- Prof. Francois Retief (study leader) for technical advice, patience and guidance;
- The Free State Department of Tourism, Environmental and Economic Affairs (FS-DTEEA) for their willingness to share project information;
- Mr. Danie Krynauw from FS-DTEEA for his assistance with information on EIA data in the Free State and subsequent follow-up discussions;
- Mr. Neil Devenish from MDA Town and Regional Planners for additional information on Free State data between 1997 and 2006;
- Sasol Technology Environmental & Risk Engineering for the use of their EIA database; and
- Most importantly my wife, Lidia, for her patient support.

Table of Contents

List of tables and figures

Acronyms

DEAT	South African Department of Environmental Affairs and Tourism
ECA	Environment Conservation Act
EIA	Environmental Impact Assessment
FS-DTEEA	Free State Department of Tourism, Environmental and Economic Affairs
I&AP	Interested & Affected Party
NEMA	National Environmental Management Act
ROD	Record of Decision
SA	South Africa

Chapter 1: Introduction

This chapter introduces the research by presenting the problem statement, main aim and research questions. It concludes by describing the outline and structure of the mini-dissertation.

The following is an outline of the sections contained in this chapter:

Section 1.1 provides background to this research, followed by the problem statement in Section 1.2 and research questions in Section 1.3. This chapter is concluded by a description of the structure of the research, contained in Section 1.4.

1.1 Background

When, in April 2006, Mr. Marthinus van Schalkwyk, Minister of Environmental Affairs and Tourism, introduced the new regulations for Environmental Impact Assessments (EIAs) in South Africa, he mentioned that experience continues to prove that the interests of both communities and environment are inseparable and that development and conservation need not be opposing end-goals. It was argued that the previous system of EIAs, under the Environment Conservation Act of 1989 (ECA), has been of great value to the country. It assisted authorities in making informed decisions about development activities and it allowed developers to ask the right questions and often to save money. More crucially it required that the voices of affected communities be heard and ensured that negative impacts on the environment and on human health were proactively identified, prevented, or managed. However, at that time, almost nine years of mandatory EIA experience had also taught valuable lessons and highlighted various shortcomings, which initiated the need for new regulations (Van Schalkwyk, 2006a). One of the main criticisms of the ECA regime has been the failure of the screening mechanism. The consensus was that too many EIAs were triggered which placed increasing pressure on the administrative capacity of government. Therefore the main focus of the 2006 EIA Regulations has been to introduce revised activity descriptions to reduce the number of EIA applications to ensure that time and limited resources are focussed there where it will make the greatest contribution to sustainability.

1.2 Problem statement

Between September 1997 and June 2006, when the 1997 EIA Regulations were in force, National and Provincial Government received more than 43 600 separate EIA applications, which is a very high number of applications, especially when measured against international trends. This was mainly because of the weak screening mechanism incorporated into the Regulations.

During the April 2006 speech, the Minister highlighted some of the specific improvements that have been made. The 1997 EIA system was often bogged down by over-exhaustive work on relatively minor applications. The activity list under the 2006 Regulations has been divided into two schedules based on the nature and associated risk of the activity. Those in the first schedule will be subject to a Basic Assessment process, whilst those in the second schedule will require a thorough assessment process (scoping and EIA). It is estimated that this new screening mechanism, which basically consists of lists and the introduction of development thresholds, will see the number of EIA applications reduced by up to 20%.

According to the Minister, the new assessment process will be a faster and cheaper process, allowing better concentration of our Government's resources on the more complex and potentially damaging activities, something considered critical in facilitating our Accelerated and Shared Growth Initiative (ASGISA), which highlights the balance between development and environmental protection. However, the ASGISA website also mentioned that the 1997 EIA system was seen as cumbersome and in need of reform to reduce unnecessary delays, without sacrificing environmental standards (SA, 2006d).

As EIA is often seen as a stumbling block for development in South Africa, the National Department of Environmental Affairs and Tourism (DEAT) was under pressure to accelerate the implementation of the 2006 EIA Regulations under the National Environmental Management Act (NEMA) of 1998. However in its haste to implement new 2006 EIA Regulations, some problems emerged. By July 2008, the 2006 EIA Regulations had been in force for 2 years. Applicants and authorities have experienced many teething problems with the new Regulations and industry has had both good and bad experiences with the new Regulations.

This report will investigate the changes in screening practice between the 1997 and 2006 EIA Regulations and the effect of these changes on EIA practice in South Africa, specifically focusing on the Free State province.

1.3 Research questions

In view of the problem statement described in Section 1.2, the main research question for this mini dissertation is:

> What is the effect of the 2006 EIA Regulations on screening of EIA applications in the Free State Province of South Africa?

To address the research question above, the following research sub-questions also need to be answered:

1. How is screening conducted in South Africa?
2. To what extent do exemptions feature in the 2006 EIA Regulations compared to the 1997 EIA Regulations?
3. Have the 2006 EIA Regulations succeeded in reducing the number of EIA applications?
4. What has been the change in the types of activities subject to EIA under the 1997 and 2006 EIA Regulations respectively?

1.4 Structure of the research

In order to facilitate easy interpretation of the results the research aimed to provide a clear linkage between the set research questions, the methodology applied to address the questions, the phases in the research process and ultimately the chapters relating to each research question are all described below.

To ultimately answer the research question (defined in Section 1.3), the following 4-phase research process was followed:

Phase 1: Introduction and methodology

In this first phase the research is introduced and the methodology utilised is explained. It comprises the following chapters:

- *Chapter 1: Introduction* – This chapter introduces the research by presenting the problem statement, main research aim, main research question and sub-questions. It concludes by describing the outline and structure of the mini-dissertation; and
- *Chapter 2: Methodology* – This chapter describes the research methodology applied to address the research question introduced in Chapter 1.

Phase 2: Literature survey

Phase 2 of the research addresses research sub-questions 1, 2 and 3 (outlined in Section 1.3), and aims to illustrate the role of screening in environmental impact assessment (EIA) and put it into a South African context. It consists of:

- *Chapter 3: Screening as part of EIA* – This chapter provides the outcome of the literature review in terms of research sub-question 1 and includes a broad overview of the history of EIA, key concepts relating to EIA and screening and then putting it into a South African context.
- *Chapter 4: The screening experience in South Africa* – This chapter addresses research sub-question 2 and highlights the way in which exemption features in South African EIA. It also provides some criticism, with suggestions for improvement with regard to the two EIA systems.
- *Chapter 5*: *Data Analysis – Number of Applications* – This chapter addresses research sub-question 3 and determines whether the 2006 EIA Regulations realised a reduction in the total number of applications submitted for formal EIA.

Phase 3: Data analysis

Phase 3 of the research addresses research sub-question 4 (outlined in Section 1.3). In this phase data were collected from various sources, collated and analysed. It consists of:

- *Chapter 6: Data analysis* – In this chapter the data is analysed and the outcomes linked to the literature survey to confirm the answers obtained for sub-questions 2 and 3 and the analysis provides answers to sub-question 4.

Phase 4: Conclude and Recommend

In phase 4 final conclusions and recommendations are made in terms of the research results. This is described in Chapter 7: Conclusion and Recommendations.

Table 1.1: Structure of the research

RESEARCH QUESTIONS (see Chapter 1, Section 1.3)	METHODS (see Chapter 2)		CHAPTERS (see Section 1.4)
1. How is screening conducted in South Africa?	**Literature review** (see Section 2.1)	**Phase 2** Literature survey	Chapter 3 Screening as part of EIA
2. To what extent do exemptions feature in the 2006 EIA Regulations compared to the 1997 EIA Regulations?	**Literature review** (see Section 2.1)		Chapter 4 The screening experience in South Africa
3. Has the 2006 EIA Regulations succeeded in reducing the number of EIA applications?	**Literature survey and Data analysis** (see Sections 2.1 & 2.2)		Chapter 5 Data Analysis – Number of applications
4. What has been the change in the types of activities subject to EIA under the 1997 and 2006 EIA Regulations respectively?	**Data analysis** (see Sections 2.1 & 2.2)	**Phase 3** Data analysis	Chapter 6 Data analysis
RESEARCH QUESTION: (see Sections 1.2 and 1.3) What has been the comparative effect on the screening of EIA applications between the 1997 and 2006 South African EIA Regulations?		**Phase 4** Conclude and recommend	Chapter 7 Conclusion and recommendations

Chapter 2: Methodology

This chapter describes the research methodology applied to address the research question introduced in Chapter 1, namely:

> What has been the comparative effect on the screening of EIA applications between the 1997 and 2006 South African EIA Regulations?

The following is an outline of the sections contained in this chapter:

> This section introduces the approach to the research in order to address the main research question. The approach to the literature review and the data capturing and analysis are explained in Sections 2.1 and 2.2. The chapter is concluded with challenges for the research (section 2.3).

2.1 Literature review

A review of both international and local literature was conducted as an initial step to obtain a broad overview and key concepts related to environmental impact assessment (EIA) in general and screening in particular. This was then interpreted for the South African context (see Chapter 3).

The literature reviewed for this research can be divided into three broad categories. The first category was international literature dealing with the generic theoretical understanding of EIA screening. Secondly, international practical experience and lessons learned in terms of screening were covered by focussing on country specific literature in the form of published papers, guideline documents, research reports, etc. Finally, the third category included literature dealing specifically with screening in the South African context. Due to the fact that very little formal research has been conducted for South Africa, on the topic of screening, the literature mainly covered legislation and context specific guideline documents.

2.2 Data capturing and analysis

To support the findings of the literature survey (as explained in Section 2.1), project data were obtained from the Free State Department of Tourism, Environmental and Economic Affairs (FS-DTEEA). The FS-DTEEA was chosen due to the good working relationship between the author, who works in the Free State, and the Department. The Department also indicated their willingness to share the relevant information with the author, which provided a good foundation for the study data.

Data was required for the 1997 EIA Regulations between September 1997 and July 2006 as well as for the 2006 EIA Regulations between July 2006 and May 2008. It is evident that, in terms of data capturing, the Department dealt differently with the two EIA Regimes and therefore the formats differed slightly.

Firstly, the Department did not maintain a consistent database for the ECA period and therefore, to ensure a sufficient research sample, departmental data had to be supplemented with data from the private sector. However, since the start of the NEMA regime a more complete database has been kept by the Department which made it easier from a data capturing perspective. There was therefore no need to supplement NEMA data from other sources. Ultimately all data were captured in Microsoft Excel, and analysed according to activity type, activity subtype (where applicable), EIA route taken and, in the case of the NEMA data, the number of activities triggered per application.

In terms of data analysis the main validity requirement was to ensure a representative sample with a 95% probability of reflecting the total population. For the ECA period, to achieve a 95% probability of representing the total population of 2 265 applications, a minimum sample of 331 is required (Stephen and Williams, 1981). For this research a sample of 600 ECA applications was covered which suggests that the sample is sufficiently representative of the total population. In dealing with the NEMA period a minimum sample of 160 applications is required to ensure a 95% probability of reflecting the total population of 266 applications (Stephen and Williams, 1981). Ultimately a sample of 186 NEMA applications was analysed which is deemed representative.

The results of the analysis are discussed in Chapters 5 and 6.

2.3 Challenges for the research

Methodological challenges that had to be overcome included the following:

- Firstly, gaining access to departmental data required formal approval. Although the Department was generally willing to share information, the formal administrative process to gain approval proved quite frustrating and time consuming. Future research, which depends on departmental data, must build this requirement into the timeframe for the research.
- The fairly sparse initial data for EIA applications under the 1997 EIA Regulations obtained from the Department presented the second main challenge. These data did not present a representative sample and therefore additional data were obtained from the private sector. However, due to the large database obtained from the private sector, it was expected to find duplicates between this database and the data obtained from the authorities. By comparing departmental reference numbers 56 duplicates were eliminated.
- A particular challenge in terms of analysis was the fact that under the 2006 EIA Regulations it is possible to trigger several activities as part of a single application for EIA. Care had to be taken to avoid double accounting of projects. This was done by making provision for the listing of all additional triggering activities that formed part of the application without adding to the total project number.
- Finally the conclusions derived from the data had to tread very carefully in terms of assigning causality effects directly to the EIA Regulations. There are obvious external factors such as economic growth in certain sectors, priority spending by government, awareness amongst developers, etc. which influence both the number and types of applications. The purpose of this research was merely to describe the reality in terms of the two EIA regimes and then to argue reasonable explanations.

As explained above, these challenges were successfully addressed. However, for the purpose of future research it is important to highlight these challenges as a contribution to future research methodology design.

Chapter 3: Screening as part of EIA

This chapter aims to fully address research sub-question 1 by means of a literature survey.

The question to be addressed in this section is:

How is screening conducted in South Africa?

In order to discuss the South African implementation of screening, it is necessary to discuss general and key concepts of screening, as well as look at international trends in screening practice. However, it is also necessary to explore screening as part of the larger EIA process and discuss the origins and development thereof.

Therefore, this chapter explores the key concepts and development of EIA and screening both internationally and in South Africa. It is then followed by a discussion of the South African experience and application of screening.

The following is an outline of the sections contained in this chapter:

Section 3.1 introduces Environmental Impact Assessment (EIA), followed by a breakdown of the EIA process into its component parts in Section 3.2 and an introduction to screening as part of EIA. The screening process is thereafter unpacked in Section 3.3, followed by section 3.4 putting screening into a South African context.

3.1 Introducing Environmental Impact Assessment

Human activity has always had an impact on the landscape and with the advent of the industrial age and man's unceasing pursuit of all things larger and more complex, the magnitude of

mankind's impact has increased in scope as well. There are numerous views on the current state of the earth's environment and the scale of the anthropogenic share in arriving at this state. These range from unequivocally stating that the earth is "in bad shape" and we are threatening mankind's very existence (Hertsgaard 2000:84) to the environmental sceptics at the other extreme end of the spectrum who believe that the inhabitants of this planet are better off, healthier and wealthier than ever before (Lomborg 2001:4). Most views, however, concur that more should be done to reduce our impact on the environment. It is after all the place where we, and our descendants, will live out our lives. One of the key building stones in reducing our environmental impact is Environmental Impact Assessment (EIA).

Environmental Impact Assessment (EIA) can be defined as the investigations carried out to determine and predict the impacts of a proposed project on the environment. EIA is a planning and management tool to enable sustainable development and aims to provide decision-makers with enough information to make a decision based on the likely consequences of the project's impacts and the appropriate mitigation measures. It is not a decision-making process, but a tool aiding decision-making (Nielsen *et al*, 2005:35; Sandham *et al*, 2005:51; Weston, 2000:185).

EIA is also a public process and it does not, despite common perceptions, provide definitive answers as to the authorisation of controversial developments (Glazewski, 2005:229). However, the EIA process does provide an early indication of the likely restrictions and/or requirements that would be placed on a project by the authorities (Scholtz, 2006:11).

As mentioned above, the two main purposes of EIA are to identify any significant environmental effects of a major development project and to design any mitigation measures necessary to reduce or remedy those effects (Sandham, 2006:2).

3.1.1 History of EIA

The modern environmental movement is popularly considered to have started with the 1962 publication of Rachel Carson's *Silent Spring*. Because of its best-selling status, the message of our impact on the environment became more and more widespread and started entering the public consciousness. This forced the US government's hand in enacting legislation that compelled developers to take the impact of their development on the environment into account.

The enactment of the National Environmental Policy Act of 1970 (NEPA) in the United States heralded the birth of environmental impact assessment (EIA). This event triggered a chain reaction that led to environmental evaluation being developed and implemented in both developed and developing countries (Sowman *et al*, 1995:45).

3.1.2 The development of EIA in South Africa

Even though it might not be immediately apparent or very widely known, South Africa has quite a long history of environmental assessment going all the way back from its unassuming beginnings as an ad hoc voluntary and non-mandatory tool in the 1970s as part of integrated environmental management (IEM) to the current formalised system that has already had its first major revision (Kidd & Retief, 2009:3; Sandham *et al*, 2005:51). Environmental provisions are even enshrined in the Bill of Rights in our Constitution (SA, 1996).

One of the most significant events in the progress of EIA in South Africa was the 1979 symposium called 'Shaping our Environment'. It was a gathering of non-governmental organisations (NGOs), government, academia, business and the general public. The symposium intended to emphasise the value of environmental assessment as an aid to the management of environmental change and also to consider various EIA methods. This was done with a view to incorporate EIA principles into planning guidelines (Sowman *et al*, 1995:48).

A White Paper and subsequent draft bill formed the basis for the Environment Conservation Act (ECA), which was promulgated as act 100 in 1982. It had an all-encompassing title, yet it was mainly concerned with the coordination of environmental matters and contained very few provisions regulating activities and decisions potentially injurious to the environment. In terms of this Act, the Council for the Environment was launched in 1983. Several of its subcommittees, in particular the Committee for EIA, contributed significantly to the establishing and development of environmental evaluation procedures in South Africa. The Committee initiated research and numerous workshops focussing on EIA in South Africa (Sowman *et al*, 1995:50). The EIA Committee of the South African Council for the Environment prepared a report entitled *Identification and Evaluation of the Effects of Development Projects on the Environment*. This illustrated increased government awareness of the need to consider the environmental impacts of major development projects (Wood, 1999:52).

These actions resulted in virtually unanimous support for EIA to be introduced as part of a comprehensive, holistic planning procedure. However, even though there was overwhelming

support for EIA as a concept, there was considerable difference of opinion on the implementation of EIA. Following from this the researchers were tasked primarily to gather, integrate and document all available information on EIA models and procedures in place elsewhere in the world, along with all identified strengths and weaknesses.

After a two-year period of research, consultation, and review a document entitled *Integrated Environmental Management (IEM) in South Africa* (Council for the Environment, 1989) was published. IEM was chosen to illustrate an approach that integrates environmental considerations into all stages of the planning and development process and requires post-impact assessment monitoring and management. The term EIA was considered to be inappropriate due to perceptions of it being too limited in scope, reactive, anti-development, separated from the planning process, and resulting in costly delays.

IEM can be seen as a philosophy or systematic procedure ensuring the full integration of environmental considerations into all, and especially the early, stages of a development to achieve a sustainable balance between conservation and development. IEM purposes to reconcile conflicting interests and concerns and to enhance proposals by reducing negative impacts and enhancing positive aspects associated with a development. This entails that environmental considerations are first taken into account early on in a project life cycle (DEAT, 2002a:8).

In time it became apparent that any environmental evaluation system developed for South African purposes had to be flexible enough, generally applicable through a wide range of scenarios, widely accepted and above all, practical to implement. Only when such a generic procedure was developed and implemented could more comprehensive procedures and guidelines be developed for specific types of projects. In South Africa, as in most developing countries, economic growth and development are essential national goals in order to provide for the needs of a growing population. In South Africa's unique case, economic growth and development also had to redress the inequalities of the Apartheid era, even though it was not necessarily very high on the agenda in the 1980s. Consequently, any environmental evaluation process that will be implemented in South Africa would have to take note of these requirements and encourage development through the identification and implementation of environmentally acceptable alternatives in order to meet the need, rather than focusing on the negative impacts associated with the proposal. Prominence has to be placed on enhancing the development's positive aspects, identifying appropriate mitigating measures and ensuring that the socio-economic benefits of the preferred alternative outweigh the socio-economic costs associated with the development. Ideally such a system should be expandable to policies and plans as well (Sowman *et al*, 1995:51).

During the 1980s the voluntary undertaking of EIAs as an input to decision-making increased. This was in response to enhanced environmental awareness among the public and decision-making authorities requesting proponents to submit environmental impact assessment reports for major controversial development applications. Provisions in certain legislation, mainly on provincial level, enabled administrative authorities to require additional information pertinent to the proposal to be submitted. This chiefly took on the form of an EIA report. However, with clear procedures and guidelines for preparing such reports lacking, the quality and even adequacy of these reports differed noticeably (Sowman *et al*, 1995:52).

South Africa's first dedicated environmental statute, the Environment Conservation Act, was passed in 1982. It was not particularly effective and was later repealed and replaced by the Environment Conservation Act 73 of 1989 (ECA). The White Paper preceding the 1982 ECA referred to the need for a "golden mean" between conservation and economic development. This is a sentiment still commonly heard today, usually mentioned in the form of looking after the triple bottom line. The 1989 ECA was more influential than the 1982 ECA but still by no means ideal. Almost all of its far-reaching sections were triggered only by the exercise of ministerial discretion rather than being substantive provisions in their own right (Glazewski, 2005:133).

3.1.3 The Environment Conservation Act (ECA) 73 of 1989

EIA in South Africa was enacted in 1989 with the Environment Conservation Act, 73 of 1989. This aimed to ensure that decision-making was guided by environmental policy (Sowman *et al*, 1995:46). It must be noted that, although EIA was enacted in 1989, it only became a legal requirement for a wide range of projects in September 1997 in terms of sections 21, 22 and 26 of the Environment Conservation Act (ECA) of 1989 (Sandham *et al*, 2005:51).

In 1992 a revised IEM procedure was published in the form of six guideline documents based on practical experience of IEM. Numerous voluntary EIAs followed with a key characteristic being the linkage between EIA and on-going environmental management of the implemented project (Avis, 1994:230).

3.1.4 EIA Regulations under the ECA

In response to mounting pressure to give EIA legal standing, EIA Regulations were promulgated under the 1989 ECA and came into effect between September 1997 and April 1998 (SA, 1997a; SA, 1997b). However, only EIA procedures were incorporated in the Regulations and not monitoring, auditing and environmental management provisions, which were features of IEM. The requirements however, included most of the normal steps of EIA systems, such as screening, scoping, public participation, environmental reports, review, and decision-making (Stærdahl *et al*, 2004:7; Wood, 1999:53).

In its almost 9 years, the ECA system for EIA has been of great worth to the country by assisting authorities to make informed decisions about development activities and also assisting developers to ask the right questions. This often saved money. Through its integrated public participation process it also gave voice to affected communities and ensured that negative impacts on our environment and on human health were proactively identified, prevented, or managed. Experience proves that community and environmental interests cannot be separated and that development and conservation need not be opposing end-goals (Van Schalkwyk, 2006a:1).

3.1.5 The National Environmental Management Act (NEMA) 107 of 1998

Government initiated the Consultative Conference on National Environmental Policy in August 1995 where the Consultative National Environmental Policy Process (CONNEPP) was commenced. A discussion document entitled *Towards a new Environmental Policy for South Africa* was produced. Feedback received on the discussion document was used as an input for drafting a Green Paper or draft policy. Feedback on the Green Paper was used as an input for drafting the White Paper on Environmental Management Policy, which was approved by Cabinet in June 1997 and distributed for public comment in October 1997. CONNEPP reached its conclusion and the policy implementation stage began with the enactment of the National Environmental Management Act (NEMA) in the Government Gazette on 27 November 1998 (Rossouw & Wiseman, 2004:7).

The NEMA provided for the IEM philosophy to be integrated into the undertaking of EIAs (Wood, 1999:53). NEMA repealed some, but not all of the provisions of the ECA. In particular it did not repeal the EIA provisions. Nevertheless, the ECA and the Chapter 5 NEMA EIA regimes existed satisfactorily side by side for 8 years (Glazewski, 2005:244).

3.1.6 EIA Regulations under the NEMA

South African EIA legislation (under NEMA) requires EIA for activities at project and not strategic level (SA, 2006a). The current EIA Regulations provide for two activity lists that identify activities that trigger EIA. Listing Notice 1 contains activities that require a Basic Assessment (SA, 2006b). Listing Notice 2 lists activities with potentially more significant environmental impacts, which require a Full Assessment (SA, 2006c).

Similar to the requirements of the 1997 EIA Regulations, an independent consultant, now called an Environmental Assessment Practitioner (EAP) in the Regulations, has to be appointed by the applicant to manage and conduct the EIA process. For the purposes of this study, the term consultant will be used throughout. The consultant, or in-house EIA or environmental legal expert, if available, must then determine which formal route according to the 2006 EIA Regulations should be followed, obviously taking cognisance of any guidelines applicable to the activity or the area. This is mainly done by using the two activity lists mentioned. If the proposed development triggers more than one activity from the lists, the EIA route requirements of the most stringent activity need to be followed. For example, if one activity requires a "full" assessment (scoping and EIA), but the other activities only trigger a Basic Assessment, then the entire development must be subject to scoping and EIA (Kidd & Retief, 2009:32).

The NEMA Amendment Act of 2004 amended section 24 of NEMA. Interestingly the EIA process in South Africa has been refined and improved ever since the advent of NEMA, but the amendment fundamentally changed this. In essence, while the previous s24 triggered EIA on the sensible basis of a combination of listing activities and the classical formula of activities that may significantly affect the environment, the new regime relies solely on lists (Glazewski, 2005:247).

3.2 The EIA & Integrated Environmental Management (IEM) processes

According to Stærdahl *et al* (2004:3), most EIA systems comprise – in one way or another – of screening, scoping, an EIA report, public participation, decision and monitoring. Screening, scoping and the consideration of alternatives form part of the early planning and design stages of the environmental impact assessment process and are critical elements, because they determine and

affect both the effectiveness and efficiency of the subsequent process and because EIAs are almost always carried out under limitations of time and cost (Jones, 1999:225).

According to the IEM procedure, there are three stages in the development of any proposal: development and assessment, decision-making and implementation.

- Stage 1 - Development and assessment. In this phase the proponent gives early consideration to environmental issues in the planning and development of proposals by consulting with the authorities and the public, identifying alternatives and environmental issues, establishing the legal and administrative requirements of the proposal and considering measures to mitigate potential impacts. Screening forms part of this stage to determine the scale of environmental assessment required. Undertaking these tasks during the early stages of a project will result in a more integrated and interactive approach to the planning and assessment of the proposal. This will expedite the process and aid informed decision-making (Sowman *et al*, 1995:58).
- Stage 2 - Decision-making. If sufficient information has been provided to the responsible authority indicating that adequate consultation took place and compliance with planning requirements, a decision is taken to approve or reject the proposal (Sowman *et al*, 1995:61).
- Stage 3 - Implementation of proposals. A proposal may be implemented after approval has been granted. The conditions of approval may require the compilation and auditing of an environmental contract (Sowman *et al*, 1995:62).

As a rule, an effective assessment enables the decision-making authority to weigh up the benefits against the detriments of the proposal and subsequently reach a socially optimal decision. As a minimum, an effective assessment should comply with all relevant legal and procedural requirements and present clear and unambiguous documents that are clearly understandable to all stakeholders, including the decision-making authority (Kruger & Chapman, 2005:52).

3.3 Screening in EIA

3.3.1 Definition of screening

Screening is an activity carried out prior to an EIA to determine whether it is necessary to undertake a full assessment, and if required, describes the level of assessment appropriate for that proposal. In terms of the IEM principles, it is the proponent's responsibility to respond to the environmental implications arising from a proposal as fully and as early as possible in the project's life-cycle.

Therefore screening is a decision-making process initiated early on in the development of a proposal to maximise the return on effort exerted (DEAT, 2002a:6; Nielsen *et al*, 2005:35).

This can be illustrated in a more general manner by looking at project management principles and specifically at front-end loading, which is similar in principle to screening. Front-end loading on a project ensures that the right projects are chosen for further development and that these projects are executed in the best possible way. The inherent principle of front-end loading is to ensure that enough effort is spent at the early stages of the project in order to maximise the project's chance of success and minimise the chance of costly and time-consuming rework. The biggest impact on project success can be made at the beginning of the project (Sasol, 2005:4).

Screening basically accelerates the flow of applications through the system in order to ensure that scarce government resources are primarily used for projects with a significant environmental impact and ultimately ensures that the level of environmental analysis matches the significance of the issues likely to be raised by the project (Jones, 1999:226; Nielsen *et al*, 2005:39).

Lastly, screening not only serves as an EIA filtering tool to ensure efficient use of government resources, but it also serves to adjust or change projects in order to minimise their environmental impacts. It appears to act as a revelation for developers with regard to their environmental footprint thereby providing opportunity for many ideas for adjustment and optimisation to come to fruition. Screening is a potentially significant instrument for preventing pollution (Nielsen *et al*, 2005:47).

3.3.2 Purpose of screening

All types of development have some or other impact on the environment. However, if all projects had to be subject to EIA, this number would be astronomical. Experience has shown that a large number of projects have very low or even insignificant environmental impacts. This is where screening can come in very useful since the screening mechanism focuses EIA on the projects with potentially significant adverse environmental impacts. Keeping the precautionary principle in mind, projects where the impacts are not fully known are usually included as well. Projects with few or no impacts are screened out and should only follow other normal administrative process, resulting in no additional assessment and additional loss of time and expense (Glasson *et al*, 1999:88). According to Jones (1999:234) countries without a formal screening process, such as Kazakhstan and Russia, tend to have very large numbers of formal EIA applications produced every year (approximately 3000 nationally). A similar trend is noticed in countries such as France where

thresholds are very low. Such a large numbers of formal applications can lead to problems in quality, cost and delay.

In interviews conducted as part of an investigation by Nielsen *et al* (2005:41), Danish county officials considered the aims of screening to be threefold. Firstly it had to change project proposals to reduce their environmental impact. Secondly it had to assess whether projects will pose significant environmental impacts and thirdly, and most importantly it had to ensure compliance with EIA regulations.

Since the environmental impact assessment process is often labelled as unnecessarily time-consuming, delays have to be minimised as far as possible when processing development applications (Sowman *et al*, 1995:54). The aim of screening is to make the EIA process more efficient and it should be considered as part of the pre-feasibility investigations of a project as it can assist a developer to potentially call an early halt to the EIA process before embarking on an unnecessary process. In other words, one should consider the option of stopping before one starts (Retief, 2006:7).

Another key purpose of the screening process is to provide for the shortest applicable process for relatively standard applications and applications with known or limited environmental impacts (Claassen *et al*, 2003:4).

EIA is often seen, as an impediment to development (Kidd & Retief, 2009:1). This is not entirely without justification as concerns have even been raised in the South African Parliament that the process could potentially result in the delay of realising development opportunities or even the cancellation of projects due to lost windows of opportunity (Govender, 2006:7; Kidd & Retief, 2009:54). The South African National Department of Environmental Affairs and Tourism (DEAT) also reported that the EIA system was overloaded by a large number of applications for activities with insignificant environmental impacts – in other words, ineffective screening of EIA was taking place (Swanepoel, 2008:1).

Because the EIA process can be very time-consuming and potentially costly for a developer, screening can lead the developer to make the necessary changes to prevent or reduce pollution associated with a proposed project. This leads to a win-win situation as the development has a reduced environmental footprint and the developer can avoid formal EIA (Nielsen *et al*, 2005:41).

Screening is a crucial stage of the EIA process and, as discussed above, inappropriate decisions early on in a project life-cycle can have considerable implications later on. Conducting an EIA where it was not required will result in both additional financial costs (appointment of consultants, specialists, etc.) and delays for the developer simply due to the time it takes to complete an EIA. It will also result in the decision-making authority having to expend extra resources in processing an application unnecessarily. Conversely, failing to conduct an EIA when significant environmental effects are likely precludes EIA to add value by providing environmental information to the developers to reduce environmental impact and decision makers to facilitate informed decision-making. There will also be no opportunity for external stakeholders to participate in the scrutiny of the potential environmental effects (Wood & Becker, 2005:366). Lastly, if incorrect screening results in a project triggering formal EIA, not following the process, it can lead to legal non-compliance and possible prosecution under environmental legislation. In South Africa, this can be quite severe.

Ideally with pre-application screening, the environmental implications of a project should be investigated and addressed prior to the application for environmental authorisation according to the regulated process. This process should be initiated at the same time as any other pre-feasibility type investigations (e.g. technical and financial studies), in order to positively influence the design/layout early on and thereby minimising the cost impact of mitigation of potential environmental impacts. This includes investigations into the need and desirability of the proposal, as well alternatives in terms of technology and location (DEAT, 2002a:8).

Pre-application screening could then as a result eliminate the need for further environmental assessment, due to the abandonment of the proposal based on a fatal flaw analysis, or because there is certainty that the proposal will not require environmental authorisation to proceed. However, it could also facilitate certain adjustments to be made to the proposal before submission of the formal application to the authorities for authorisation (DEAT, 2002a:11).

Although EIAs usually represent a small portion of the total cost of a project, it still incurs additional costs and consequently tends to be commissioned at a fairly advanced stage in the project planning process when the necessary capital is available. Accordingly, EIA is often applied too late in the project to have any real impact on the design of the project (Abaza, 2000:273). On the other hand, due to the relatively long timeframes involved in executing EIA and the level of information required for a proper assessment, a fine balance needs to be struck between commissioning the EIA early enough to afford enough time for the process to be completed and late enough to have enough information and funds available.

Proper screening for EIA ultimately requires an investigation of the significance of the identified impacts and can therefore be a very complex process which depends on both quantitative and qualitative assessments (Weston, 2000:194). This would result in a time-consuming process and be counter to the aim of screening being a streamlining action. Therefore the screening decision and all actions leading up to that decision, needs to be managed by an experienced professional, in order for the correct issues to be investigated.

An analogy is that of an ill person visiting the GP. Ideally the GP will have to run every available test on the patient to determine exactly what is wrong. However, the GP, based on knowledge and experience, studies a few key parameters and bases the diagnosis upon the findings of the cursory investigation. This saves both time and money and will serve in the vast majority of cases. Sometimes it might happen that a case requiring detailed study slips through the cracks. This is similar to screening. It requires an experienced professional to limit those slips.

3.3.3 Screening in context

The reference point for screening is more often than not the applicable EIA legislation, which generally indicates the types of projects that trigger formal EIA and indicate the issues that need to be taken into account when making the screening decision.

A need exists to ensure that screening remains clearly separated from the scoping phase and from a full environmental assessment to reduce the burden on administrators and developers and also to improve the effectiveness and efficiency of the environmental assessment process. One of the more effective means of achieving this end is for pre-application screening by proponents to take place (DEAT, 2002a:18).

The first step of screening is to ascertain whether a development proposal requires environmental assessment or not. If the conclusion of this first step determines that an environmental assessment should be undertaken, the second step of screening is undertaken to determine the level of environmental assessment required. The first step also includes a decision to reject a project outright (DEAT, 2002a:7).

During its first step, the screening process should keep several factors in mind. Firstly it should look at the alignment of the proposal with existing policies and plans, secondly the scale or extent of the proposed development, thirdly the intensity of potential impacts and lastly the significance of such

potential impacts. Based on the above, the determination of impact significance is a fundamental aspect of screening (DEAT, 2002a:8).

In theory, screening should include a consultation with the competent authority. In practice though, it is often done by the developer due to schedule constraints. For screening to work effectively, the developer must be aware of EIA and its requirements. Additionally the environmental consultant and the competent authority must be able to advise in an informed manner. Other stakeholders may also be included, but the public and non-statutory bodies or non-governmental organisations are hardly ever involved (Jones, 1999:226).

3.3.4 Types of screening

There are several approaches that can be used to classify development proposals during screening. These include:

3.3.4.1 Initial consultation

The proposal may commence with an initial consultation between the development proponent and the decision-making authorities. This can be either the lead authority or a funding body. In South Africa, this is usually the lead authority. This would require the submission of basic information or an initial environmental evaluation on the project. An initial environmental evaluation is often also known as a preliminary environmental assessment, or mini-EIA. It involves most of the actions of a full EIA, but with a much lower level of detail. External stakeholders, apart from the authority or funding body mentioned above, are not usually involved (DEAT, 2002a:12; Jones, 1999:231). However, as discussed below, this requires a certain level of knowledge on the subject matter from the authority, which might be lacking. This could result in inconsistencies in the decisions taken (Jones, 1999:228).

3.3.4.2 List-based approaches (inclusive and exclusive), including listed sensitive areas

It has been shown that certain types of development have a smaller likelihood of resulting in significant environmental impacts. Conversely, other types of development are much more likely to

result in serious environmental impacts. This forms the basis of the thinking that resulted in screening lists for EIA purposes.

Project or activity lists are a popular screening tool in identifying developments that automatically trigger environmental assessment. There are two types of screening lists for EIA, namely positive or inclusive lists and negative or exclusive lists.

Positive lists contain a list of projects for which an EIA will always be mandatory, regardless of location. This approach assumes that the developments listed have the potential to result in significant environmental impacts. Exclusions from this list therefore also do not need to follow the regulatory EIA process at all. This process can also include requirements where the location of a proposed development in a listed sensitive environment automatically triggers regulatory environmental assessment requiring authorisation.

Negative lists contain projects typically classed as categorical exclusions. Examples of these lists are used by Canada and by the World Bank. Exclusion lists contain a list of activities and/or sensitive areas that trigger the automatic rejection of such projects applying for authorisation or funding.

A result of this process is a potential reduction in both the number of applications for environmental authorisation and the subsequent administrative load on developers and the decision-making authorities. There is however, an inherent weakness in the use of lists: individual projects of the same general type can often differ in scale and even layout and can subsequently have different environmental impacts (DEAT, 2002a:13; Jones, 1999:228).

3.3.4.3 Thresholds

A threshold is the point where the potential environmental effects of a project can be considered significant. A threshold can be a quantitative or qualitative standard or a set of criteria against which the environmental significance of an impact may be determined. A threshold may be based on health-based standards, service capacity standards and ecological tolerance standards.

Thresholds can help to determine the significance of environmental effects, but are not necessarily conclusive. There are certain advantages to using thresholds. They are *inter alia*:

- More rational, predictable and scientific policy and legislation;
- Ready identification of a project's potential significant environmental effects;
- Consistent determinations of significance by authorities;
- Consistency in EIA reviews undertaken by different individuals within an authority;
- Improved efficiency of reviewing and decision-making; and
- Developers are encouraged to alter the design of the project prior to submitting an application (DEAT, 2002b:21).

The requirement for EIA may be linked to certain thresholds, where exceeding such a threshold will require mandatory or likely EIA. These can include the scale of the project, capital expenditure (which is not necessarily a good or accurate measure of environmental impact), raw materials requirements, emissions or outputs, or even the area of land required (Jones, 1999:229). In some countries, like South Africa with the 2006 EIA Regulations, threshold values are set below which EIA is not legally required (Nielsen *et al*, 2005:37).

Thresholds should be utilised with care and thought. The reason for this is that a project with a certain physical footprint, such as 10ha in one specific area may result in a larger environmental impact than a similar type of project in a different area occupying 50ha.

One of the major debating points regarding thresholds is whether the extent of environmental impacts of a project just under the threshold differs greatly from one just above.

Two examples from the 2006 EIA Regulations will be used to illustrate this point (SA, 2006b; SA, 2006c). The first is the transmission of above ground electricity. The threshold between a Basic Assessment and a full EIA is set at 120kV. This begs the question as to what the difference in impact would be of a line carrying just below 120kV compared to a line carrying just over 120kV. The second activity is the bulk transportation of sewage and water in pipelines with a peak throughput of 120 litres per second or more, which triggers a Basic Assessment. Once again, the question is raised as to the reason why a pipeline with a peak capacity just below 120 litres per second would not trigger an EIA and 120 litres per second or more would. There are many questions with regard to the choice of specific thresholds, but Kidd and Retief (2009:30) sums it up very well when they state that there appears to be an apparent arbitrariness to some of the thresholds in the 2006 EIA Regulations.

There is, according to anecdotal evidence, one activity where the new threshold was chosen quite wisely and that is the aboveground storage of dangerous goods with a combined capacity over $30m^3$. A large part of commercial fuel or solvent installations at customers are of capacities less than $30m^3$ due to the standard tank sizes prescribed by the SANS 1535 standard (SANS, 2007). The installations thereof are also guided by the SANS 10131 standard, which includes secondary and spill containment as well (SANS, 2004). This entails that a large number of unnecessary EIAs are avoided, where the impacts are very well known and the manufacture and installation of the equipment are all guided by national standards.

Another possible abuse of thresholds by developers is by submitting development plans just below the relevant threshold and subsequently putting forward a series of similar developments which may result in a total development significantly above the threshold (Jones, 1999:230). This is however catered for in the 2006 EIA Regulations with activity 17 of Government Notice R386, where a Basic Assessment is required for phased activities where any one phase of the activity may be below a threshold triggering Basic Assessment, but where a combination of the phases, including expansions or extensions, will exceed a specified threshold. This, coupled to the penalty clauses written into the NEMA, which dictate the consequences of non-compliance, will hopefully cause such activities to be subject to EIA in a project phase where it might still have a positive influence.

3.3.4.4 Preliminary evaluation

A preliminary evaluation, which might be seen as a mini or cursory EIA, is conducted in order to assist informed decision-making to either exempt a proposed development from a comprehensive environmental assessment, reject the proposal outright or to determine the level of further assessment required for environmental authorisation. It should provide a description of the proposal as well as all alternatives being considered, describe the way in which stakeholders will be consulted and their concerns taken into account and also identify potential environmental issues (DEAT, 2002a:14). This was the route most often taken in the exemption route under the 1997 EIA Regulations, where enough information had to be given to the authorities to "make the call", but without launching a full-scale EIA.

3.3.4.5 Decision support systems and checklists

Decision support systems can serve as an alternative or a supplement to other screening approaches aiding and streamlining environmental decision-making. This is especially useful for routine development proposals. These systems may incorporate a locally tailored criteria-based scoring system allowing rapid categorisation of proposals to either approve outright, reject outright or requiring further investigation. More sophisticated decision support systems are typically encoded with expert knowledge to direct the process of decision-making in a tightly structured manner. This might also entail the use of computer systems, such as GIS-based software to determine sensitive areas (DEAT, 2002a:14). As mentioned later in this chapter, this type of system can be used with the numerous projects involving telecommunications mast, where location is essentially the only differentiating factor with regard to environmental impact. Another area where this can prove to be really value-adding is for commercial fuel and solvent installations over $30m^3$. The physical installation of these types of installations is already governed by South African standards, as described above, and requires sign-off by a registered engineer. This is potentially a very strong screening tool that can even win over the support of industry and developers if utilised properly and widely enough.

One potential drawback of the checklist approach is when the checklist approach is used for all types of projects. This should ideally rather only be used for specific activities and also tailored according to the environmental issues specific to that activity.

3.3.4.6 Decision-maker's discretion

Counter to the examples mentioned above which are relatively well structured approaches, the screening process may also be conducted on a case-specific basis at the discretion of the lead authority or some other decision maker as is the case in Taiwan. This may be undertaken by the decision-maker and may or may not include other decision-making or decision-influencing parties, such as review committees or expert panels. Wherever discretionary decision-making takes place, the ideal should be to enhance engagement in the review process, thereby increasing the level of objectivity and avoiding perceived ad hoc or inconsistent decisions (DEAT, 2002a:14). Another requirement of discretionary decision-making is adequate knowledge on the subject matter by the decision-making body (DEAT, 2002a:17). This type and level of capacity is unfortunately lacking in South African environmental departments (Duthie, 2001:221; Govender, 2006:7; Krynauw, 2008).

3.3.4.7 Screening criteria

The incorporation of sensitive locations into the screening procedure as part of the criteria can add robustness to the screening process. This would entail that all developments located within certain "sensitive" areas will require an EIA to be conducted. These areas are usually designated as sensitive on the basis of features or components of interest (Jones, 1999:230). This issue has been given a cursory nod in the 2006 EIA Regulations by requiring a Basic Assessment for the following activities:

- Construction of resorts, lodges, hotels or other tourism and hospitality facilities in a protected area contemplated in the National Environmental Management: Protected Areas Act, 2003 (SA, 2003);
- Certain types of construction within 100m of the high-water mark of the sea; and
- Transformation or removal of indigenous vegetation of 3 hectares or more within a critically endangered ecosystem or an endangered ecosystem listed in terms of the National Environmental Management: Biodiversity Act, 2004 (SA, 2004).

Processes or activities identified in terms of the National Environmental Management: Biodiversity Act, 2004, requires a full EIA (SA, 2006c).

In the June 2008 draft Amendments to the 2006 EIA Regulations, certain additional activities were included or amended and require a Basic Assessment to be conducted. These are:

- Facilities for aquaculture in an estuary or any protected area as mentioned above;
- Reclamation or destruction of a wetland;
- Removal of the size threshold for transformation or removal of indigenous vegetation within a critically endangered ecosystem or an endangered ecosystem listed in terms of the National Environmental Management: Biodiversity Act, 2004 (SA, 2004), which now requires a Basic Assessment instead of a full EIA;
- Any process or activity identified in terms of National Environmental Management: Biodiversity Act, 2004; and
- Expansion of resorts, lodges, hotels or other tourism and hospitality facilities in a protected area contemplated in the National Environmental Management: Protected Areas Act, 2003 (SA, 2003), where the total development footprint will be expanded (SA, 2008b).

This is clearly a move in the right direction in ensuring that the screening process employed in South Africa is more robust. There is however still room for improvement. One suggestion would be to reduce formal EIA requirements in non-sensitive areas.

3.3.4.8 Screening matrices

A screening matrix is fundamentally the combination of two checklists with environmental components on one axis and project characteristics on the other. This matrix is then used to decide on the requirement of EIA for a project. Screening matrices can be a very sophisticated technique, which may not necessarily be suited to smaller-scale projects unless circumspectly managed. As with most methods, a certain amount of wisdom is required to properly utilise this screening tool (Jones, 1999:231).

3.3.5 Screening method application

To maximise the benefits from the above-mentioned methods, it is recommended that they be used in combination with other tools rather than in isolation. As a result, most EIA systems tend to adopt a screening process that involves lists, thresholds and the use of discretion (Jones, 1999:231).

3.3.6 Information Needed for Screening and Decision-Making

As mentioned above, the screening process aims to provide sufficient information on a proposed development and the surrounding environment to facilitate informed decision-making on the need for, and level of environmental assessment. The gathering of information required for the screening process might involve some preliminary stakeholder engagement (although not necessarily external stakeholders), the consideration of feasible alternatives, the identification of key environmental and social issues, preliminary assessment of possible impacts, along with the subsequent assignment of impact significance and mitigation options, and reporting of preliminary environmental information. It might also include the consideration of specialist expertise. These information requirements are very similar in nature to those typically associated with a full environmental assessment. However, the difference between screening and full environmental assessment lies in the level of detail required. The information required for the screening process is more qualitative,

superficial and preliminary, whereas a full environmental assessment requires more quantitative and detailed information (DEAT, 2002a:15).

With South Africa's current 2006 EIA Regulations relying on the use of inclusive lists, linked to thresholds and/or sensitive areas in some instances, a certain amount of information is required before a screening decision can be made as to whether EIA is required and what route should be followed, if required. This information is usually summarised in a fairly detailed process description that covers the entire development. This includes amongst others, the scale of the activity and the processes involved, as well as information on the location. This will allow either the in-house EIA expert or the appointed consultant to scan the two activity lists for potentially applicable triggering activities. Numerous companies, especially companies involved in a large number of developments, developed in-house EIA expertise specifically for this purpose. This is a highly specialised field as the pre-application screening decision is more often than not based on legal interpretation of EIA legislation rather than purely technical or environmental merits. Due to the many grey areas in the descriptions and also the wide interpretation of certain activities, it might even be required to commission the services of an environmental legal practitioner to make a judgement. This would require the process description to be written in plain language, since anecdotal evidence has shown that attorneys seldom have an in-depth knowledge of engineering and technical terms.

Normally a "maximum likely scope" is used for the screening decision, which can then be allowed to reduce up to construction, since scope increases on activities that already trigger EIA can have a negative influence on the schedule of the project.

3.3.7 Screening practices elsewhere

The approach to screening differs, as can be expected, between various countries practicing environmental assessment. In South Africa screening is indirectly included in the 1997 Environmental Impact Assessment Regulations (SA, 1997a). Screening in other African countries such as Tunisia, Turkey and Egypt is largely based on screening lists that define whether development proposals require preliminary assessment or a full EIA. This is similar to the approach contained in the 2006 EIA Regulations, where thresholds and to a lesser extent, sensitive areas, are used (SA, 2006a; SA, 2006b; SA, 2006c). Elsewhere in Africa, in countries without regulatory EIA processes, screening is generally defined according to criteria developed by funding agencies (e.g. the World Bank or IFC) or built into industry best practice approaches to EIAs (DEAT,

2002a:16). In other developing countries such as India a screening process is based on lists of projects, with thresholds, for which EIA is mandatory (Fivaz, 2006:4).

Taiwan, for example, developed screening systems that consider the specific characteristics of individual projects. This is a very effective approach to EIA screening seeing that projects are not broad-brushed into certain categories. However, this approach typically requires a high level of expertise on the subject matter from the administering authority, which renders it inappropriate for application in countries where such administrative competence does not yet exist (DEAT, 2002a:17).

Screening in Denmark utilises a combination of two approaches. These are a prescriptive approach, wherein proposals always subject to EIA are defined and listed in Annex I of their Directive and a discretionary approach, where proposals falling under Annex II are examined on a case-by-case basis (Christensen *et al*, 2005:394).

3.3.8 Challenges and short-comings of screening practice

The implications of a weak screening mechanism is that too many projects would be subject to formal EIA or certain high impact projects might not require EIA (Retief, 2006:17).

As with any system, there are certain challenges and shortcomings associated with the screening process. These are a lack of capacity to undertake formal screening by the authorities, project or activity lists not taking into account the sensitivity of the proposal's location, the possible misuse/abuse of thresholds and the impact of cumulative effects (Retief, 2006:17). This lack of capacity is both in terms of subject matter expertise resulting in ill-informed decisions, as well as staff shortage resulting in unnecessarily long timeframes taken for decision-making (DEAT, 2002a:17).

A shortcoming of project or activity lists is its broad-brushing effect. This is because projects of the same general type of activity may vary greatly in size, plant requirements, process and layout and, therefore, in their impact on the environment (Jones, 1999:204). Therefore lists that do not include some form of environmental threshold, screening out proposals that do not require environmental assessment, merely add to the administrative burden of the decision-maker. This, once again, leads to hasty decisions or unnecessary delays to project schedules, which in turn, adds to the negative image associated with EIA (Sowman *et al*, 1995:54).

Conversely, the designation of thresholds is not a panacea for the process. Generally, problems in determining exact thresholds tend to be associated with the difficulty of determining impact significance, which can be very subjective. This procedural weakness may be exploited by developers to formulate proposals that fall just below the threshold requiring formal environmental assessment. The combined or cumulative effect of authorising a number of such proposals can subsequently be overlooked (DEAT, 2002a:18). This is not the adjustment to proposals envisaged in the screening process mentioned above.

The aim of screening is to rapidly screen out the projects that do not need to be subject to formal EIA. Where screening forms part of the regulated process, a specified time frame for undertaking screening would assist in making the process more streamlined and effective (Jones, 1999:202). This will aid developers in determining accurate schedules for their development proposals, as well as conform to the aim of rapidly processing projects not requiring EIA.

3.4 Screening as part of South African EIA Regulations

3.4.1 The 1997 EIA Regulations

There are numerous differing opinions surrounding the existence of and efficiency of a screening system under the 1997 EIA Regulations.

According to Rossouw *et al* (2003:210), South Africa had a two-stage screening process under the 1997 EIA Regulations. The first was a legal judgement made with respect to the list of projects and activities for which EIAs are required, and if unsure, a pre-application consultation with the relevant authority could be asked for. Since it was possible to obtain final authorisation based on a scoping report, the second screening stage determined whether further assessment was necessary based on the information contained in the scoping report.

According to Glazewski (2005:212) screening under the 1997 EIA Regulations was usually carried out prior to the scoping process but could potentially overlap with it.

The 1997 South African EIA Regulations specify a set of activities which require mandatory EIA. The Regulations however, included very few thresholds to eliminate minor activities and no classification according to area sensitivity. This resulted in a very large number of projects requiring

formal EIA compared to other countries. The more than 4000 EIAs per year resulted in long delays in processing the applications. In 2006 it was reported that former President Mbeki had apparently attacked the so-called green laws, due to delays in development that contributed to a slowing down of economic activity (Kidd & Retief, 2009:54).

Screening often entailed developers without in-house EIA experience, approaching provincial authorities informally, who subsequently use considerable discretion to establish the EIA requirements for the activity (Wood, 1999:96). Anecdotal evidence suggests that these decisions were highly dependent on the specific officer approached at the decision-making authority, as well as internal provincial guidelines, especially regarding the empowerment of the officials.

In the Western-Cape, which processed the third-highest number of applications under the 1997 EIA Regulations (65 per month) an attempt was made to keep the potentially large number of EIA applications manageable. The provincial Department of Environmental Affairs and Development Planning have developed, in terms of the law, which is debateable as discussed below, a two-step scoping process. In what is often referred to as the first or screening stage, a developer must complete an application form and checklist in order to adequately describe the project and its anticipated environmental effects in order to facilitate a first level decision. 60% of all applications were approved on the basis of this application form, which can be seen as a form of exemption. In the second stage, a genuine scoping report is prepared. Due to the fact that the 1997 EIA Regulations allowed for a decision to be made at this point to continue with the activity, 30% of all projects were approved on the basis of this scoping report. Roughly 10% of all projects had to continue with the process into the EIA or detail phase and authorisation was made on the basis of a full EIA report (Stærdahl *et al*, 2004:7).

Although the Western Cape process allowed for a checklist approach, which enhanced screening of EIA in the province, the checklist itself was not always aligned with the umbrella legislation, such as the 1998 NEMA (SA, 1998). For example, the checklist allowed for exemption to be applied from investigating alternatives, which is against the NEMA's requirements for EIA. This left room for abuse of the process by both developers and interested and affected parties with a business agenda and numerous appeals. As mentioned above, the checklist approach should ideally have been activity-specific, with the respective checklists tailored according to the requirements of the specific activity.

All too often there is not a clear distinction between screening, scoping and the assessment of environmental impacts. This can jeopardise the integrity of the entire environmental assessment

process as proponents attempt to avoid undertaking a full environmental assessment by adding more information than is necessary into the screening or even the scoping phase (DEAT, 2002a:18). This was a procedural weakness of the 1997 EIA Regulations where final authorisation could be obtained after completion of the scoping phase. This also often happened with the exemption process, where substantial and frequently detailed reports were submitted as part of the exemption process. The aim of the exemption process was to aid screening of listed activities where the specific proposal in question posed a relatively insignificant and manageable risk to the environment.

3.4.2 The 2006 EIA Regulations

The 2006 EIA Regulations make use of an inclusive list-based approach with thresholds for screening purposes, which then mainly requires pre-application screening to take place. An application for authorisation (formal EIA) is triggered if the proposed activity is included in one of two schedules to the 2006 EIA Regulations. The first schedule lists activities for which an initial assessment, called a Basic Assessment must be undertaken before an environmental authorisation may be issued (SA, 2006b). The second schedule identifies activities for which a thorough EIA process is required (SA, 2006c). Theoretically the nature, extent and location of the activities determine the schedule they are placed in (Swanepoel, 2008:3). This aims to address some of the shortcomings of the list-based screening approach identified by Jones (1999:204) and DEAT (2002a:18).

3.4.3 Issues generic to both EIA regimes

It is generally recommended that a developer should initially be advised by an environmental consultant, or if available, in-house EIA experts on the environmental legal requirements of a new proposal. However, the final decision remains with the environmental authority (Retief, 2006:10).

If a proposed activity does require formal environmental authorisation, the proponent has to appoint an independent environmental assessment practitioner (EAP) to complete all required forms, compile all relevant reports and facilitate all forms of stakeholder engagement in support of the application (Swanepoel, 2008:3). Conversely, if no EIA was triggered, then no EIA was legally required. Even though the decision-making authority has the final say, proponents seldom went to the authorities for the confirmation of "No EIA required".

A more detailed discussion of screening under NEMA will appear in the following chapters.

3.5 Conclusion

EIA is the investigation carried out to determine a proposed project's environmental impacts according to specific criteria, identifying significant environmental effects and suggesting mitigation measures to reduce or remedy those effects. It enables decision-makers to make an informed decision based on the likely consequences of a project's impacts and the appropriate mitigation measures. Most EIA systems comprise of screening, scoping, public participation, a report, decision-making and monitoring.

Screening forms part of the early planning and design stages of the EIA process, carried out prior to EIA to determine the need, and if required, the level of assessment required for a proposal. Screening aims to make the potentially time-consuming EIA process more efficient. A weak screening mechanism results in too many projects subjected to formal EIA or certain high impact projects not requiring EIA.

There are several approaches that can be used to classify development proposals during screening. These include initial consultation, list-based approaches (inclusive and exclusive), including listed sensitive areas, thresholds, preliminary evaluation, decision support systems and checklists, decision-maker's discretion, screening criteria and screening matrices.

Screening in South Africa features as follows:

South Africa had a two-stage screening process under the 1997 EIA Regulations. The first was a legal judgement made with respect to the list of projects and activities requiring EIA and the second was a decision based on the information contained in the scoping report. Very few thresholds to eliminate minor activities and no classification according to area sensitivity resulted in a very large number of projects requiring formal EIA when compared to other countries.

The 2006 EIA Regulations make use of an inclusive list-based approach with thresholds for screening purposes, which then mainly requires pre-application screening to take place. Formal EIA is only triggered if the proposed activity is included in one of two schedules to the 2006 EIA Regulations. Theoretically the nature, extent and location of the activities determine the schedule

they are placed in. This aims to address some of the shortcomings of the list-based screening approach.

The next chapter highlights the impacts of the change of screening mechanism between the 1997 and 2006 EIA Regulations as well as the way the exemption route features in the two EIA regimes.

Chapter 4: The screening experience in South Africa

This chapter will address research sub-question 2. The literature survey part will address this question on a national level. The Free State aspects of research sub-question 2 follows from the data analysis.

The question to be addressed in this section is:

To what extent do exemptions feature in the 2006 EIA Regulations compared to the 1997 EIA Regulations?

In Chapter 3, screening was discussed in relation to the larger EIA process. It was also put into a South African context. Environmental Minister Marthinus van Schalkwyk mentioned that the promulgation of the 2006 EIA Regulations will result in 20% fewer applications being submitted to the environmental authorities on provincial and national level (Van Schalkwyk, 2006:2).

Since the granting of exemption from formal EIA for activities with low to insignificant impacts can be seen as a practical form of screening, this chapter will highlight the way in which exemption features in the two EIA regimes.

It can also be argued that any EIA process where exemption from the process has to be granted on a regular basis has a weak screening mechanism. Therefore, the shortcomings of both the 1997 and 2006 EIA Regulations will be investigated, along with suggestions for improvement.

The following is an outline of the sections contained in this chapter:

Section 4.1 discusses the various routes available, including exemption, as part of the EIA process for a project to follow and Section 4.2 shares the South African experience under both the 1997 and 2006 EIA Regulations. This is followed by a discussion on the shortcomings of the 1997 EIA Regulations in Section 4.3. The 2006 EIA Regulations are also critically analysed and shortcomings identified in Section 4.4. Suggestions for improving the system are also included.

4.1 The exemption experience in South Africa

Under the 1997 EIA Regulations, South Africa technically had a two stage screening process, as mentioned above in Section 3.4.1. The first stage of screening was a legal judgement that had to be made with respect to the list of projects and activities triggering EIA and if unsure, a pre-application consultation was held with the relevant authority. Numerous exemptions from the EIA Regulations were granted by provincial authorities, on a case-by-case basis, to projects which obviously triggered formal EIA, but where the predicted environmental impacts were either very low or insignificant (Wood, 1999:96). Exemption was granted in terms of regulations 28A of the Environment Conservation Act, 73 of 1989 (SA, 1989). The decision to grant exemption from the EIA Regulations typically followed the initial consultation with the authority. This decision was taken based on the decision-maker's discretion as to whether it was likely that authorisation would be granted. Most exemption projects obtained authorisation shortly after the first stage and comprised of advertising the process. In the Free State, this amounted to 10.6% of all applications.

The second stage screening occurred after submission of the scoping report where the majority of remaining projects obtained authorisation, with authorisation, after it had been determined that no further assessment would be required. For these projects, the scoping report fulfils the role of the final EIA report upon which authorisation is based. For the remaining few activities, further assessment and an Environmental Impact Report (the final report to be submitted), were required (Wood, 1999:96). In the Free State sample data for the 1997 EIA Regulations, the ratios appeared as follows:

- Exemption – 10.8%;
- Scoping – 88.8%; and
- Full EIA – 0.3%.

As can be seen, very few projects went the full route provided for in the Regulations since the Regulations allowed for projects to obtain authorisation after the scoping phase. Graphically, it can be represented in Figure 4.1 below. Figure 4.2 on page 45 illustrates the difference in EIA route taken under the 2006 EIA Regulations.

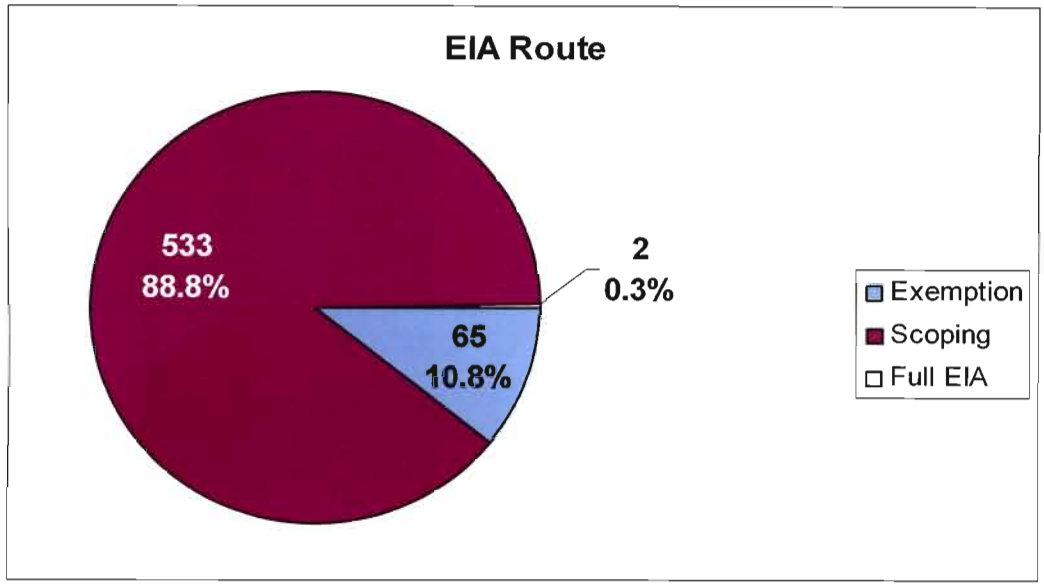

Figure 4.1: Number of projects according to EIA route taken under the 1997 EIA Regulations.

Under the 1997 EIA Regulations it often happened that certain trivial activities, especially in urban areas, were exempted from undergoing formal EIA by means of provincial memoranda of understanding and other less formal means. Anecdotal evidence of this is the installation of an additional underground storage tank for a service station in Port Elizabeth, which was approved on submission of a letter to the authorities.

Stærdahl *et al*, (2004:7) on the other hand, are of the opinion that, although theoretically contained in the 1997 EIA Regulations, in practice there was no room for a proper screening process. As an example, according to the Regulations, all changes in land use, no matter what the scale thereof, were subject to an EIA and the regulated process had to be followed up to the submission of a scoping report at the least. In the study sample of Free State data, this amounted to 19.2% of the projects. A similar situation existed with the construction of masts for telecommunication purposes, which in the vast majority of cases were for cellular telephone masts. In the study sample of Free State data, this accounted for 39.2% of applications. A tremendous amount of time and money could have been saved if EIAs for these activities could have been screened according to location. A scoping checklist that captured all the legal requirements could have added value in this instance. This is in line with the purpose of screening according to Claassen *et al* (2003:4).

4.2 Differences in the exemption process

There are a number of differences between exemption under the 1997 EIA Regulations and under the 2006 EIA Regulations. Firstly, it revolves around what can be exempted and secondly the role of the exemption decision in the process.

4.2.1 How far can exemption go?

Under the 1997 EIA Regulations it was possible to be exempted from the entire EIA process. This meant that a project with a known and limited or even insignificant environmental impact, which still triggered formal EIA, could be granted exemption from the entire EIA process. This usually meant that the applicant, or his consultant, would submit an application form along with cursory environmental information related to the project and its impacts. This could take on the form of a checklist or cursory EIA Report. In later years it usually entailed an advertisement for Interested and Affected Parties (I&APs) to register and comment, submission of a report or checklist and advertisement of the authorisation.

This option is not available as part of the 2006 EIA Regulations. It is only possible to be exempted from certain sections of the EIA Regulations as per Regulation 51(1) of GNR 385 of 21 April 2006 (SA, 2006a). This is also catered for in an application form released by National DEAT, which differs slightly from the normal application form. This form specifically caters for the exemption process and specific mention should be made to the sections from the EIA Regulations that the applicant wants to be exempted from.

There is a limitation as to which sections of the Regulations an activity can be exempted from under the 2006 EIA Regulations. One can only apply for exemption from sections that are not contained in the NEMA or any of its amendments. For example, one cannot apply for exemption from investigating alternatives as it is contained in section 24(7)(a&b) of the NEMA.

4.2.2 The role of the exemption decision in the process

Under the 1997 EIA Regulations, the granting of exemption was seen as the Record of Decision (ROD) and the final authorisation. This exemption decision contained the conditions of approval and all other contents normally expected in an ROD.

Under the 2006 EIA Regulations, the exemption process basically tailors the process according to the project's needs. It is an exercise that requires intimate knowledge of the applicable legislation.

Whereas an exemption decision under the 1997 EIA Regulations was considered the final authorisation, an exemption notice under the 2006 EIA Regulations merely provides permission to continue with a tailored process.

4.2.3 Challenges and problems related to the exemption process under the 2006 EIA Regulations

The Basic Assessment Report allows an applicant to apply for exemption from the entire public notification process. This is however clearly not in line with the requirements of the NEMA in section 24(7)(d) and therefore illegal.

When dealing with applications for exemption from certain sections of the 2006 EIA Regulations, anecdotal evidence suggests that some provincial authorities appear to fall back on the familiar way of granting exemption as was the case under the 1997 EIA Regulations, by including the exemption notice with the environmental authorisation. This is also problematic as the exemption decision needs to be advertised and left open for appeal.

If appealed against, when the exemption notice is issued together with the final authorisation, this would place both the applicant and the authority in a difficult position. The tailored and shortened process has been completed, which means that the entire process might have to be redone if the appeal is successful. However, as the authority already granted permission for that to continue, its neutrality when viewing an appeal can be questioned.

From the Free State study sample it appears that very few (1 out of 186) projects followed the formal exemption route. This is not surprising given the legal difficulties mentioned above with the process. It is however expected that with substantial amount of projects applied for under Basic Assessment, some of the exemption boxes would be checked, even though this might not be the legally correct route. The graphic breakdown of the various routes available is illustrated in Figure 4.2 in Section 4.4.3.

4.3 Shortcomings of the 1997 EIA Regulations

As a first attempt to legislate EIA, some shortcomings could be expected in the 1997 EIA Regulations itself, as well as its implementation. Valuable lessons were however learnt in almost nine years of ECA EIA experience. When the EIA Regulations under NEMA were implemented, DEAT acknowledged several inadequacies with regard to the 1997 Regulations (Van Schalkwyk, 2006b:6). These mainly revolved around lack of clarity regarding implementation and government capacity.

4.3.1 Inflexible approach

According to Kidd & Retief (2009:3) legislating EIA has led to it becoming increasingly prescriptive and dictatorial in relation to the defined legal mandate. This differs quite significantly from the early years of applying environmental assessment where the need for flexibility and issues-driven approaches were fundamental (Kidd & Retief, 2009:3). For companies where environmental issues are included in the earliest phases of design, the EIA process in South Africa has merely become a rubber stamp. The EIA process itself does not often force changes on the design that is put forward for approval by authorities, as it is usually the design that best balances society, profit and planet.

The process was lengthy and inflexible with too many authority stops and decision points, resulting in unjustified and unnecessary time and costs. A weakness in the process was allowing an application to be approved after only the scoping stage. This is contrary to the purpose of scoping, which is to ensure that the study is focused enough, to examine only the significant issues and reasonable alternatives (DEAT, 2002c:11).

It has been argued that the 1997 EIA system never formally allowed for authorisation after scoping only and that it was a practice adapted by the competent authorities to avoid or circumvent the

additional delay and cost of the full EIA route. This means that the practice should be blamed, rather than the regulatory provisions. However, when one looks at the Application Procedure process in DEAT's 1998 EIA Guideline Document (DEAT, 1998:18), it clearly illustrates that final authorisation is possible after scoping. It is subsequently still the opinion of the author that it was a regulatory weakness.

4.3.2 Exclusion of mining activities

A significant shortcoming of the 1997 EIA regulations was the exclusion of mining, dealt with by s39 of the Minerals Act 50 of 1991 (SA, 1991), which makes provision for a mining authorisation based on an environmental management programme report, which includes an EIA. The Department of Minerals and Energy is the leading agent for implementing this legislation (Rossouw *et al*, 2003:209). The Minerals Act was superseded by the Mineral and Petroleum Resources Development Act 28 of 2002, in which s39 also requires an environmental management programme based on an EIA (SA, 2002). With the promulgation of the EIA regulations under NEMA (SA, 2006a), mining activities have been included. Mining activities was indicated to fall under the EIA regulations from 1 April 2007, when finally there will be one EIA process governing all potentially environmentally significant projects in South Africa (Van Schalkwyk, 2006b:22).

4.3.3 Too many applications requiring EIA

The 1997 EIA regulations specified a set of activities subject to EIA. However, very few thresholds were included that could eliminate minor activities, and no classification of affected environments to exclude non-sensitive areas, was provided (Claassen et al, 2003:2; Wood, 1999:54).

Wide interpretation of activities resulted in inconsistent application by authorities and industry (Scholtz, 2006:11). Too many small scale or even insignificant activities bogged down the EIA system. This resulted in many approvals being granted via the exemption route (Claassen et al, 2003:2). In the sample obtained as part of this study, exemption applications accounted for 10.6% of all applications under the 1997 EIA Regulations.

Inadequate provisions for public consultation and a lack of guidance on the implementation thereof was often abused by industry and NGOs alike for own gain. Enforcement measures were generally

seen as very weak and the content, quality, and independence of EIA reports were sometimes problematic (Van Schalkwyk, 2006b:6).

Concerns have been noted that the process could potentially result in the delay of realising development opportunities or even the cancellation of projects due to lost windows of opportunity. This was echoed by former President Thabo Mbeki (Kidd & Retief, 2009:54).

4.3.4 No provision for post-authorisation monitoring

The 1997 EIA regulations focused exclusively on the EIA's role in decision-making. Similarly, the 1998 Guideline Document on the implementation of these Regulations provided virtually no guidance on post-decision implementation. The 1992 IEM Guidelines were very specific about the necessity for monitoring and auditing to be undertaken. It was therefore surprising that neither the 1997 EIA regulations, nor its corresponding guidelines refer to monitoring (Wood, 1999:56). Thus, while the 1992 IEM Guidelines stressed impact management, the EIA regulations stopped short of project implementation (Hill, 2000:52).

4.3.5 Government capacity

Government capacity is one of the key issues influencing the efficiency of an EIA system. This is not only related to the number of staffing at the various departments compared to the number of EIAs submitted, but also to the level of qualification, training and experience of personnel (Kidd & Retief, 2009:56).

Most environmental departments at provincial level noted staff shortage as a major reason for their inability to successfully implement the EIA Regulations. A large part of the staff complement working in these departments had five or less years of work experience (Duthie, 2001:219). As an example, in 2008 the Free State Department of Tourism, Environmental & Economic Affairs (FS-DTEEA) appointed 7 new assessing officers on senior officer level to the Environmental Impact Management sub-directorate specifically to process EIA applications. In terms of number of people, this was a positive move. However, the average level of work experience of the newly appointed personnel in this field is 4 years. It was also confirmed that three of the newly appointed officers have subsequently left the Department again (Krynauw, 2008). This high level of staff turnover is of

concern as it results in a loss of experience and potentially incomplete handover of project files from one official to another.

In most provincial departments, virtually all the available time of the professional staff is spent on report and process review leaving almost no time for monitoring and enforcing conditions of approval. Anecdotal evidence suggests that the only time that assessing officers visited a project site was for the mandatory site visit during the EIA process. No enforcement afterwards took place, apart from requests for letters at certain project milestones.

4.4 Shortcomings of the 2006 EIA Regulations

The 2006 EIA Regulations are by no means perfect. As can be seen below, there are numerous problems with the process, but it is a great improvement on the 1997 EIA Regulations. These improvements need to be mentioned before the teething problems are discussed.

4.4.1 Improvements on the 1997 EIA Regulations

South African EIA legislation (under NEMA) requires EIA for activities at project and not strategic level (SA, 2006a). The 2006 EIA Regulations provide for two activity lists that identify activities that trigger formal EIA. Listing Notice 1 in Government Notice R.386 contains activities that require a Basic Assessment (SA, 2006b). Listing Notice 2 in Government Notice R.387 lists activities with potentially more significant environmental impacts, which require a Full Assessment (SA, 2006c). This is an improvement on the 1997 EIA system in that projects with a lower perceived environmental impact requires a less onerous authorisation route.

Improvements include much clearer pre-application screening that points out the assessment route to follow, as well as published guidance on the EIA process (SA, 2006e), public participation (SA, 2006f), alternatives (SA, 2006g) and Environmental Management Frameworks (SA, 2006h), even though these are still in draft format.

Another improvement on the 1997 EIA system is the removal of the possibility for final authorisation after submission of a scoping report. This restores scoping to its proper role and place.

Formalising amendments to and transfers of environmental authorisations is a definite improvement on the 1997 EIA system. It often happens that a factory or company changes ownership, which means that the authorisation should also be transferred to the new owners in order to ensure their compliance with the authorisation. It often also happens that a scope change occurred between the time when the authorisation was granted and operation of the activity commences, which might have rendered the scope of the triggering activity outside of that authorised. Numerous amendments to RODs took place under the 1997 EIA Regulations, but it was not legally catered for. Under the 2006 system, this has been formalised.

4.4.2 Uncertainty in execution of certain parts of the 2006 EIA Regulations

Govender (2006:11) predicted that with the promulgation of the 2006 EIA Regulations, there would be some teething problems due to the system being new and that it would take time for consultants, the public, proponents and especially decision-makers to adapt to the new system.

Anecdotal evidence of this include an exemption process (still technically possible, but often easier said than done and a very legally intensive exercise) and an amendment to an authorisation both taking almost a year and a half to complete.

4.4.3 New screening mechanism

It is interesting to note that, while the original section 24 of the NEMA triggered EIA on the basis of a combination of listing activities and the classical formula of activities that may significantly affect the environment, the new regime under the amended section 24 relies solely on lists (Glazewski, 2005:247).

One surprising aspect with regard to the 2006 EIA Regulations is the substantially greater number of listed activities compared to the identified activities under the 1997 EIA Regulations. The reason for this surprise is because amongst others, the 2006 EIA Regulations focused on the redesigning of the ECA screening criteria in order to reduce the number of applications by 20% (Van Schalkwyk, 2006:2). The aim is to address this by introducing more detailed activity descriptions and thresholds (Kidd & Retief, 2009:56).

Even though it can be argued that the number of activities only requiring Basic Assessment would further reduce the burden on the competent authorities, the significance thereof is questioned by Kidd and Retief (2009:29). In the NEMA EIA data (as presented in Figure 4.2) obtained from the Free State it becomes apparent that this might indeed be the case as 55.9% of projects in the study sample required a Basic Assessment, compared to 34.4% triggering a full EIA requiring scoping and detailed assessment.

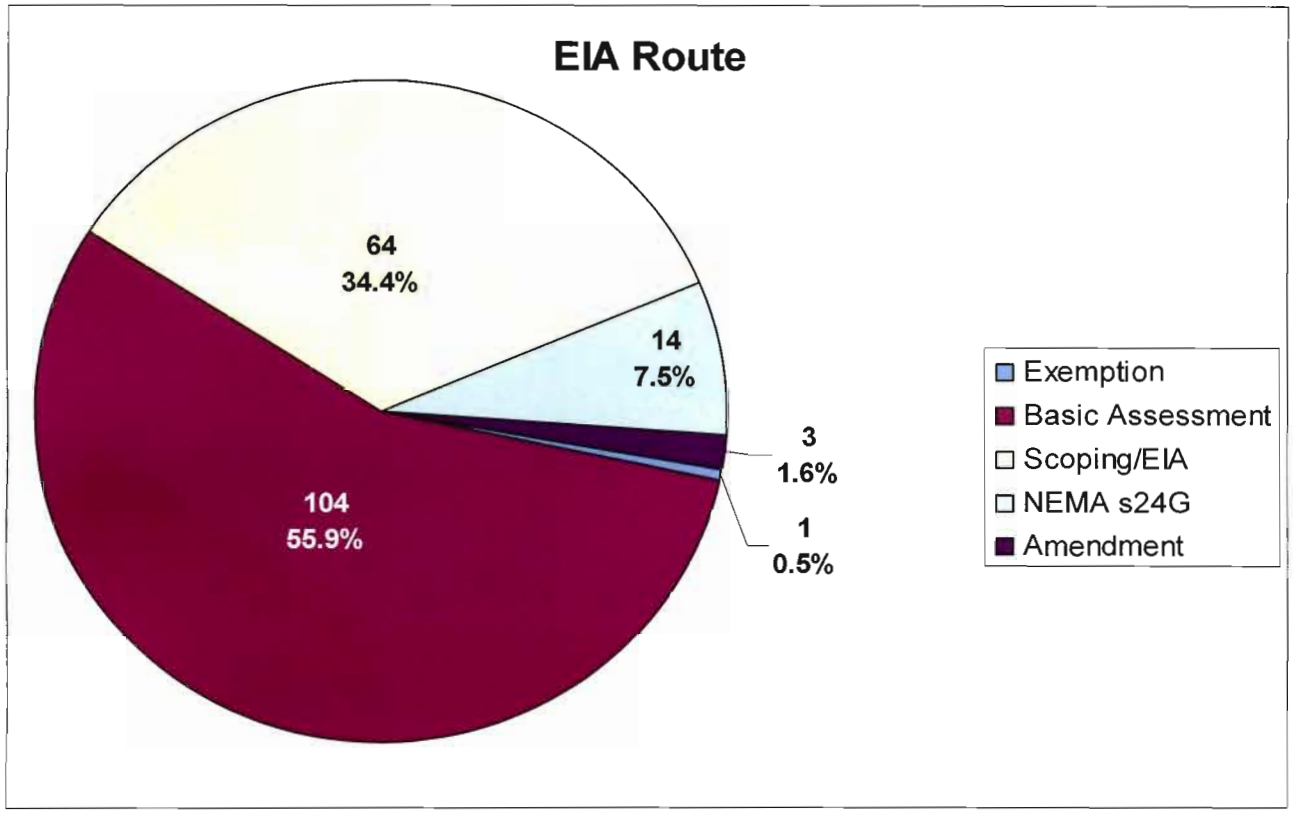

Figure 4.2: Breakdown of activities under the 2006 EIA Regulations according to route taken.

Essentially a Basic Assessment requires three interfaces with the authority: a pre-application consultation, site visit and an evaluation of the Basic Assessment Report in order to make a decision of granting authorisation or not. A full EIA requires four interfaces: pre-application consultation, site visit, decision on the Scoping Report and final decision for authorisation based on the EIA Report. It can therefore be argued that, because more than half of all projects need to follow the less onerous route and require fewer interfaces with government, the administrative burden on the authorities is reduced.

4.4.4 Problematic triggering activities

Five months into the 2006 EIA Regulations, Welman (2006:10) was of the opinion that the list-based activity approach of NEMA EIA does not always conform to the aim of quicker, simpler, better. Many of the listed activities are not in line with the environmental impact posed by such activities and in fact increase the administrative burden on both the specific industry and the authorities for such activities. An example of this is the construction of a 40MW substation tying into existing high-voltage lines and converting the electricity to medium voltage. Under current legislation, this triggers activity 1(a)(i) of GNR 387 of 21 April 2006, which requires a full EIA to be conducted (SA, 2006c). The activity has very well known and predictable impacts and yet, despite its location inside an access-controlled and remote industrial area, a full EIA is required. The effort expended in the assessment is not commensurate with the expected impact.

Another concern of the 2006 EIA Regulations raised by Kidd and Retief (2009:30) is the limits attached to certain thresholds and their apparent arbitrariness. This can be illustrated by the coal and ore storage activities listed in the Regulations. When ore is stored in quantities between 1 000 and 100 000 tons and coal between 250 and 100 000 tons respectively, a Basic Assessment is triggered according to activities 1(b) and 1(c) of GNR 386 of 21 April 2006 (SA, 2006b). However, if a proponent wants to construct facilities for the storage of more than 100 000 tons of ore or coal, no assessment would be required at all, seeing that these activities are omitted from the full EIA activity list. That does not make sense at all.

Numerous uncertainties surround the interpretation of various activities. One example is activity 1(j) from Listing Notice 2, which is for *the construction of facilities or infrastructure, including associated structures or infrastructure, for the bulk transportation of dangerous goods using pipelines, funiculars or conveyors with a throughput capacity of 50 tons or 50 cubic metres or more per day* (SA, 2006c). The questions requiring legal interpretation in this one activity are as follows:

- What is *bulk* transportation? Does it include pipelines from a tank farm to a loading bay or is it only for delivery of large quantities of goods to an end-user? If this activity includes *any* pipeline transporting dangerous goods over the threshold quantities, any chemical company would require a major EIA for even a small modification on its site requiring new piping. This is counter to quicker, simpler, better.
- When transporting liquids with a density close to that of water, tons and cubic metres are basically interchangeable, but when gases are being transported, the difference can be significant. Which unit is then supposed to be used?

4.4.5 Suggestions for improving the 2006 EIA process

One cannot criticise without providing some form of constructive advice for improvement. Welman (2006:11) suggested that the current EIA milieu can be improved by overhauling the two Listing Notices due to the numerous uncertainties surrounding legal interpretation of activities. It seems that not only industry sees this as a problem. SA-DEAT held one of several workshops on 14 and 15 November 2006 in Benoni. This one was called the NEMA Regulations Implementation Workshop nr. 4. It was attended by delegates from all the provincial authorities and the aim of this workshop was to amend or remedy the activity lists in order to make the process more streamlined (Krynauw, 2006). Initial feedback from this workshop appeared encouraging.

On 13 June 2008 an amended set of proposed draft EIA Regulations, along with amendments to the NEMA was published in the Government Gazette (SA, 2008a; SA, 2008b; SA, 2008c). This included a drastic overhaul of the Listing Notices as well as the thresholds for many of the triggering activities.

In the opinion of the author, this is a step in the right direction. Several activities were also moved from the Listing Notice requiring full EIA to the Basic Assessment list. This brings the required level of detail in line with the expected environmental impact of those activities. Several definitions that used to be cloaked in confusion and required extensive legal input as part of the screening in the 2006 EIA Regulations were updated to provide clearer guidance. The amendment of certain thresholds also appears encouraging and allows for a more sensible approach to EIA.

DEAT allowed time for extensive commenting on the proposed amendments and indications are that, those comments especially from industry were taken to heart. Indications are that another round of comments will be allowed based on the incorporation of the previous round of comments.

Another suggestion for improvement of the screening process is to have better capacitated officers assessing project proposals. This can be achieved by a twofold approach. The first suggestion is to enhance the retention of existing staff. This will ensure that experience is not lost and will also assist in the on-the-job training requirements of new personnel. Retention of staff can be achieved via a plethora of means, much of which is department and office-specific. The second suggestion is to attract suitably qualified new personnel. A better equipped and trained personnel force will assist

greatly screening out those projects where the formal, regulatory EIA process will not add value and subsequently reduce the administrative burden on Government and industry.

Further suggestions, which have a more long-term focus, would be to enforce the strategic aspects of the 2006 EIA Regulations, such as proclaimed geographical areas and Environmental Management Frameworks (EMF). This would lead to improved and efficient environmental management for the country as a whole, as well as an improved EIA process that will not be seen as a barrier to development (Welman, 2006:12).

4.5 Conclusion

As a first attempt to legislate EIA, some shortcomings could be expected in the 1997 EIA Regulations itself, as well as its implementation. Valuable lessons were however learnt in almost nine years of ECA EIA experience. When the EIA Regulations under NEMA were implemented, DEAT acknowledged several inadequacies with regard to the 1997 Regulations (Van Schalkwyk, 2006b:6). These were an inflexible approach that forced all applications to follow the same assessment route (and detail as well), the exclusion of mining activities, a lack of thresholds resulting in too many applications, no provision for post-authorisation monitoring and a lack of government capacity.

The 2006 EIA Regulations are a great improvement on the 1997 EIA Regulations, but by no means perfect. As discussed, there are numerous problems with the process. It was predicted, and subsequently experienced that, with the promulgation of the 2006 EIA Regulations, there would be some teething problems due to the system being new and that it would take time for consultants, the public, proponents and especially decision-makers to adapt to the new system.

Compared to the 1997 EIA system, the 2006 system has a substantially greater number of listed activities. It is surprising because the 2006 EIA Regulations focused on the redesigning of the ECA screening criteria in order to reduce the number of applications by 20%.

One of the major concerns with the 2006 EIA Regulations is the large amount of legal interpretation required on many of the triggering activities where activity descriptions are ambiguous. Thresholds have been added to many of the triggering activities, which assist in reducing applications in many instances, but make no sense in others. Many of the thresholds have been described as having a high level of arbitrariness.

Under the 1997 EIA Regulations, the granting of exemption was seen as the Record of Decision (ROD) and the final authorisation. This exemption decision contained the conditions of approval and all other contents normally expected in an ROD.

In the Free State study sample 10.8% of the applications submitted for EIA, followed the exemption route. This is not considered to be high, especially when exemption is viewed as a form of screening.

Under the 2006 EIA Regulations, the exemption process basically tailors the process according to the project's needs. It is an exercise that requires intimate knowledge of the applicable legislation.

Under the 1997 EIA Regulations, projects with very low to insignificant anticipated impacts were screened out via the exemption process and therefore the granting of exemption was considered the final authorisation. Conversely, an exemption notice under the 2006 EIA Regulations merely provides permission to continue with a process that is tailored to the anticipated environmental requirements associated with the proposed project.

In the Free State sample, only 1 out of 186 projects in the study sample formally applied for exemption. This is very low and most likely due to the complicated process that one has to go through to obtain exemption from certain sections of the EIA Regulations. It is also expected that a large number of the projects that followed the Basic Assessment route applied for exemption from completing certain sections of the report. This would not typically be reported as an exemption project and might be legally challenged.

Chapter 5: Data Analysis – Number of Applications

This chapter addresses research sub-question 3. The literature review provided the data on national level for the analysis as contained in relevant literature. The analysis of the number of applications in the Free State Province emanates from the survey conducted as part of this research.

The question to be addressed in this section is:

> Have the 2006 EIA Regulations succeeded in reducing the number of EIA applications?

This chapter explores whether the 2006 EIA Regulations achieved the national target of a 20% reduction in EIA applications. In terms of the 2006 EIA Regulations, data reflect the first 22 months (between July 2006 and May 2008) of enactment.

The following is an outline of the sections contained in this chapter:

> Sections 5.1 and 5.2 highlight the number of EIA applications processed in South Africa under the 1997 and 2006 EIA Regulations respectively. An international comparison is described against yearly averages in Section 5.3. The Free State Provincial perspective is presented in Section 5.4 after which conclusions are made in Section 5.5.

5.1 Number of applications – 1997 EIA Regulations

The efficiency of an EIA system is directly related to the number of EIAs submitted and the available administrative capacity to evaluate and process these applications. During the announcement of the new EIA Regulations in 2006, Minister Marthinus van Schalkwyk highlighted that the EIA system under the 1997 EIA Regulations became bogged down by over-exhaustive work on relatively minor applications (Swanepoel, 2008:1). This was illustrated by the more than

2000 applications received in 2005 in the Gauteng province alone for upgrades to or construction of telecommunication masts (Van Schalkwyk, 2006a:2).

Information from DEAT as referenced in Kidd and Retief (2009:57) and presented in Figure 5.1 shows the number of EIA applications per province received between September 1997 and March 2006. Nationally this indicates a total of 43 423 applications with an average of 425 per month or more than 5 000 per year.

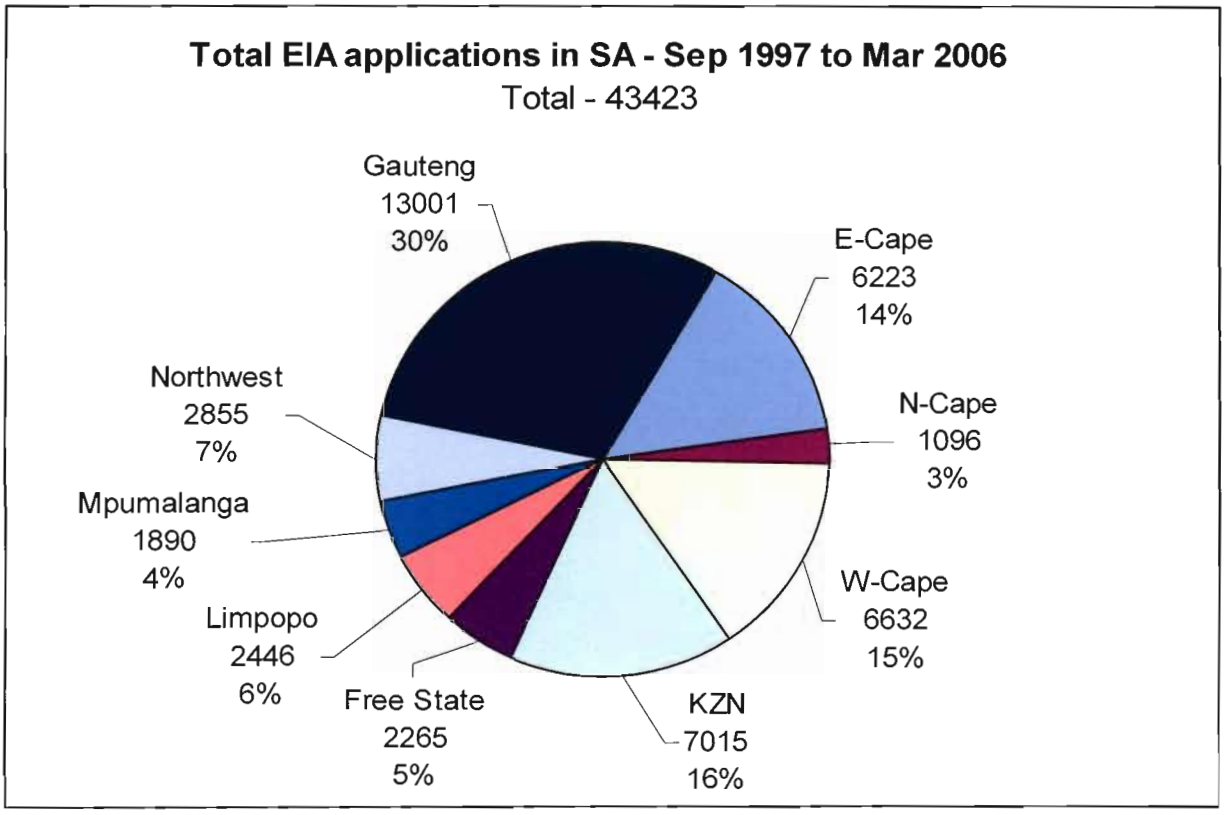

Figure 5.1: Total EIA applications in South Africa between September 1997 and March 2006.

The data provide the basis for the comparative analysis between the 1997 and 2006 EIA Regulations. The following sections therefore explore the number of applications under the new 2006 regime.

5.2 Number of applications – 2006 EIA Regulations

Nationally, between July 2006 and the end of March 2008, environmental authorities received a total of 6 423 applications (of which 3 399 of were pending) in terms of the 2006 EIA Regulations. This equates to 306 applications per month or slightly over 3 400 per year (Swanepoel, 2008:1).

As mentioned earlier, a particular feature of the 2006 EIA Regulations is the substantially greater number of listed activities compared to the identified activities under the 1997 EIA Regulations. The reason for the larger number of activities is the introduction of more detailed activity descriptions and thresholds (Kidd & Retief, 2009:56; Van Schalkwyk, 2006:2). It is, however, obvious that from a screening perspective the number of activity descriptions is not an indication of the robustness of the screening mechanism.

From the data, the 2006 EIA Regulations appear to have been successful in meeting the target of a 20% reduction in EIA applications as predicted by the Minister, with the average monthly project load reduced from 425 (for the 1997 EIA Regulations applications) to 306. On a national level, this results in an approximate average reduction of 28% between the two EIA regimes. However, further interpretation of the data in Section 5.3 aims to present an international comparative perspective.

5.3 International comparison

The international literature distinguishes between EIA systems in developed and developing countries (Lee and George, 2000), arguing that they represent distinctly different institutional and developmental contexts. In terms of statistics dealing with the number of EIAs submitted, the majority of the literature emanates from developed countries, with some data for so-called less developed countries of Eastern Europe. Table 5.1 on page 53 provides a comparative analysis on the yearly average of the number of EIA applications, between South Africa and other countries in Europe for which data were readily available (Glasson *et al*, 1997:455; Jones, 1999:234; Kidd & Retief, 2009:56; Nielsen *et al*, 2005:35). It is evident that South Africa deals with significantly more EIA applications per year compared to other countries. Moreover, considering that most of these countries have substantially more resources and capacity available, the pressure placed on the South African EIA system is evident. Even though a significant reduction in applications has been

realised with the introduction of the 2006 EIA Regulations, it is evident from Table 5.1 that this is still extremely high.

Country	Number of EIA applications (per year)
Denmark	60
Netherlands	70
United Kingdom	500
Germany	1 000
Kazakhstan	3 000
Russia	3 000
South Africa (pre-July 2006)	>5 000
South Africa (post-July 2006)	3 600

Table 5.1: EIA project load in different countries

Much of the critique levelled against the efficiency of the South African EIA system could be attributed, directly or indirectly, to the large number of EIA applications triggered by the screening criteria. It is significant to note that even with the 20% reduction under the 2006 EIA Regulations, South Africa would still generate more applications that most countries. In terms of amount of applications, it is evident that South Africa is comparable with other 3rd world or developing countries like Kazakhstan and Russia.

5.4 Number of applications in the Free State

When looking at the Free State scenario, a total of 2265 applications was submitted between September 1997 and March 2006 (Kidd & Retief, 2009:57). This resulted in approximately 266 projects per year or 22 per month. According to the FS-DTEEA the sample obtained for the 2006 EIA Regulations under the NEMA represents approximately 70% of all projects received between July 2006 and May 2008 (Krynauw, 2008). Therefore a total of approximately 265 applications were submitted to FS-DTEEA under the 2006 EIA Regulations. This resulted in around 145 per year representing an average reduction of 46% between the two EIA regimes.

5.5 Conclusion

Based on the data available on national level (Kidd & Retief, 2009:57; Swanepoel, 2008:1) and the study sample obtained for the Free State, it is apparent that the average reduction in formal EIA applications has been reduced by more than the 20%, which means that the target set by national government has been achieved.

At national level the average monthly project load reduced from 425 to 306 applications, representing an average reduction of 28% between the two EIA regimes.

At a Free State provincial level scenario, the average monthly project load reduced from 22 to 12 per month representing an average reduction of 46% between the two EIA regimes.

Chapter 6: Data analysis

This chapter aims to address research sub-question 4 by means of data analysis.

The question to be addressed in this section is:

What has been the change in the types of activities subject to EIA under the 1997 and 2006 EIA Regulations respectively?

This chapter analyses the data according to type of project in order to be able to answer research sub-question 4. This analysis is particularly important since the re-defined listed activities have been one of the main foci of the revised 2006 Regulations under NEMA. Therefore, from a screening perspective it is important to gauge if the profile of activities subject to EIA has changed.

The following is an outline of the sections contained in this chapter:

Section 6.1 introduces the data. Thereafter, the major activities under each EIA system are discussed in Sections 6.2 and 6.3. Finally the data for comparable triggering activities is comparatively analysed in Section 6.4.

6.1 Introducing the data

The first part of the data analysis to be done after data cleanup was to compile a summary graph of all the projects that were submitted under the 1997 EIA Regulations, sorted according to the triggering activity type. This is represented in Figure 6.1 on page 57.

Similar graphs were compiled for activities under the 2006 EIA Regulations. Since there are two separate routes that a project can follow, depending on the triggering activity, different graphs were compiled for activities triggering Basic Assessment and activities triggering full EIA. These graphs are represented in Figure 6.2 on page 61 and Figure 6.3 on page 64 respectively.

6.2 *Summary of activities for the 1997 EIA Regulations*

Figure 6.1 represents the results from a sample of 600 projects under the 1997 EIA Regulations for the Free State. In order to achieve a 95% probability of representing the total population of 2265 applications a minimum sample of 331 would be required (Stephen and William, 1981). The sample is therefore deemed sufficiently representative of the total population.

6.2.1 Activities not represented in the study sample

In the study sample, 12 different activity types were represented out of a total of 23 listed activities. The following activities were not represented in the study sample:

- *1(b) – Construction of nuclear reactors.* This activity was not expected, except possibly as part of a downstream processing or handling facility at a gold mine where radio-active wastes might be handled;
- *1(e) – Marinas, harbours and structures below the high-water mark of the sea.* Not applicable to the province;
- *1(h) – Racing tracks for motor-powered vehicles and horse racing.* This activity was not expected to feature prominently as most of the facilities for this type of activity have already been developed;
- *1(i) – Canals, channels, diversion of river beds and water transfer schemes.* This activity was not expected to feature prominently. There has been no major irrigation or water transfer schemes developed in the Free State during the relevant period;
- *1(l) – Bulk abstraction and utilisation of groundwater.* It is expected that there might be several water users, including farmers, abstracting significant groundwater that were never the subject of an EIA;
- *1(o) – Explosive storage and testing facilities.* This activity was not expected to feature prominently as the mining houses all have long-established explosive depots serving their mines and the manufacturing facilities in the northern Free State have been established for several decades;

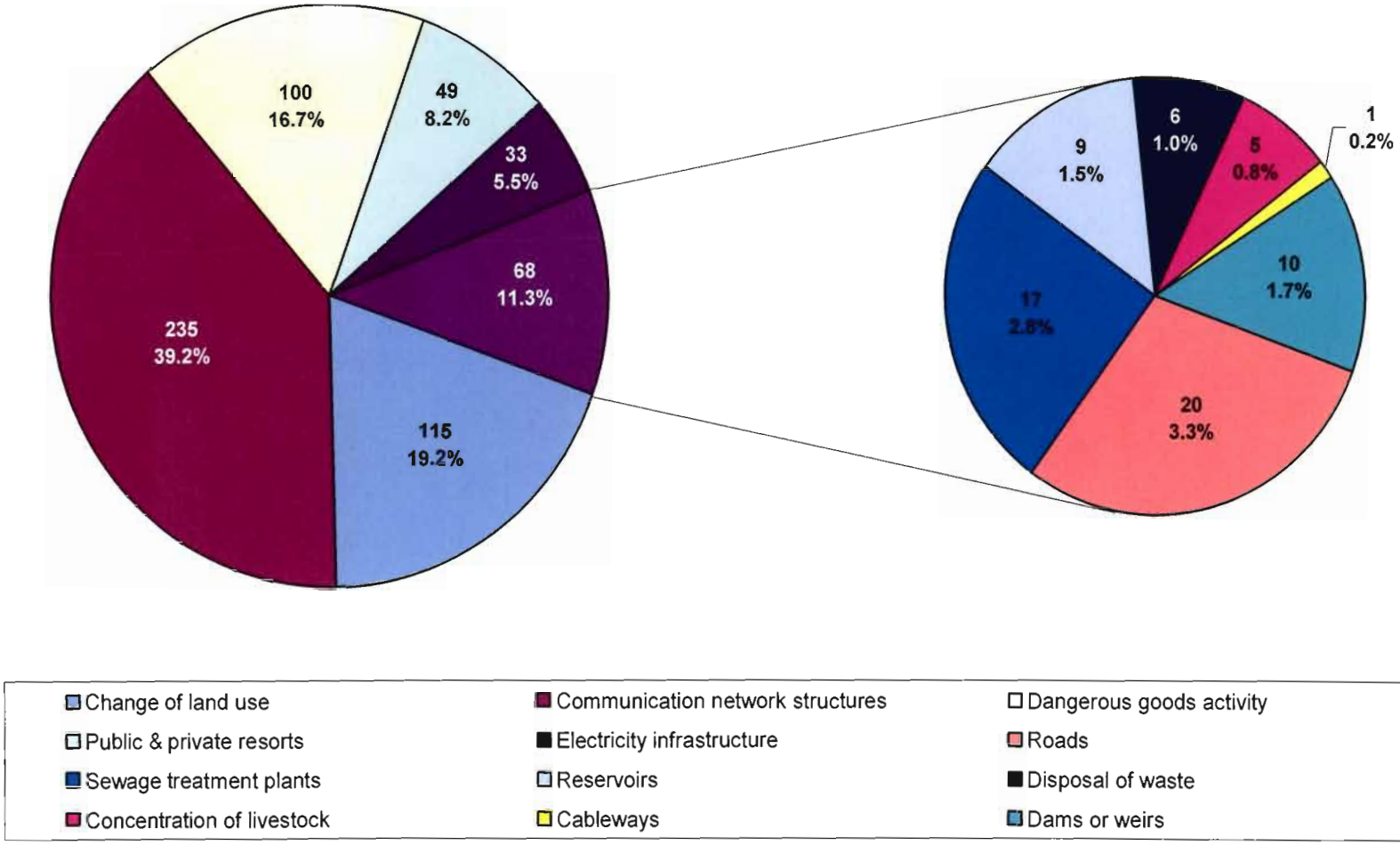

Figure 6.1: Total activity list under the 1997 EIA Regulations

- *4 – Intensive husbandry of alien species.* No prominent activities of this nature occurs in the province;
- *5 – Biological pest control activities.* No project of this nature initiated in the province;
- *6 – Genetic modification of organisms.* It is possible that proponents were conducting these activities unknowing that they require an EIA. Similar to Activity 1(l);
- *7 - The reclamation of land below the high water mark of the sea and in inland water including wetlands.* One could have expected to find this activity reflected in the sample. However, the difficulties in actually delineating wetlands were only addressed by DWAF in 2005 guidelines. Furthermore, this activity would most probably have combined with change in land use applications covered by Activity 2.
- *9 – Scheduled processes under the Atmospheric Pollution Prevention Act, 1965.* This activity was triggered during the almost 9 years of EIA under ECA. However, the reason why this activity did not show up in the study sample is because it was most often tied with activity 1(c) relating to dangerous goods. Most new activities or several upgrades triggering 1(c) triggered activity 9 as well.

6.2.2 Major activities from the study sample

As can be seen from Figure 6.1, five activities triggered EIA in almost 90% of all submitted projects. These were:

- Communication network structures (mainly cell phone masts) – 39.2%;
- Change of land use – 19.2%;
- Dangerous goods activities – 16.7%;
- Public and private resorts – 8.2%; and
- Electricity infrastructure – 5.5%.

6.2.3 Confirmation of results from literature

The results relating to communication infrastructure are supported by Kruger and Chapman (2005:55) in a study on EIA report quality in the Free State province. They found that projects

concerning communication networks (mainly towers or masts for cellular communication networks) and the handling and storage of hazardous substances were the primary listed activities in terms of number of applications received under the 1997 EIA Regulations in the Free State province. The large proportion of communication network activities, mainly masts for cellular telephone networks, found in the study sample also correlates well with what was reported nationally (Van Schalkwyk, 2006a:2). During 2005, in Gauteng alone, more than 2000 EIA applications were received for upgrades to or construction of telecommunication masts. When taking into consideration that the 2005 figures alone for telecommunication masts mentioned above amount to over 15% of the total national project load for almost 9 years of EIA under the 1997 EIA Regulations, then it is quite significant. Improved screening mechanisms should ensure that this type of application does not completely bog down the system.

The prominence of 'change in land use' was also found by Sandham, *et al* (2002) in a survey conducted for the North West Province. Their research indicated that the almost all-encompassing description 'change of land use' resulted in the majority of EIA applications submitted to the provincial authorities.

6.3 Summary of activities for the 2006 EIA Regulations

Figure 6.2 represents the total sample of projects triggering a Basic Assessment and Figure 6.3 the activities triggering full EIA under the 2006 EIA Regulations for the Free State. As a result of one project being able to trigger more than one activity, the graph in Figure 6.2 represents 134 activities, even though only 104 applications were analysed. The study sample consisted of 186 applications. According to the FS-DTEEA, approximately 266 projects were submitted under the 2006 EIA Regulations (Krynauw, 2008). To ensure a 95% probability of reflecting the total population a minimum sample of 160 applications are required (Stephen and William, 1981). Therefore the sample covered is considered representative.

6.3.1 Activities not represented in the study sample

In the study sample representing the Basic Assessment applications, 22 different activity types were represented out of a total of 46 listed activities. With 24 not being triggered, the focus will only be on those activities expected to feature more prominently. The following activities were unexpected exclusions from the study sample:

- *1(b) – Aboveground storage of ore between 1 000 and 100 000 tons and 1(c) – Aboveground storage of coal between 250 and 100 000 tons.* The reason for this activity not being present is most likely a result of no new mines being developed or no new coal and ore storage stockpiles. Alternatively, this might be a case of projects going over the upper thresholds of either of the activities and thereby not triggering formal EIA, as discussed in Section 4.4.4.
- *1(e) – Construction of lawns, playing fields or sports tracks between 3 and 10 hectares and 1(f) – Sports spectator facilities carrying more than 8 000 spectators.* These activities should have featured due to the 2010 Soccer World Cup and all its preparations. The upgrading of a stadium carrying over 8 000 spectators will trigger an EIA due to the definition of construction that includes upgrading.
- *1(g) – The slaughter of animals with a throughput of over 10 000kg per year.* Even though this activity was not expected to feature prominently, it is still unexpected that it did not feature at all.
- *1(i) – Aquaculture over 10 000kg per year.* Due to the dry nature of the Free State, this was not expected to feature prominently. It is assumed that the current trout farms in the eastern Free State did not upgrade since the promulgation of the 2006 EIA Regulations.
- *1(p) – Temporary storage of hazardous waste.* It is really surprising that this activity was not triggered or at least applied for as its definition is exceedingly wide. Strictly speaking, any area where hazardous waste is stored, even as a staging area for removal companies to pick it up, triggers this activity.
- *17 – Phased activities.* It is not surprising that this activity was not applied for. As mentioned in Section 3.3.4.3, developers might try to avoid unnecessary delays to their project schedules, and conducting an EIA for a larger activity where none of the individual phases trigger EIA, just does not seem likely. According to the 2006 EIA Regulations this is illegal, as the entire project, with all its phases, has to be subjected to screening under the EIA Regulations, even if the individual phases do not trigger EIA. The possible loophole that could possibly be exploited is that the phased development includes the words "over time". This phrase theoretically has no end to it and will most likely have to be tested in court or taken on departmental review during future revisions of the Regulations.

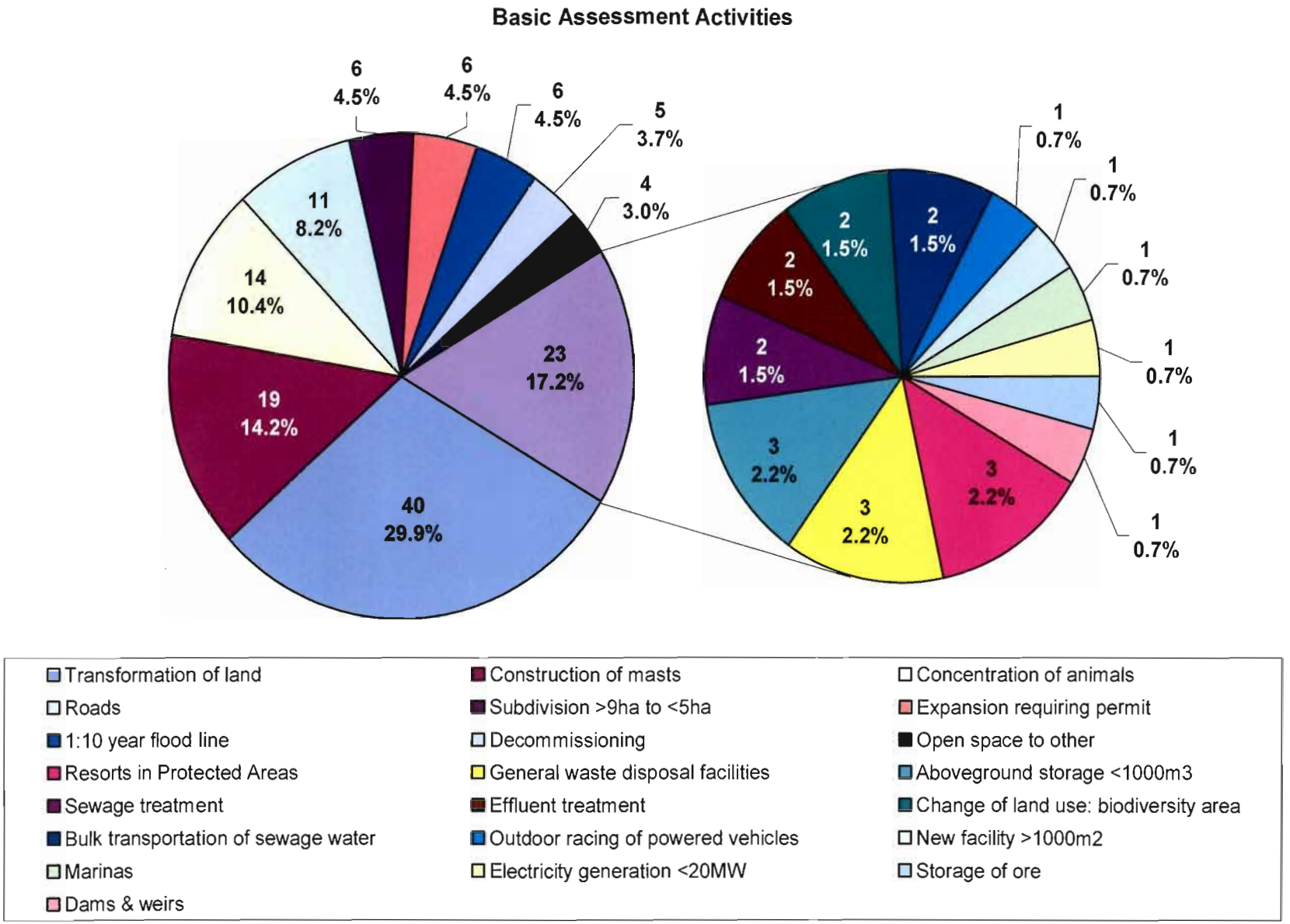

Figure 6.2: Basic Assessment activity list under the 2006 EIA Regulations

6.3.2 Major activities from the study sample triggering Basic Assessment

As can be seen from Figure 6.2, four activities triggered EIA in almost 63% of all submitted projects. These were:

- Transformation of land – 29.9%;
- Construction of masts – 14.2%;
- Concentration of animals – 10.4%; and
- Roads – 8.2%.

The "transformation of land" activity corresponds with the change of land use under the 1997 EIA Regulations and subsequently it is not surprising that this activity featured prominently, especially taking the low 1 hectare threshold into account.

Similarly the "construction of masts" activity corresponds to the communication network structures activity of the 1997 EIA Regulations. Although less prominent in terms of the total sample, it still features under die top four activities. Since the telecommunication sector experienced a boom in the last decade it is realistically possible that a saturation point will be reached in the near future, with the number of EIA applications tapering off.

6.3.3 Major activities from the study sample triggering full EIA

As can be seen from Figure 6.3 on page 64, three activities triggered EIA in almost 79% of all submitted projects. These were:

- Development larger than 20 hectares – 61.4%;
- Underground tanks and filling stations – 12.9%; and
- Sewage treatment over 15 000m^3 per year – 4.3%.

The "development larger than 20 hectares" activity does not have anything under the 1997 EIA Regulations that directly corresponds with it. However, the previous change of land use activity does draw some parallels and for that reason it is not surprising that this activity featured prominently.

The "underground tanks or filling station" activity featured prominently. A possible explanation for this is provided the in following section.

The construction of sewage treatment plants with a capacity in excess of 15 000m^3 per year corresponds well to a similar activity under the 1997 EIA Regulations, but featured much more prominently. A possible explanation for this is provided in the following section.

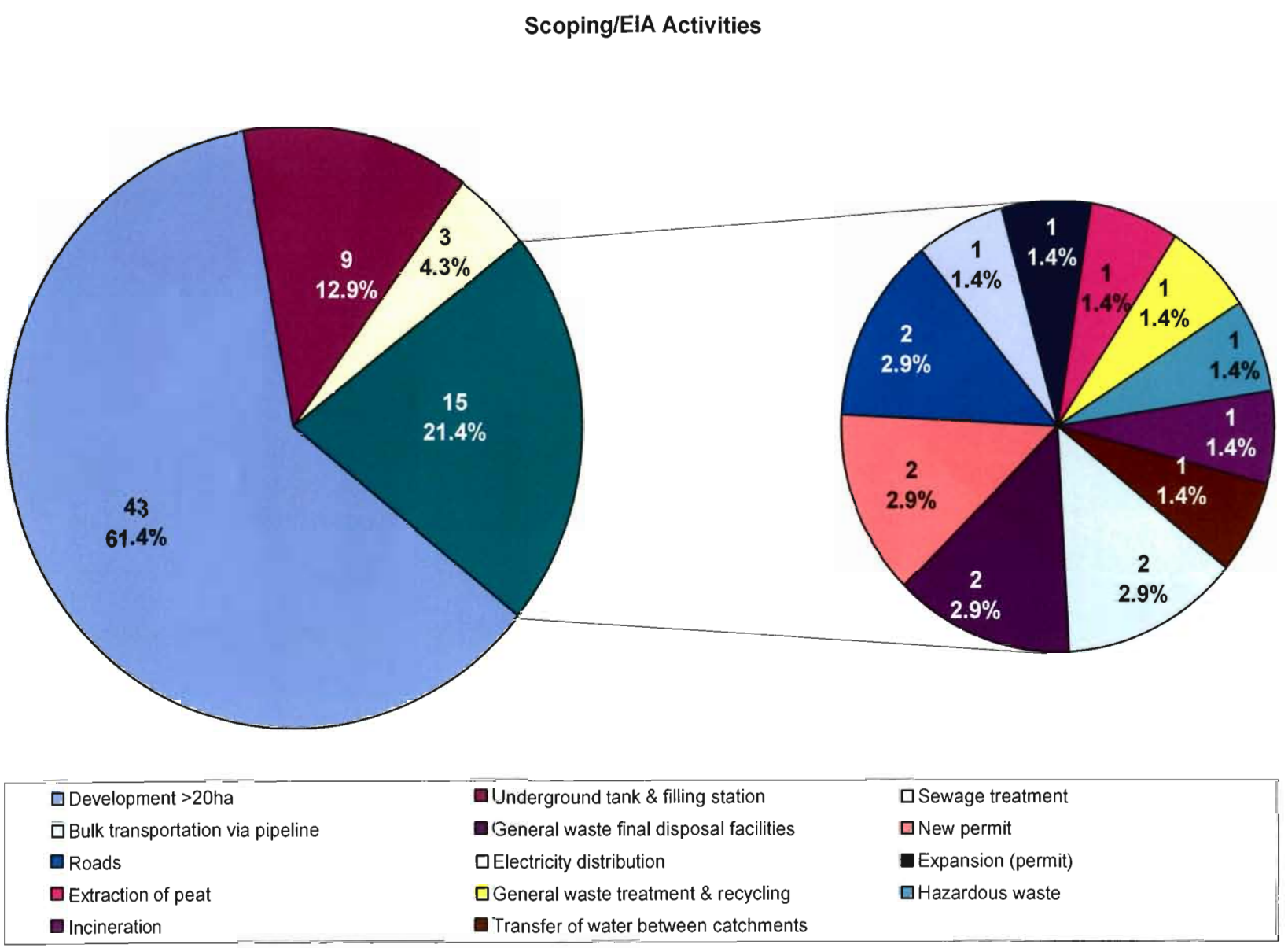

Figure 6.3: Full EIA activity list under the 2006 EIA Regulations

6.4 *Differences in the prominent activities between the two EIA systems*

This section aims to explore the differences and commonalities in terms of the main activities triggered under the 1997 and 2006 EIA Regulations. Table 6.1 provides a summary of the results.

Main activities under 1997 EIA Regulations (see Figure 6.1)		**Main activities triggering Basic Assessment under 2006 EIA Regulations** (see Figure 6.2)		**Main activities triggering Full EIA under 2006 EIA Regulations** (see Figure 6.3)	
Activity	**% of Total**	**Activity**	**% of Total**	**Activity**	**% of Total**
Communication network structures	39.2	Transformation of land	29.9	Development >20 ha	61.4
Change of land use	19.2	Construction of masts	14.2	Underground tanks & filling stations	12.9
Dangerous goods	16.7	Concentration of animals	10.4	Sewage treatment >15 000m^3/a	4.3
Resorts	8.2	Roads	8.2		
Electricity infrastructure	5.5				

Table 6.1: Summary of EIA triggering activities in the 1997 and 2006 EIA systems

From Table 6.1 it is evident that, broadly speaking, the profile of types of activities is not much different for the two regimes (although the number of activities has decreased – see Chapter 5). The following main conclusions are drawn:

- Telecommunication infrastructure in the form of masts is consistently dominant for both regimes. The number of these kinds of applications has decreased under the 2006 EIA Regulations but still remains a prominent proportion of the total number of applications. The economy as a driver for this activity is fully acknowledged and therefore it is expected that the number of these types of activities will fluctuate as the industry grows and detracts. However, considering the generic nature of these activities and the resources they demand from an EIA administrative capacity perspective, the question is asked whether EIAs should be required at all. Time and effort could probably be spent better elsewhere.
- The broad descriptions related to 'change in land use' and 'transformation of land' has also featured prominently in both regimes. The 1ha threshold included under the 2006 EIA Regulations has probably done little to screen out activities since most developments would

cover more than 1ha in any event. The indiscriminate nature of the activity descriptions also suggests that they will continue to trigger a high percentage of total EIA applications.

- The storage of petrol and the development of filling stations also feature prominently under both regimes. Again, as for cell phone masts, the generic nature of these activities and the resources they take up within the EIA system is questionable. It is significant to note that none of the EIA systems in developed countries require EIAs for filling stations (Wood, 2003). Maybe a re-think in terms of this activity is justified.
- EIAs for infrastructure development show an interesting shift from the prominence of electricity developments under ECA, to roads and sewerage under NEMA. These shifts partly reflect infrastructure development priorities of government. However as discussed in the following sections there is also a case to be made around the new thresholds introduced under NEMA, which actually facilitated more projects triggered for road construction.
- The last point to highlight is the emergence of the concentration of livestock (or feedlots) under NEMA. This activity was also listed under ECA and therefore the only explanation for its prominence under NEMA is a growth in the agricultural sector. However, the author is also convinced that there is an important element of raised awareness amongst farmers of their EIA obligations in this regard, and from there the increase in applications.

The following sections explore in more detail what is considered some of the important issues emanating from the results obtained from the comparative analysis.

6.4.1 Changes to the "public and private resorts" activity description

The activity "public and private resorts" has changed significantly from the 1997 to the 2006 EIA Regulations. Under the 2006 EIA Regulations the explicit description determines that a resort will only require an EIA when it is located in a listed protected area. However, there are various other activities such as transformation of land (more than 1ha) and certain of the infrastructure development activities (sewerage, storage of water, etc.) which in the large majority of cases apply to the overall resort development, triggering EIA in any event. Therefore it begs the question if the NEMA description has made any difference.

6.4.2 Changes to the "dangerous goods" activity

Another reason for the change in the "top 5" is the changes made to the previous activity 1(c), which entailed the manufacturing, handling, storage and processing of dangerous goods. This was a very wide and all-encompassing activity that resulted in many applications. Under the 2006 EIA Regulations, this activity is dealt with by two activities requiring Basic Assessment and four activities requiring full EIA. These are:

- Basic Assessment activity 7, which entails the above-ground storage of dangerous goods in volumes between 30 and 1 000m^3;
- Basic Assessment activity 25, which entails the amendment to existing environmental permits. This is usually triggered when a facility manufacturing or processing dangerous goods is upgraded;
- Full EIA activity 1(c), which entails the above-ground storage of dangerous goods in volumes exceeding 1 000m^3;
- Full EIA activity 3, which entails the construction of filling stations or the underground storage of dangerous goods;
- Full EIA activity 1(e), which basically requires a full EIA for any activity requiring a new environmental permit; and
- Full EIA activity 1(j), which requires a full EIA for the construction of a linear development carrying more than 50 tons or cubic metres of a dangerous substance (or good) per day.

When one triggering activity was split into six, it obviously resulted in a dilution of that activity in the "top 5". However, even when taking that into account a reduction in the total number of activities was still realised. These resulted in 6.7% of Basic Assessment activities and 18.8% of full EIA activities. When taken into account as part of the total project load, this resulted in 15 from 186 projects or 8% thereof. Even though this is a clear reduction from the 16.7% under the 1997 EIA Regulations, activities potentially involving dangerous goods still feature prominently under the 2006 EIA Regulations.

6.4.3 Changes to activities related to road construction

The construction of roads wider than 4m triggered 8.2% of Basic Assessment activities under the 2006 EIA Regulations. Added to this is the "road reserve wider than 30m" activity totalling 2.9% of the projects requiring full EIA. This is quite a bit more than the 3.3% under the 1997 EIA

Regulations. The reason for this can be explained according to the description of the activity. Under the 1997 EIA Regulations, there were no thresholds regarded when a road required EIA, except that it had to be outside the borders of a town planning scheme. Under the 2006 EIA Regulations, no distinction as to the location of a road is made, only the width or reserve size. When taking into account that a standard road in a suburb is wider than 4m then it is expected that a significant number of developments will be triggered. There is a case to be made for a rethink in terms of the 4m threshold.

6.4.4 Changes to activities related to concentration of animals/livestock

Concentration of animals is also an activity that features more prominently under the 2006 EIA Regulations (10.4% of Basic Assessment activities) than under the 1997 EIA Regulations (0.8% of the study sample). The activity under the 1997 EIA Regulations had no threshold, except that the concentration had to be for the purpose of mass commercial production. The activity under the 2006 EIA Regulations has seven different sets of thresholds, which is supposed to reduce the number of applications, yet it did not. There are two possible explanations, namely a drastic increase in agricultural development and/or raised awareness amongst farmers in terms of the need for an EIA. The author is of the opinion that the latter was probably the dominant factor.

6.4.5 Changes to activities related to sewage treatment

The construction of sewage treatment plants with a capacity in excess of 15 000m^3 per year corresponds well to a similar activity under the 1997 EIA Regulations. The new activity is fairly clear-cut, whereas the older activity included provisos related to the surrounding receiving environment. There is however one major difference between the two sewage treatment activities: the threshold. Under the 1997 EIA Regulations, the threshold for the construction of a sewage farm, unless it triggered one of the location triggers, was 15 000m^3 per day. Under the 2006 EIA Regulations, this has changed to a similar capacity, but on an annual basis. This considerable reduction in threshold value no doubt played a role in the increased prominence of this activity compared to the 1997 EIA Regulations.

6.5 Conclusion

From the literature survey it was found that under the 1997 EIA Regulations a total of 2265 projects were submitted for EIA in the Free State. From the study sample, it was found that 266 projects were submitted for EIA under the 2006 EIA Regulations. In Chapter 5, it was mentioned to represent a decrease of 46% between the old and new systems.

The five main activities that triggered EIA under the 1997 EIA Regulations resulted in almost 90% of all submitted projects. These were communication network structures, change of land use, dangerous goods activities, public and private resorts and electricity infrastructure. These trends are confirmed by studies done in the Free State and the Northwest provinces, as well as on national level.

When looking at the 2006 EIA Regulations, four activities triggered EIA in almost 63% of all projects submitted for Basic Assessment. These were transformation of land, construction of masts, concentration of animals and roads. Three activities triggered EIA in almost 79% of all projects submitted for full EIA. These were developments larger than 20 hectares, underground tanks and filling stations and sewage treatment over 15 000m^3 per year.

It is concluded that although the number of EIA applications has been reduced under the NEMA regime as indicated in Chapter 5, the spread in terms of types of activities has shown significant similarities. Generally speaking it is only a change in the types of infrastructure development, from electricity to roads and sewerage which has been prominent.

Chapter 7: Conclusion and Recommendations

In this chapter final conclusions and recommendations are made in terms of the research question introduced in Chapter 1, namely:

> What has been the comparative effect between the 1997 and 2006 EIA Regulations on the screening of EIA applications in South Africa?

The following is an outline of the sections contained in this chapter:

Section 7.1 puts screening into context as part of EIA. Section 7.2 follows with conclusions related to the screening experience in South Africa, with some shortcomings of both the 1997 and the 2006 EIA Regulations. Thereafter in Section 7.3, the question is answered as to whether the change in EIA system resulted in the promised 20% reduction in applications, followed by a discussion of the data analysis in Section 7.4 and recommendations to enhance screening effectiveness in Section 7.5. The chapter is concluded in Section 7.6 with recommendations for further research.

7.1 Screening as part of EIA

Research sub-question 1 enquired as to how screening is conducted in South Africa. In order to discuss the South African implementation of screening, it was necessary to discuss general and key concepts of screening, as well as look at international trends in screening practice. However, it is also necessary to explore screening as part of the larger EIA process and discuss the origins and development thereof. Therefore, Chapter 3 explored key concepts and development of EIA and screening both internationally and in South Africa.

Screening is an integral part of the early planning and design stages of the EIA process. It is carried out prior to EIA to determine the need, and if required, the level of assessment required for a proposal. Screening aims to make the potentially time-consuming EIA process more efficient. A

weak screening mechanism results in too many projects subjected to formal EIA or certain high impact projects not requiring EIA.

There are several approaches that can be used to classify development proposals during screening. These include initial consultation, list-based approaches (inclusive and exclusive), including listed sensitive areas, thresholds, preliminary evaluation, decision support systems and checklists, decision-maker's discretion, screening criteria and screening matrices.

Under the 1997 EIA Regulations, South Africa essentially had a two-stage screening process. The first was a legal judgement made with respect to the list of projects and activities requiring EIA (list-based approach) and the second was a decision based on the information contained in the scoping report (preliminary evaluation and decision-maker's discretion). Very few thresholds to eliminate minor activities and no classification according to area sensitivity resulted in a very large number of projects requiring formal EIA when compared to other countries. This indicates that the screening mechanism of the 1997 EIA Regulations was relatively weak.

The 2006 EIA Regulations attempted to improve on the screening process by making use of an inclusive list-based approach with thresholds for screening purposes, which then mainly requires pre-application screening to take place. Formal EIA is only triggered if the proposed activity is included in one of two schedules to the Regulations. Theoretically the nature, extent and location of the activities determine the schedule they are placed in and whether they require a Basic Assessment (preliminary evaluation) or a full EIA. This helped address some of the shortcomings of the list-based screening approach.

7.2 The screening experience in South Africa

Research sub-question 2 enquired about the extent in which the exemption option features in the 1997 and 2006 EIA systems and the differences between the exemption processes under the two systems. Since the granting of exemption from formal EIA for activities with low to insignificant impacts can be seen as a practical form of screening, Chapter 4 investigated the way in which exemption features in the two EIA regimes and the difference in approach under the two EIA systems.

Because it can be argued that any EIA process where exemption from the process has to be granted on a regular basis has a weak screening mechanism, the shortcomings of both the 1997 and 2006 EIA Regulations were also investigated, along with suggestions for improvement.

7.2.1 Shortcomings of the 1997 EIA Regulations

The 1997 EIA Regulations were a first attempt to legislate EIA and as such, some shortcomings presented themselves as expected, in both the process and its implementation. When the 2006 EIA Regulations under NEMA were implemented, Environmental Minister Marthinus van Schalkwyk acknowledged several inadequacies with regard to the 1997 EIA Regulations. These were an inflexible approach that forced all applications to follow the same assessment route (and detail as well), the exclusion of mining activities, a lack of thresholds resulting in too many applications, no provision for post-authorisation monitoring and a lack of government capacity.

7.2.2 Shortcomings of the 2006 EIA Regulations

The 2006 EIA Regulations are a great improvement on the 1997 EIA Regulations, but by no means perfect with numerous problems being experienced in the process. It was predicted, and subsequently experienced, that with the promulgation of the 2006 EIA Regulations, there would be some teething problems due to the system being new and that it would take time for consultants, the public, proponents and especially decision-makers to adapt to the new system.

Compared to the 1997 EIA system, the 2006 system has a substantially greater number of listed activities. It is surprising because the 2006 EIA Regulations focused on the redesigning of the ECA screening criteria in order to reduce the number of applications by 20%. Even though this would still result in exceptionally high numbers of projects being submitted to formal EIA when compared to international trends, it would have been a great improvement.

One of the major concerns with the 2006 EIA Regulations is the large amount of legal interpretation required on many of the triggering activities where activity descriptions are ambiguous. Thresholds have been added to many of the triggering activities, which assist in reducing applications in many instances, but make no sense in others and in fact, seem to have a high level of arbitrariness.

7.2.3 Exemptions in South African EIA

Under the 1997 EIA Regulations, the granting of exemption was seen as the Record of Decision (ROD) and the final authorisation. This exemption decision contained the conditions of approval and all other contents normally expected in an ROD.

In the Free State study sample 10.8% of the applications submitted for EIA, followed the exemption route. This is not considered to be high.

Under the 2006 EIA Regulations, the exemption process basically tailors the process according to the project's needs. It is an exercise that requires intimate knowledge of the applicable legislation.

Whereas an exemption decision under the 1997 EIA Regulations was considered the final authorisation, an exemption notice under the 2006 EIA Regulations merely provides permission to continue with a tailored process.

In the Free State sample, only 1 out of 186 projects in the study sample formally applied for exemption. This is very low and most likely due to the complicated process that an applicant has to go through to obtain exemption from certain sections of the EIA Regulations. It is also expected that a large number of the projects that followed the Basic Assessment route applied for exemption from completing certain sections of the report. This would not typically be reported as an exemption project and might be legally challenged.

7.3 2006 EIA Regulations: reducer of applications or not?

Research sub-question 3 enquired whether the 2006 EIA Regulations succeeded in reducing the number of applications when compared to the 1997 EIA Regulations. This question was investigated by consulting literature to find an answer for the national figures and obtaining data on EIA projects in the Free State from various sources, consolidating and analysing it.

Based on the data available on national level and the study sample obtained for the Free State, it is apparent that the average reduction in formal EIA applications entering the system has been reduced by more than the 20% predicted by Minister Van Schalkwyk.

At national level the average monthly project load reduced from 425 to 306 applications, representing an average reduction of 28% between the two EIA regimes.

At provincial level, in the Free State, the average monthly project load reduced from 22 to 12 per month representing an average reduction of 46% between the two EIA regimes.

7.4 Data analysis

Research sub-question 4 enquired to the number and types of activities being subjected to EIA under both EIA systems. This was investigated by obtaining data on EIA projects in the Free State from various sources, consolidating and analysing it.

From the literature survey it was found that under the 1997 EIA Regulations a total of 2 265 projects were submitted for EIA in the Free State. From the study sample, it was found that 266 projects were submitted for EIA under the 2006 EIA Regulations. In Chapter 5, it was mentioned that this represents a decrease of 46% between the old and new systems.

The five main activities that triggered EIA under the 1997 EIA Regulations resulted in almost 90% of all submitted projects. These were communication network structures, change of land use, dangerous goods activities, public and private resorts and electricity infrastructure. These trends are confirmed by studies done in the Free State and the Northwest provinces, as well as at national level as communicated by Environmental Minister Van Schalkwyk.

This picture changes quite a bit when looking at the 2006 EIA Regulations. Four activities triggered EIA in almost 63% of all projects submitted for Basic Assessment. These were transformation of land, construction of masts, concentration of animals and roads. Three activities triggered EIA in almost 79% of all projects submitted for full EIA. These were developments larger than 20 hectares, underground tanks and filling stations and sewage treatment over 15 000m^3 per year.

7.5 Recommendations

Even though a larger than promised reduction in projects subject to formal EIA have realised, South Africa's current 306 projects per month is still exceptionally high when compared to international trends. This requires further modification to the screening mechanism currently employed as part of the 2006 EIA Regulations.

The current screening mechanism being employed makes use of a good mix of different types of screening practice, but it can improve. Some of the improvements suggested have already been included in the latest round of draft EIA Regulations (SA, 2008b; SA, 2006c).

7.5.1 Change to activity descriptions

There are several activities where a change in the description can result in fewer projects being subject to formal EIA. Some examples are:

- Basic Assessment activity 1 in general – Removing the words "including associated structures or infrastructure" will result in a reduction in projects submitted for formal EIA. An example where this will make sense is the construction of a substation where the required transmission lines are already in place. The only EIA being triggered is a result of the associated structures or infrastructure for the generation of electricity. A substation has very limited, well-known and manageable environmental impacts and subjecting the construction thereof to formal EIA is a waste of resources;
- Basic Assessment activity 15 – The construction of a road wider than 4m potentially triggers many EIAs. If roads within a town planning scheme (as in the previous system) are excluded, it will be a much more sensible activity description. This has been rectified in the latest round of draft amendments to the 2006 EIA Regulations as mentioned here;
- Basic Assessment activity 25 – This activity requires a Basic Assessment for expansion to existing facilities that requires a change to a permit or a new permit, yet in the full EIA list, activity 1(e) requires a full EIA for a new permit. This is quite confusing. The latest round of draft amendments have rectified this, but have yet to be enacted.
- Full EIA activity 1(j) – This activity entails the bulk transportation of dangerous goods in pipelines, funiculars and conveyors over 50 tons or cubic meters daily capacity. This is quite confusing since the two units in the threshold are quite close to each other for a typical liquid. But where gases are involved, there can be quite a significant difference in the actual amount of

gas transported, depending on the choice of unit. The question is asked as to which unit one must use. This has been rectified in the latest round of draft amendments and there are new thresholds for gas, liquid and solid. In the opinion of the author, the thresholds are still on the low side, but will be a vast improvement on where it currently stands. As discussed in Section 4.4.4 above, there are also questions as to what exactly bulk transportation entails. This has not been rectified in the latest draft amendments.

7.5.2 Changes to thresholds

There are several activities where a change in the threshold can result in fewer projects being subject to formal EIA. Some examples are:

- Basic Assessment activity 16(b) – This activity entails the transformation of undeveloped, vacant or derelict land to a formal use where the size of the transformed area exceeds one hectare. This is a very small figure and actually results in numerous applications, as can be seen in the 29.9% portion of the Basic Assessment activities in the study sample.
- Full EIA activity 1(p) – This activity entails the treatment of effluent, wastewater or sewage with an annual throughput of 15 000m^3 or more. By changing the threshold back to the same threshold used under the 1997 EIA Regulations (15 000m^3 per day), or at least increasing it to a value several times higher than what it currently is, will reduce the number of applications in this field. Well-planned sewage systems are critical to the well-being of South Africa's citizens and it is therefore understandable that Government would require closer scrutiny of such installations. However, even when taking the current state of sewage treatment plants in South Africa into account, the 365-fold increase in EIA applications might be a bit excessive.
- Full EIA activity 3 – It is suggested that this either be separated from filling stations and treated similarly to above-ground tanks by adding thresholds requiring either Basic Assessment or full EIA.

7.5.3 Activities governed by installation standards

Where the installation of a facility is strictly governed by an industry standard, it is suggested that EIA requirements be relaxed or even removed altogether, since sign-off by a professional engineer is required to certify compliance to the relevant standards. This could be greatly assisted by an Environmental Management Framework compiled for an area or municipality identifying sensitive areas which will require automatic formal EIA. Areas marked as non-sensitive would then just

require sign-off by a certified engineer that the installation complies with all necessary requirements and a notification to the relevant provincial environmental department.

There are several examples, but the construction of fuel tank installations and masts for cellular networks spring to mind. Both these types of installation are very similar and generic and are therefore governed by industry standards. These standards already take environmental considerations into account and it would make much better use of resources if these could be processed via, for example, a screening checklist.

7.5.4 Competence/capacity building and retention of Government personnel

The screening process can be greatly improved by having better capacitated officers assessing project proposals. This increased capacity can be a result of better equipped personnel, more experienced personnel and lastly increased personnel.

This can be achieved by a twofold approach. The first suggestion is to enhance the retention of existing staff. This will ensure that experience is not lost and will also assist in the on-the-job training requirements of new personnel. Retention of staff can be achieved via a plethora of means, much of which is department and office-specific. The second suggestion is to attract suitably qualified new personnel. A better equipped and trained personnel force will assist greatly screening out those projects where the formal, regulatory EIA process will not add value and subsequently reduce the administrative burden on Government and industry.

7.6 Recommendations for further research

There are two main recommendations that can be made for further research in this field.

7.6.1 Increased focus on the Free State

One next step building on this research would be to dig deeper into the Free State data by attempting to obtain permission to ideally scrutinise all the actual project files. This will provide more accurate information on the ECA project files. It will also allow future researchers the opportunity to ascertain whether more of Environmental Minister Van Schalkwyk's predictions in his

April 2006 speech came true. These include a faster process (for which application and decision dates are required) and a less complicated process.

7.6.2 Similar comparative assessment in and between the other provinces

Another possible next step is to expand this exercise to the other provinces, as well as for projects submitted directly to National DEAT.

It would provide valuable insight into the way in which projects are handled in the various provinces.

Bibliography

ABAZA, H. 2000. Strengthening future environmental assessment practice: An international perspective. (In Lee, N. & George, C., eds. *Environmental assessment in developing and transitional countries*. Chichester : Wiley, pp. 271-282.)

AVIS, A.M. 1994. Integrated environmental management and environmental awareness in South Africa: where are we going? *Journal of Environmental Planning and Management*. 37(1):227-242.

CHRISTENSEN, P., KØRNØV, L., & NIELSEN, E.H. 2005. EIA as Regulation: Does it Work?, *Journal of Environmental Planning & Management*, 48(3):393-412, May. [*In* EBSCOHost: Academic Search Premier, Full Display : http://search.epnet.com] Accession number: 17211038 [Date accessed: 23 November 2006].

CLAASSEN, P., HALL, J., & EBRAHIM, S. 2003. Discussion Paper on the Preparation of the Environmental Impact Management Regulations. DEAT Briefing Note. 26 November 2003.

COUNCIL FOR THE ENVIRONMENT. 1989. Integrated Environmental Management in South Africa. Pretoria : Joan Lötter.

DEAT. 1998. EIA Regulations Guideline Document: Implementation of Sections 21, 22 and 26 of the Environment Conservation Act, Department of Environmental Affairs and Tourism, Pretoria.

DEAT. 2002a. Screening, Integrated Environmental Management, Information Series 1, Department of Environmental Affairs and Tourism, Pretoria.

DEAT. 2002b. Impact Significance, Integrated Environmental Management, Information Series 5, Department of Environmental Affairs and Tourism, Pretoria.

DEAT. 2002c. Scoping, Integrated Environmental Management, Information Series 2, Department of Environmental Affairs and Tourism, Pretoria.

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, Sep.

FIVAZ, K. 2006. Are the criteria for environmental impact assessment (EIA) system evaluation, developed by Wood (2003), applicable to developing countries? (Assignment as part of Magister in

Environmental Management course at the NWU Potchefstroom Campus submitted on 10 March 2006.) Potchefstroom. (Unpublished.)

GLASSON, J., THERIVEL, R., WESTON, J., WILSON, E. & FROST, R. 1997. A review of the evolution of environmental evaluation procedures in South Africa, *Journal of Environmental Planning & Management*, 40(4):451-463, Jul. [*In* EBSCOHost: Academic Search Premier, Full Display : http://search.epnet.com] Accession number: 9708161450 [Date accessed: 27 June 2007].

GLASSON, J., THERIVEL, R. & CHADWICK, A. 1999. Starting up; early stages. (In *Introduction to environmental impact assessment.* London : Spon Press (Taylor & Francis Group), pp. 85-128.)

GLAZEWSKI, J. 2005. *Environmental Law in South Africa.* 2nd ed. Durban : LexisNexis Butterworths. 740p.

GOVENDER, M. 2006. The applicability of Wood's criteria for EIA system evaluation to developing countries. (Assignment as part of Magister in Environmental Management course at the NWU Potchefstroom Campus submitted on 10 March 2006.) Potchefstroom. (Unpublished.)

HERTSGAARD, M. 2000. A global green deal. *Time,* 155(17):84-85.

HILL, R.C. 2000. Integrated Environmental Management Systems in the implementation of projects. *South African Journal of Science*, 96(2):50-54, Feb. [*In* EBSCOHost: Academic Search Premier, Full Display : http://search.epnet.com] Accession number: 2994593 [Date accessed: 13 November 2006].

JONES, C.E. 1999. Screening, scoping and consideration of alternatives. (In Petts, J., ed. *Handbook of environmental impact assessment. Volume 1: Environmental impact assessment: Process, methods and potential.* Oxford : Blackwell Science, pp. 201-219.)

KIDD, M. & RETIEF, F.P. 2009. Environmental Assessment. (In Fuggle, R. & Rabie, A, *eds.* EIA in South Africa. Juta Publishing, Cape Town. (In press).

KRUGER, E. & CHAPMAN, O.A. 2005. Quality aspects of environmental impact assessment reports in the Free State province South Africa. *South African Geographical Journal,* 18(1):52-57.

KRYNAUW, D. (krynauwd@dteea.fs.gov.za) 2006. NEMA EIA Regulations: Implementation Workshop – feedback. [E-mail to:] Welman, C.N.J. (coert.welman@sasol.com) Nov. 16.

KRYNAUW, D. (krynauwd@dteea.fs.gov.za) 2008. Feedback on FS-DTEEA staffing queries. [E-mail to:] Welman, C.N.J. (coert.welman@sasol.com) Oct. 03.

LEE, N. & GEORGE, C. 2000. *Environmental Assessment in Developing and Transitional Countries.* Chichester : Wiley and Sons.

LOMBORG, B. 2001. *The skeptical environmentalist – Measuring the Real State of the World.* 1st ed. Cambridge : Cambridge University Press. 515p.

NIELSEN, E.H., CHRISTENSEN, P. & KØRNØV, L. 2005. EIA screening in Denmark: A new regulatory instrument?, *Journal of Environmental Assessment & Policy*, 7(1):35-49, May. [*In* EBSCOHost: Business Source Corporate, Full Display : http://search.epnet.com] Accession number: 16298065 [Date accessed: 29 August 2008].

RETIEF, F.P. 2006. Screening and Scoping. (Lecture given as part of Magister in Environmental Management course at the NWU Potchefstroom Campus on 18 February 2006.) Potchefstroom. (Unpublished.)

ROSSOUW, N., DAVIES, S., FORTUIN, H., RAPHOLO, B. & DE WIT, M. 2003. South Africa in Environmental Impact Assessment in Southern Africa. Windhoek : Southern African Institute of Environmental Assessment, 201-225.

ROSSOUW, N. & WISEMAN, K. 2004. Learning from the implementation of environmental public policy instruments after the first ten years of democracy in South Africa. (Report obtained from OMBO 879 course material CD, no further details). 19p.

SA see SOUTH AFRICA

SANDHAM, L., VAN DER WALT, A. & RETIEF, F. 2002. *Aspects of EIA in the North West Province.* Paper presented at the International Conference of the Geographic Union, Durban. No further details.

SANDHAM, L.A., SIPHUGU, M.V. & TSHIVHANDEKANO, T.R. 2005. Aspects of environmental impact assessment (EIA) practice in the Limpopo province, *AJEAM-RAGEE*, 10:50-65, Mar.

SANDHAM, L.A. 2006. Environmental impact assessment. (Lecture given as part of Magister in Environmental Management course at the NWU Potchefstroom Campus on 18 February 2006.) Potchefstroom. (Unpublished.)

SANS. 2004. South African National Standard 10131. *Above-ground storage tanks for petroleum products.* 1st ed. Pretoria : Standards South Africa.

SANS. 2007. South African National Standard 1535. *Glass-reinforced polyester-coated steel tanks for the underground storage of hydrocarbons and oxygenated solvents and intended for burial horizontally.* 2.3rd ed. Pretoria : Standards South Africa.

SASOL. 2005. Sasol Business Development & Implementation Model. 5th ed. Jun. 1. 1663p. (Internal document)

SCHOLTZ, C.C. 2006. Discuss the influence and contribution of decision making theory on the field of environmental assessment. (Assignment as part of Magister in Environmental Management course at the NWU Potchefstroom Campus submitted on 13 October 2006.) Potchefstroom. (Unpublished.)

SOUTH AFRICA. 1989. Environment Conservation Act, no. 73 of 1989. Pretoria : Government Press.

SOUTH AFRICA. 1991. Minerals Act, no. 50 of 1991. Pretoria : Government Press.

SOUTH AFRICA. 1996. Constitution of the Republic of South Africa, no. 108 of 1996. Pretoria : Government Press.

SOUTH AFRICA. 1997a. Regulations in terms of section 21 of the Environment Conservation Act, 1989. (Notice no. R1182, 1997.) Government Gazette 18261, Sep. 05.

SOUTH AFRICA. 1997b. Regulations in terms of section 21 of the Environment Conservation Act, 1989. (Notice no. R1183, 1997.) Government Gazette 18261, Sep. 05.

SOUTH AFRICA. 1998. National Environmental Management Act, no. 107 of 1998. Pretoria: Government Press.

SOUTH AFRICA. 2002. Mineral and Petroleum Resources Development Act, no. 28 of 2002. Pretoria : Government Press.

SOUTH AFRICA. 2003. National Environmental Management: Protected Areas Act, no. 57 of 2003. Pretoria: Government Press.

SOUTH AFRICA. 2004. National Environmental Management: Biodiversity Act, no. 10 of 2004. Pretoria: Government Press.

SOUTH AFRICA. 2006a. Regulations in terms of Chapter 5 of the National Environmental Management Act, 1998. (Notice no. R385, 2006.) Government Gazette 28753, Apr. 21.

SOUTH AFRICA. 2006b. List of activities and competent authorities identified in terms of sections 24 and 24D of the National Environmental Management Act, 1998. (Notice no. R386, 2006.) Government Gazette 28753:130, Apr. 21.

SOUTH AFRICA. 2006c. List of activities and competent authorities identified in terms of sections 24 and 24D of the National Environmental Management Act, 1998. (Notice no. R387, 2006.) Government Gazette 28753:165, Apr. 21.

SOUTH AFRICA. 2006d. Accelerated and Shared Growth Initiative - South Africa (AsgiSA): A summary. [Web:] http://www.info.gov.za/asgisa/asgisa.htm. [Date accessed: 17 November 2006].

SOUTH AFRICA. Department of Environmental Affairs and Tourism. 2006e. Guideline 3: General Guide to the Environmental Impact Assessment Regulations 2006. Pretoria, Government Printer.

SOUTH AFRICA. Department of Environmental Affairs and Tourism. 2006f. Guideline 4: Public Participation in support of the EIA Regulations 2006. Pretoria, Government Printer.

SOUTH AFRICA. Department of Environmental Affairs and Tourism. 2006g. Guideline 5: Assessment of alternatives and impacts in support of the Environmental Impact Assessment Regulations 2006. Pretoria, Government Printer.

SOUTH AFRICA. Department of Environmental Affairs and Tourism. 2006h. Guideline 6: Environmental management frameworks in support of the Environmental Impact Assessment Regulations 2006. Pretoria, Government Printer.

SOUTH AFRICA. 2008a. Amendments of Regulations in terms of Chapter 5 of the National Environmental Management Act, 1998. (Notice no. R659, 2008.) Government Gazette 31144, Jun. 13.

SOUTH AFRICA. 2008b. Second amendment draft to Listing Notice 1 of the List of Activities and Competent Authorities Identified in terms of Sections 24 (2) and 24D of the Act. (Notice no. R660, 2008.) Government Gazette 31144:82, Jun. 13.

SOUTH AFRICA. 2008c. Amendment of List of Activities and Competent Authorities Identified in terms of sections 24 (2) and 24D of the Act. (Notice no. R661, 2008.) Government Gazette 31144:126, Jun. 13.

SOWMAN, M., FUGGLE, R. & PRESTON, G. 1995. A review of the evolution of environmental evaluation procedures in South Africa, *Environmental Impact Assessment Review*, 15(1):45-67, Jan. [In Science direct: http://www.sciencedirect.com] [Date accessed: 15 November 2007].

STÆRDAHL, J., SCHROLL, H., ZAKARIA, Z., ABDULLAH, M., DEWAR, N. & PANICH, N. 2004. Environmental Impact Assessment in Malaysia, South Africa, Thailand, and Denmark: Background, layout, context, public participation and environmental scope. *The Journal of Transdisciplinary Environmental Studies*, 3(1):1-19.

STEPHEN, I. & WILLIAMS, B. 1981. Handbook in research and evaluation: a collection of principles, methods and strategies useful in the planning, design and evaluation of studies in education and behavioral sciences, 2nd edition, Edits Publishers, San Diego.

SWANEPOEL, E. 2008. Once described as 'quite frightening', State now claims EIA backlog will be cleared this year, *Engineering News Online*, 2008-08-15. [Web:] http://www.engineeringnews.co.za/print_version.php?a_id=139675 [Date accessed: 18 August 2008].

VAN SCHALKWYK, M. 2006a. NEMA EIA Regulations: Environmental Protection: quicker, faster & better. (Speech given as part of National Environmental Management Act EIA Regulations roll-out on 19 April 2006.) Pretoria. [Web:] http://www.environment.gov.za/NewsMedia/MedStat/2006Apr19_1/19042006.htm [Date accessed: 14 November 2006].

VAN SCHALKWYK, M. 2006b. NEMA EIA Regulations: Environmental Protection: quicker, faster & better. (Presentation given as part of National Environmental Management Act EIA Regulations roll-out on 19 April 2006.) Pretoria. [Web:] http://www.environment.gov.za/Documents/Documents/2005Mar17/New_regs_2006/Shorted%20new%20EIA%20Regulations%20(drafted%20on%2018-04-06).ppt [Date accessed: 15 November 2006].

WELMAN, C.N.J. 2006. Assignment on Environmental Impact Assessment (Examination assignment as part of Magister in Environmental Management course at the NWU Potchefstroom Campus submitted on 17 November 2006.) Potchefstroom. (Unpublished.)

WESTON, J. 2000. EIA, Decision-making Theory and Screening and Scoping in UK Practice, *Journal of Environmental Planning & Management*, 43(2):185-203, Mar. [*In* EBSCOHost: Academic Search Premier, Full Display : http://search.epnet.com] Accession number: 2963165 [Date accessed: 6 August 2007].

WOOD, C. 1999. Pastiche or Postiche? Environmental Impact Assessment in South Africa. *South African Geographical Journal*, 81(1): 25-59.

WOOD, G., & BECKER, J. 2005. Discretionary Judgement in Local Planning Authority Decision Making: Screening Development Proposals for Environmental Impact Assessment, *Journal of Environmental Planning & Management*, 48(3):349-371, May. [*In* EBSCOHost: Academic Search Premier, Full Display : http://search.epnet.com] Accession number: 17211041 [Date accessed: 23 November 2006].