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SIGNIFICANT CONSTRAINTS HINDERING IMPLEMENTATION OF THE EIA REGULATIONS BY RELEVANT ENVIRONMENTAL AUTHORITIES IN SOUTH AFRICA

by

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October 2002

Dissertation submitted to fulfil the requirements of the degree of Master of Arts in
Environmental and Geographical Science
Faculty of Humanities

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The author wishes to acknowledge the National Research Foundation (NRF) for financial assistance towards this research. The opinions expressed and conclusions arrived at are those of the author and are not to be attributed to the National Research Foundation.

DECLARATION

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

Signed:

Signed by candidate

Date: 1 October 2002

EXECUTIVE SUMMARY

This research is focused on determining the most significant constraints hindering the implementation of the EIA regulations in South Africa by the Relevant Environmental Authorities (REAs). The impetus for this research was provided by a literature search, information obtained at an International Association for Impact Assessment (IAIA) workshop held in 1999 and personal discussions with the main participants in the EIA process.

This study adopts a broad approach to obtain the perceptions of the main participants in the EIA process (Regulatory Authorities, Consultants and Interested and Affected Parties), in order to identify the most significant constraints hindering EIA implementation in South Africa. The research was conducted in six of the nine provinces. Although many criteria were considered, the three main criteria used for selecting the six provinces include the research budget, geographical location and the economic characteristics of each province.

The empirical research of the study was conducted in two phases. A joint paradigmatic approach, involving both qualitative and quantitative research paradigms was adopted in the studies research design.

The first phase of the empirical study involved visiting each of the six case study provinces in order to conduct qualitative interviews with the main participants (respondents) in the EIA process and to administer a questionnaire requiring the rating of pre-selected constraints. In order to determine which of the constraints are considered by the respondents to be the most significant, basic statistical analysis was applied to the results to determine the overall rating of each constraint by the respondent groups. The main participants in the EIA process were selected according to a set of criteria, which are discussed in detail in this dissertation.

The second phase of the research involved the distribution of follow up questionnaires to the same group of respondents via fax, e-mail and post, to determine the most significant constraints hindering the implementation of the EIA regulations in rank order. The fundamental difference between rating and ranking is that rating allows the respondents the opportunity to apply the same rating of significance to numerous constraints. Ranking on the other hand, forces respondents to apply a different rank to each constraint, thereby allowing the most significant of all constraints to be identified.

Although the expectation was that the results of the first and second phases would be at least slightly different, it is evident from the cumulative ratings from phase one and the cumulative rankings applied to constraints from phase two that the results are identical.

The results of both the first and second phases show that the most significant constraint hindering the implementation of the EIA regulations in South Africa is the absence of a mandatory monitoring system to check/investigate whether the terms and conditions of the environmental contract/permit are adhered to during the life cycle of a project.

Preliminary discussions with EIA participants, prior to the undertaking of the two research phases, suggested that the lack of Authority Capacity, with emphasis on budget deficiency, is considered to be one of the key hindrances to the implementation of EIA regulations by Relevant Environmental Authorities in South Africa. This preliminary finding was confirmed during the first and second phases of the research. A model was therefore developed to define Authority Capacity, which was applied to the 12 most significant constraints identified by this research, in order to determine whether EIA implementation could be improved despite the budgetary constraints experienced by the respective environmental departments tasked with EIA implementation.

A hypothesis was developed, stating that 'the implementation of the EIA regulations in South Africa, by the relevant environmental authorities cannot be improved due to budgetary constraints'. The model discussed above was applied to the most significant constraints in order to attempt to nullify the hypothesis. The study concluded that the implementation of the EIA regulations can be improved despite budgetary constraints and that therefore the hypothesis cannot be true. The key suggestions for the improvement of the implementation of the EIA regulations in South Africa are summarised as follows:

- Adoption of a mandatory monitoring procedure in South Africa
- Development of an accreditation system for environmental consultants
- Interdepartmental communication between the REAs
- Strengthening of REA capacity by:
 - Training and guidance
 - Development of specific review criteria
- Education and awareness of I&APs
- Generation of budget.

Each of these suggestions is discussed in detail in Chapter 6 of this research.

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ACKNOWLEDGEMENTS

The author wishes to acknowledge the help and assistance of the following individuals and organisations during the undertaking of this research:

- 1) Mr Richard Hill for his continued support, guidance and thorough comments throughout the research.
- 2) All the respondents in the empirical stage of the research who so willingly gave up their valuable time to participate in the research.
- 3) The National Research Foundation (NRF) for financial assistance towards this research¹.

University of Cape Town

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GLOSSARY OF TERMS

CBEAPSA	Certification Board for Environmental Assessment Practitioners of South Africa
CFE	Council for the Environment
CMC	Cape Metropolitan Council
CONNEPP	Consultative National Environmental Policy Process
DEA	Department of Environmental Affairs
DEAT	Department of Environmental Affairs and Tourism
DEPE	Department of Environment Planning & Energy
DFA	Development Facilitation Act
DME	Department of Minerals and Energy
DPC	Development Planning Commission
EAPs	Environmental Impact Assessment Practitioners
EEU	Environmental Evaluation Unit
ECA	Environment Conservation Act
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EIR	Environmental Impact Report
E&AT	Environmental Affairs and Tourism
EPPIC	Environmental Planning Professions Interdisciplinary Committee
GDP	Gross Domestic Product
IAIA	International Association for Impact Assessment
I&APs	Interested and Affected Parties
IEM	Integrated Environmental Management
ICB	Interim Certification Board
LDO	Land Development Objective
MEC	Member of the Executive Council
NEMA	National Environmental Management Act (SA)
NEPA	National Environmental Policy Act (USA)
ORA	Other Relevant Authority
OSEA	On site Environmental Officer
REA	Relevant Environmental Authority
ROD	Record of Decision
SOE	State of the Environment Report
TLC	Transitional Local Council
UCT	University of Cape Town

1 INTRODUCTION

Following the 1994 National elections, South Africa has undergone monumental change in its efforts to amalgamate with the global community. Changes in policy, legislation, governance and more gradually perceptions and mindsets have formed the foundations of the transformation. Part of the process of re-introduction into the global community has been a positive commitment towards the protection of South Africa's natural resources through the promulgation of mandatory Environmental Impact Assessment (EIA) regulations on 5 September 1997.

This research seeks to investigate the implementation of the South African EIA Regulations by the Relevant Environmental Authorities (REAs) to determine the most significant constraints hindering the implementation of these Regulations.

1.1 Motivation for the research

Discussions held at an IAIA meeting in Cape Town (28\1\99) entitled, *'Improving the implementation of the EIA regulations'*, in conjunction with subsequent discussions held with participants² in the EIA process prompted the initiation of this research.

The above 'participants' with whom the research topic was discussed commended its relevance and concurred with the author on the necessity of conducting research into determining the most significant constraints hindering the implementation of the regulations. The research topic was characterised as follows:

- The findings of the dissertation will contribute to the improvement of EIA implementation in South Africa.
- At the time of the initiation of this research, the aims, objectives and hypothesis of this dissertation were unique in South Africa.
- The scope of the research is sufficiently broad to determine constraints across South Africa.
- The research provides a baseline from which to assess the future improvement of the implementation of the EIA regulations in South Africa.
- South African literary sources call for the initiation of research on the subject.

² In the context of this research, 'participants' are defined as EIA practitioners, academics, Relevant Environmental Authorities (REAs) and others involved with or interested in the EIA process.

- The research will aid the National Department of Environmental Affairs and Tourism in achieving its mandated aim of *'providing guidance and advice on addressing the constraints with regard to implementation of the EIA regulations'*.
- The research is topical since the IAIA's chosen mandate for the year October 2000 to October 2001 was *'Improving Environmental Impact Assessment Practice in South Africa'* (Duthie pers comm 2000).

In conclusion, it can be stated that this research is unique, topical and pragmatic, and as the research problem is further elaborated in section 1.2, the need for the research is further evidenced.

1.2 Problem statement

A multitude of socio-political and economic factors have combined to necessitate rapid development in South Africa. As in most developing countries, the promotion of economic growth and development are essential national goals. Economic growth and development are considered necessary in order to provide for the needs of an expanding population and to aid in addressing many of the current inequalities created by past social injustices.

With the need for rapid development and expansion comes the responsibility to provide for the current and future protection of the environment. The EIA regulations were developed to ensure that environmental considerations are taken into account during the planning and decision-making stages of projects and to regulate sustainable resource use throughout project life cycles.

Considering its function, it could be said that mandatory EIA has been introduced at an opportune time in South African history where the need for an environmental policy with a strong legal foundation and regulatory function is required as development needs are increasingly prioritised. However, discussions with participants in the EIA field and a preliminary literature review, strongly suggests that the implementation of the EIA regulations by the REAs in South Africa requires improvement.

A plethora of constraints were identified during the literature review in section 4 of this study that hinder the implementation of the EIA regulations. However, from an analysis of the available literature as well as discussions with the aforementioned participants in the EIA process the author identified the following problem statements as encapsulating the key deficits of research into the implementation of EIA in South Africa:

- There is an absence of research employing a holistic research design (as employed for this research) to identify the most significant constraints hindering the implementation of the EIA regulations across South Africa.
- Authority capacity³ is arguably one of the key constraints hindering the implementation of EIA in South Africa. Authority Capacity is however not adequately defined in South African literature and the extent to which it influences the implementation of the EIA regulations is, to the best knowledge of the author, not investigated.

Evolving from the problem statement, the research aims and objectives are delineated.

1.3 Research aims and objectives

The aims and objectives of this study, through the selected methodology, form the backbone from which the hypothesis is tested.

Aims of the study:

The primary aim of this study is:

- To determine the most significant constraints hindering the implementation of the September 1997 EIA regulations by the relevant environmental authorities in South Africa.

The secondary aim of this study is:

- To determine the extent to which budgetary capacity influences the implementation of the EIA regulations in South Africa.

³ Authority Capacity is defined in Section 4.9 of this study.

Objectives of the study:

The objectives of this study, which are seen as leading towards its final aims, are:

- Identification and documentation of the most significant constraints hindering the implementation of the EIA regulations in South Africa, through a holistic research design.
- Circumscribing the concept of 'authority capacity' in the context of South African EIA .

1.4 Hypothesis

The implementation of the EIA regulations in South Africa, by the relevant environmental authorities (REAs) cannot be improved due to budgetary constraints.

1.5 Structure of the dissertation

The remaining sections of this dissertation are structured as follows:

- **Section 2** documents the socio-political context in which the 1997 EIA regulations were promulgated and are subsequently being implemented in South Africa.
- **Section 3** provides an overview of South African environmental legislation, regulations and guidelines, as well as events leading to the promulgation of EIA in South Africa in 1997.
- **Section 4** contains a discussion on the current implementation of the EIA regulations by the relevant environmental authorities in South Africa. This chapter also defines the main participants in the EIA process and describes their roles and responsibilities in the EIA process. Key constraints hindering EIA implementation are identified and discussed and the concept of authority capacity is defined in detail.
- **Section 5** documents the research design and methodology adopted to best address the research aims, objectives and hypothesis.
- **Section 6** contains the results, conclusions and recommendations of the research.

2 SOCIO-POLITICAL CONTEXT IN WHICH THE EIA REGULATIONS WERE PROMULGATED

2.1 Introduction

South Africa has a history of EIA dating back to the mid-1970's, with the non-mandatory IEM procedure forming a major portion of this history during the late 1980's and up till the promulgation of the mandatory EIA Regulations in September 1997. Since the implementation of the EIA regulations is not an isolated process, it is important to understand the influence that socio-political and economic factors have on its implementation. Literary sources on the current practice of EIA in South Africa are limited compared to the wealth of information available on international practice. However, all available literary sources were analysed to produce a synopsis of the socio-political and economic context in which mandatory South African EIA was birthed and the ramifications it has for EIA implementation.

2.2 Socio-political context and EIA implementation

South Africa is similar to many countries in terms of the growing social and political importance that is placed on environmental matters. However, it is different in the sense that heightened environmental concern coincides with a period of social and political transition. The legislation and ideologies of the former government have to a large extent shaped the current state of South African society. The vast majority of South Africans are below the poverty line and wealth has traditionally been in the hands of a small ethnic minority. With the advent of full democracy many key socio-political and economic issues have been identified in the literature as having the potential to affect the implementation of the EIA regulations in South Africa. The key issues, some of which are discussed, include:

- Population Growth
- Lack of provision of basic resources
- Political agenda's, inequitable land distribution and management
- Rapid urbanisation
- Lack of efficient management institutions in the state sector
- Low education levels
- Low employment levels
- Disparities in economic opportunities.

2.3 Population growth

One of the greatest threats to sustainable development, a primary objective of EIA, is the rapid increase in population growth⁴ experienced in South Africa. Hart (1992) states that:

'human population growth and absolute numbers are often seen to be the most fundamental threat to sustained development and the environment' (pg.55).

This view was also expressed by the Presidents Council (1991, paragraph 2.1.1.) who recognise that *'the rapid increase in population in South Africa is indisputably the biggest threat to the environment'.*

In 1996, the total population of South Africa was over 40 million. With an average growth rate of approximately 4% per annum for South Africa, the population will be in the region of 50 million by the year 2001 (Central Statistical Services, 1996). This dramatic increase in population numbers will have the effect of placing pressure on environmental resources, which are already significantly altered from their natural state. Examples of factors placing pressure on the environment as a result of increased population include waste generation, energy demand, urbanisation, the need for a developed infrastructure to promote economic growth and an increase in the number of vehicles.

The State of the Environment (SOE) Reports produced in each of the Metropolitan areas in South Africa portray the detrimental effect that population growth has had and will have on the environment. The SOE reports, through the measurement of environmental health indicators⁵, determined that the quality of our air, water, soil and biota are decreasing, due primarily to the increased pressure placed on them by population numbers. Whilst the effects of population growth are of a serious nature, when high growth is combined with a lack of access to basic resources the pressures placed on the environment and the call for development become heightened. In such a context, the regulation and control of development by environmental legislation is often perceived as a threat to development, rather than as a complimentary facilitator of sustainable development.

⁴ An increase in the number of people, e.g. when the birth rate is higher than the death rate, when more people arrive in a city to live than leave the city, (SOE pg.212).

⁵ A mark or a measure that helps you to know if you are succeeding in reaching your goals. Indicators are often used in a State of Environment Report to measure how we are managing our resources, (SOE pg.211).

2.4 Lack of provision of basic resources

In South Africa, the basic human needs of food, shelter and security are of utmost importance to the majority of the population who live in a situation of poverty. Poverty is more than a lack of income. Poverty exists when an individual's or a households access to income, jobs, and/or infrastructure is inadequate or sufficiently unequal to prohibit full access to opportunities in society. The condition of poverty is caused by a combination of social, economic, spatial, environmental and political factors. In the context of poverty the best interests of society are judged in terms of immediate needs being met regardless of the potential long-term costs to the environment. In support of this argument, the World Commission on Environment and Development (1987) made the statement that *'the social needs and values of people in developing countries such as South Africa give rise to the support of policies aimed at economic growth'* (pg.34). Despite this report having been written over fourteen years ago, this statement is still just as relevant as it was then.

Other factors including income disparity, the desire of local and provincial government to increase their income from taxation and the goal of becoming globally competitive have combined to necessitate rapid economic development. Development has been recognised as a national goal in South Africa and is encouraged by both state and civil sectors: *'As in most developing countries, the promotion of economic growth and development are essential national goals in South Africa'* (Fuggle 1989, pg.33).

Economic growth and development are considered necessary in order to provide for the needs of an expanding population and to redress past disparities. These needs are recognised in the 1996 Constitution of South Africa, which states that *'Everyone has the right to an environment that is not harmful to their health and well being'* (Section 24a). This right includes a right to:

'have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development' (COR 1996, Section 24b).

The term *'justifiable'* is not adequately explained in the constitution and it is therefore assumed that this clause will, in the context of South Africa's socio-political climate promote

the fulfilment of the basic needs of a growing population over those of the environment. This assumption was made as a result of the way in which subsequent environmental legislation delineates sustainability. Section 2 of the National Environmental Management Act, No 107 of 1998, lists the National Environmental Management Principles that apply to the actions of all organs of state that may significantly affect the environment. It is stated under Section 2(3) that all development must be socially, environmentally and economically sustainable. However, Section 2(2) of the Act states further that Environmental Management, of which EIA is a part, must place people and their needs at the forefront of concern, and serve their physical, psychological, developmental, cultural and social interests equitably.

In summary, the needs created by rapid urbanisation and the desire for infrastructural development are being prioritised in South Africa as a means to uplift the economy and meet basic social needs. The needs of the environment are therefore in many cases a secondary concern to economic growth and development. In terms of the extensive definition of the term environment, as incorporated in South African legislation, socio-economic as well as biophysical factors should be considered collectively. However it seems that the socio-economic aspects of the environment are prioritised over the biophysical, despite the inseparable linkages and holistic definition.

2.5 Rapid urbanisation and infrastructural development

Development of an extensive industrial and infrastructural foundation are seen as necessary steps to compete in global markets, raise standards of living and meet the basic needs of the general population. Coupled with rapid development comes the need for accommodation closer to industrialised areas. The majority of the population who were previously forced onto approximately 13% of the land resources in South Africa are now moving to urban areas in search of employment. Despite this trend, the focus of environmental management is mostly on the biophysical environment, even though most South African legislation concerned with Environmental Management, including the EIA regulations defines the environment according to the extensive approach. The extensive approach to defining the environment has been adopted in this research. Its circumscription and an explanation of its origins and development are contained in Appendix 1.

Despite the adoption of a holistic approach to defining the term environment, urban environmental concerns are given relatively little attention by the many well-established NGOs who's aims and objectives are not explicitly or predominantly urban orientated. The

primary focus of EIA is therefore often on protecting the biophysical environment, sometimes to the exclusion of socio-political issues, which are closely interrelated to many of the factors examined in an EIA. It is inevitable that urban environmental issues will become more pressing and a framework needs to be put in place to address this growing concern.

2.6 Political agenda's, inequitable land distribution and corruption

In most developing countries, including South Africa, environmental issues are given low priority on political agenda's, as they are not a popular means to capture electoral support. Basic human needs including housing, water supply, sanitation, transport and energy are considered high priority issues amongst the general population and are thus afforded more attention by those canvassing for electoral support. As a result of governments' focus on development issues, a lack of political will to educate and inform the public about the links between environmental and developmental issues is evident. The following quote serves to illustrate the perception that the socio-political dynamics of South Africa have dictated a situation which necessitates that basic human needs are prioritised above environmental concerns:

'In most less-developed countries, including South Africa, scientific, educational or aesthetic requirements are regarded by many to be a luxury, while concern for the future is seldom as pressing as present needs for food, shelter and security. As a result, environmental concerns do not carry a strong electoral basis in many of these countries, leading to a lack of political will to introduce environmental assessments' (Preston et al 1995, pg.748).

Of particular concern to many voters is the issue of unfair distribution and access to land. Manipulation of access to basic environmental resources formed part of the policies implemented by the apartheid government. Black South Africans could only legally acquire land in designated areas. Forced removals and the migratory labour system contributed towards an alienation of blacks from their traditional role as guardians of the land alleviating them of feelings of custodianship towards environmental resources. (Khan, 1990; Ramphela 1991).

Environmental issues have also been traditionally viewed as a proviso for the privileged minority who have had access to and benefited from the use of the majority of environmental resources. Aesthetic, educational, historical and scientific needs are thus

considered a luxury and not a necessity in countries where the majority of the population are underprivileged. Mandatory EIA in South Africa may therefore be viewed in an unfavourable light, by those who have development aspirations at heart, as a process designed to restrict rather than compliment and enhance development.

Corruption

It was indicated to the author by several REAs that in some cases, government officials in positions of influence would place pressure on REAs to give authorisation for certain high profile projects. In return for expedient authorisation these high-ranking officials would receive remuneration of some form from the companies involved. This type of corruption requires attention from the highest level in order to prevent its perpetuation. Corruption is a well-publicised occurrence in most tiers of South African government. The legitimacy of this claim is evidenced by the recent raids (June 2002) on the offices of the Department of Minerals and Energy (DME) in the Limpopo Province by the Scorpions (South African anti-corruption unit), to investigate charges of bribery and corruption.

Although this problem is currently being tackled by the relevant law enforcement agencies, it should be recognised that this issue has a negative impact on EIA implementation in South Africa.

2.7 Low education levels

A crucial socio-political factor influencing the implementation of the EIA regulations is the lack of an educated and informed citizenry. South Africa is widely recognised as having a population that suffers from low levels of literacy. Much of the information generated during the EIA process is prepared by specialists and is usually presented using technical language that is outside the scope of understanding of most of the general population. In many cases it was noted during personal communication with I&APs that capacity building and empowerment of members of the community lacking literacy skills was severely limited. Kalan and Ross (1997) and many other authors, identify the need for instituting '*creative and simple ways for involving the public with an emphasis on information, knowledge and education*' (pg 8).

In addition, I&APs and consultants also commented on the attitudes of apathy amongst underprivileged members of the public, partly due to the lack of capacity building but also as a result of the previous authoritarian system of governance which perpetuated the belief in the population that objections made against the *status quo* will not be tolerated. This

belief was fostered mainly as a result of the previous government's exclusion of previously disadvantaged ethnic groups from information pertaining to environmental awareness and from decisions regarding the environment and development.

2.8 State management institutions

The lack of capacity within state management institutions in South Africa to implement the EIA regulations is widely recognised as one of the key constraints facing the REAs. Specifically, the lack of budgetary capacity impacts negatively on other areas of capacity such as innovative, expertise, interactive, decision-making, infrastructural and personnel capacity. These components of capacity are discussed in detail in section 4.9.

Lack of disclosure of information and transparency without accountability could be cited as one of the key socio-political vices that quell public support and trust of government decision-making bodies. In addition, it was indicated to the author during discussions with EIA participants, that projects that may have a serious impact on the environment are often granted approval without full consideration of the range of factors required by the EIA regulations or even due consideration of the process itself. Such a process cannot hope to achieve the trust and support of the general public.

During the empirical phase of the research, evidence from interviewees suggests that this problem may stem from that fact that historically South Africa lacked an open system of governance, a problem that appears in most cases not to have been rectified. The decision-making process involving the approval of Scoping and EIA reports has been reported to lack transparency and accountability in many of the provinces. As mentioned in section 2.6, some REAs, who wish to remain anonymous, stated that pressure was often placed on them by high levels of National government to approve certain developments. In many cases, the senior members of government who exerted such pressure would receive compensation for their efforts from the respective businesses wishing to undertake the listed activity.

A variety of other challenges face management institutions including pressure from governmental decision-making bodies. Authorities tasked with the implementation of EIA may face increased pressure to align decision-making with the aspirations of higher tiers of government, who wish to promote development. The changing priorities of institutions tasked with implementing the EIA regulations is reflected in the recent (2002) name change of the Limpopo Province Department of Finance, Economic Affairs and Tourism (DFEAT),

previously known as the Department of Agriculture, Land and Environmental Affairs, to the Department of Finance and Economic Development (DFED).

2.9 Disparities in economic opportunities between the provinces

Disparities in economic opportunities not only affect demand for services, but also have a strong impact on the personnel capacity available to a provincial government to administer the EIA regulations. People migrate in search of economic and educational opportunities and provinces with more limited opportunities have difficulty attracting or retaining qualified individuals. Thus it is not surprising that nearly half of all adult South Africans with tertiary qualifications reside in Gauteng and the Western Cape, given the concentration of higher education institutions and the level of economic activity in these two provinces (National Treasury, 2000)

The dramatic disparity in access to economic opportunities is reflected in Table 2.9.1, which shows the proportion of total remuneration accruing to employees in each province. The four most rural provinces, with a combined share of 43 per cent of the population, receive only 17 per cent of remuneration. Inadequate employment opportunities also burden the public sector, for instance by limiting the availability of private health care. Although less than 20 per cent of South Africans have access to medical aid, its availability is generally correlated with employment, as shown in Table 2.9.1.

Table 2.9.1: Distribution of remuneration and medical aid in South Africa

Province	Share of total remuneration (%)	Share of total medical aid (%)
Eastern Cape	5,9	6,7
Free State	5,1	6,2
Gauteng	43,2	39,1
KwaZulu-Natal	18,9	14,6
Mpumalanga	4,7	5,2
Northern Cape	1,6	2,3
Northern Province	1,7	5,0
North West	5,1	6,0
Western Cape	13,7	14,9
Total	100	100

Source: Statistics South Africa, 1995 income and expenditure survey and 1995 October household survey.

In terms of the EIA implementation, it is proposed that personnel, expertise and innovative capacities are strongly influenced in the respective provinces by disparities in economic opportunities.

2.10 Conclusions

The implementation of the EIA regulations cannot be divorced from South Africa's current socio-political context and should be contemplated within this framework. The issues discussed in this section (section 2) underlie many of the constraints identified by this research.

The next section provides an overview of South African environmental legislation and regulations.

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3 OVERVIEW OF SOUTH AFRICAN ENVIRONMENTAL LEGISLATION AND REGULATIONS

The purpose of this section is to present and briefly discuss the development of the EIA regulations in South Africa and to describe some of the key events leading up to its promulgation. EIA legislation was not developed or promulgated in a vacuum, and it is therefore important to understand the key events that have shaped the content of the regulations and have lead to its promulgation. Some of the constraints facing the implementation of non-mandatory EIA and Integrated Environmental Management are still applicable to the current implementation of mandatory EIA in South Africa and a reading of the history of EIA will help to better understand the present situation.

Environmental legislation and regulations that are currently applicable in South Africa will also be discussed in order to conceptualise the legislative context in which South African EIA is currently implemented.

3.1 Events leading to the promulgation of EIA in South Africa

The rise of environmental concern in South Africa began in what was seen as the international decade of environmental consciousness and awareness, the 1970's. Environmental concerns achieved nationwide recognition with the establishment of the 'Water Year' in 1970 and 'Our Green Heritage' in 1973 (Fuggle and Rabie 1992, pg.12). During this period and up to the promulgation of the regulations, many events played a role in the establishment of EIA as a legislative requirement. A summary of the most significant publications; conferences and other initiatives that have helped contribute to the planning, drafting and promulgation of EIA in South Africa are listed chronologically in Table 3.1.1. The items highlighted in the table are considered to be of particular significance to the promulgation of EIA and are discussed in the sections after the table.

Table 3.1.1: Prominent events leading to the promulgation of the 1997 EIA regulations

Time Period	Prominent Environmental Initiative's leading to the inception of EIA in South Africa
January 1971	Cabinet committee appointed to investigate environmental pollution
April 1971	A pollution subsidiary committee of the Prime Ministers Planning Advisory Council produced a report entitled " <i>Besoedeling</i> "
May 1972	A permanent cabinet committee on environmental conservation was

	established
1973	Department of Planning and Environment was established to control pollution and to conserve natural resources
1974	Formation of the Habitat Council as well as the Environmental Planning Professions Interdisciplinary Committee (EPPIC)
1975	Physical Planning Act 88 of 1967 was amended and renamed the Environmental Planning Act 88 of 1967 to make provision for the consideration of environmental factors during land use planning
1979	Department of Environmental Planning and Energy was established Symposium on <i>"Shaping our environment"</i>
1980	Department of Water Affairs, Forestry and Environmental Conservation was established
1980	White paper on a national policy regarding environmental conservation was drawn up
1981	State President Appointed a Commission of Inquiry into environmental legislation
1982	A direct outcome of the 1980 white paper was the Environmental Conservation Act 100 of 1982
1983	Establishment of the Council for the Environment
1984	Publication of two reports by the Presidents Council on <i>Nature conservation in South Africa</i> and on <i>priorities between conservation and development</i> Council for the Environment developed the process of Integrated Environmental management
1985	Council for the Environment held a national workshop at Midmar, Natal in 1985 to recommend a national policy for EIA in South Africa
1989	Promulgation of the Environmental Conservation Act No 73 of 1989 Publication of draft IEM guidelines
1991	The Report of three committees of the President's Council on a national environmental management system
1992	Draft white paper relating to a policy on a national environmental management system for South Africa was compiled by DEA Publication of the final IEM guidelines consisting of six guideline documents
1994	The first draft of the proposed EIA regulations was published for comment by DEA&T in South Africa – Government Notice 171 and 172 in Government Gazette 15529 of 4 March 1994
August 1995	CONNEPP conference designed to bring together a variety of governmental and non-governmental bodies in order to develop a national environmental policy

April 1996	Organising committee of CONNEPP produced a discussion document entitled <i>'Towards a New Environmental Policy for South Africa'</i>
November 1996	Amended draft of the proposed EIA regulations was published by the DEA&T
September 1997	The Draft Guideline Document was published by the DEA&T to coincide with the promulgation of a list of Activities and Regulations for EIA's in the Government gazette of 5 September 1997 in terms of sections 21, 22 and 26 of the Environmental Conservation Act, Act 73 of 1989
September 1997 – April 1998	Enactment of the EIA regulations
November 1998	Promulgation of the National Environmental Management Act (NEMA), which contains provisions for EIA

Sources: Rabie (1986), (Fuggle and Rabie, 1992), Sowman *et al* (1995), Peckham (1997), Laidler, (1999) and Rabie (1999).

The desirability of including some sort of EIA requirement in South Africa's regulation of environmental management issues has long been evident, and was commented on directly or by implication by many literary sources, including van Niekerk (1975) and Rabie (1976). Cowen (1980) states that *'fears of the disclosure of legally based EIA regulations specially tailored to fit South African circumstances and needs, have been greatly exaggerated'* (pg.73). Books, edited by Fuggle and Rabie (1983) and Fuggle and Rabie (1995) deliberate on the issue. The former states that *'attention will have to be given to the clarification of official requirements for environmental evaluations if these are to serve a real purpose in South African decision-making'* (pg.486). The latter suggests that the *'Council for the Environments recommendation that EIA should be legally enforceable is likely to find expression in the near future'* (pg.761).

Many articles and reports were also published on the subject of EIA in South Africa. In 1986, Rabie published an article in which he lists the three different methods by means of which EIA may be implemented, namely reliance upon voluntary adherence to a code of practice, the issuance of administrative policy directives independent of a legislative basis, and the promulgation of coercive legislation. The article concluded by calling for the promulgation of legislation to enforce EIA. The Presidents Council (1991) in its Report on a National Environmental Management System also indicated that it strongly supported mandatory EIA in South Africa.

In addition to academic publications, a number of environmental NGO's formed during the 1970's. Chairs of Nature Conservation were established at the University of Pretoria and the University of Stellenbosh in 1970; the Shell Chair of Environmental Studies was endowed at the University of Cape Town in 1972, in 1973 an institute of Fresh Water Studies was established at Rhodes University, an Ecological Institute at the University of the Orange Free State, and the Percy Fitzpatrick Institute for African Ornithology was attached to the Zoology Department of the University of Cape Town (Fuggle and Rabie, 1995, pg.12).

Several other important organisations were formed during this period, which have contributed to the introduction of EIA in South Africa. Of particular significance is the National conference on 'Man and his environment' which was held in Stellenbosch in 1972. This conference in conjunction with widespread public concern over inadequate consideration of environmental factors in the planning of several developments, particularly the Garden Route freeway resulted in the formation of the Habitat Council. This national body co-ordinated the activities of private bodies involved in environmental conservation. A result of the first meeting of the council was the recognition that a primary requirement for effective environmental conservation was the establishment of an EIA process, implemented by a body of professional planners (Council For Environment, 1985).

As a result of the recommendations made by the Habitats Council, the Environmental Planning Professions Interdisciplinary Committee (EPPIC) was formed in 1974 and prepared a set of guidelines for the planning professions. These guidelines were developed to assist planning professionals in taking environmental considerations into account during the planning and design phases of projects. The Habitat Council frequently included the subject of EIA in meeting agendas and presented documentation to government officials stressing the need for compulsory EIA. In the 1977 annual general meeting of the Habitat Council, a resolution was taken to approach the Minister of Planning and the Environment regarding the need for legislation which would demand an Environmental Impact Statement (EIS) from developers when embarking on major developments or re-development planning. This resolution was unsuccessful in eliciting the desired action by the minister.

Further evidence of increasing recognition of the need to consider the environmental impacts of major development projects can be found in a report called "*Bepaling en Evaluering van Invloede van Ontwikkelingsprojekte op die Omgewing*" [Identification and Evaluation of the Effects of Development Projects on the Environment] which was prepared by the South African Council for the Environment in 1976. A significant event contributing to

the further development of EIA in South Africa was a gathering of organisations, government departments, academics, professionals, and members of the general public concerned with the question of EIA at a symposium in 1979 on '*Shaping the Environment*'. The objectives of this event were to emphasise the value of EIA as an aid to the management of environmental change resulting from development, to examine various EIA methods, and to consider the legal framework and administrative mechanisms for its effective implementation (CFE, 1985).

There was also serious national concern about the effects of uncontrolled development on the environment by the government who initiated a number of investigations into environmental concerns and began to create legislation to address some of these concerns. In 1980, the Department of Environmental Affairs (DEA) was formed. The formation of this Department is significant, as it no longer operated as a subsidiary of the Department of Environment Planning and Energy (DEPE). The Department of Environmental Affairs gained jurisdiction over several environmental statutes, which it had the power to administer and provide guidelines for, independently of other Departments.

Two significant documents that contributed towards the protection of environmental resources from development were the 1980 White Paper on a National strategy regarding environmental conservation and the Environmental Conservation Act 100 of 1982 which arose as a result of the former document. The purpose of the White Paper was to develop a National strategy for environmental conservation in South Africa. The statement of intent of the white paper, under section 1.1 (pg.5) is to formulate a national policy on environmental conservation which will, in broad outline, afford the necessary protection to the natural as well as the urban environment, in spite of essential development, in order to ensure a balance between man and his environment. It was also argued that the environment should become a normal consideration in the planning, development and operational phases of projects. The White paper, under section 6, also recognised the need to focus government attention onto the protection of the environment as a result of the desires in South Africa for rapid development.

The Environmental Conservation Act (ECA) 100 of 1982 was assented to on the 23 June of that year. The objective of this Act was to make provision for the co-ordination of all actions directed at or liable to have an influence on the environment, and for the establishment of a council for that purpose. Section 12 (2) (c) of the Act contains an important provision that empowers the Minister to make regulations relating to a number of aspects including, '*the conservation and the utilisation of the environment in order to attain or to further the objects*

of this Act'. Under section 3 (2) (a-b) the minister was also empowered to appoint a council who would advise him/her on the co-ordination of all actions directed at or liable to have an influence on any matter affecting the conservation and utilisation of the environment. The Act, under section 10 (4) and section 12 (5) also gave the Minister punitive powers in the event of a contravention of any of the provisions contained in the Act. Whilst this Act was a commendable step forward towards the introduction of mandatory EIA, there was no procedural framework or policy to guide the decision making process. Officials tasked with implementing the regulations were often from narrow nature conservation backgrounds and in addition there was no political will to implement the regulations, as environmental issues were not considered a priority on the political agenda of politicians during this period of South Africa's history.

A positive outcome of the Environmental Conservation Act 100 of 1982 was the inception of the '*Council for the Environment*', which became established in 1983. Several subcommittees, including the committee for EIA, played a significant role in the development of EIA in South Africa. The council was instrumental in initiating research, workshops, and consultation on the subject of EIA for South Africa (Preston *et al*, 1992, pg.50). It was also during 1983 that the responsible minister was given powers to promulgate the EIA regulations but this power was never exercised. The findings of the Council for the Environment's research led to a National workshop held at Midmar in Natal in 1985. The aim of the report was to provide further direction towards a National Policy on Environmental Impact Assessment in South Africa. The workshop reached consensus that some form of EIA is necessary in South Africa. There was almost unanimous support for the introduction of EIA as part of a comprehensive, holistic planning procedure. The majority of the delegates agreed that the scope of EIA should include policies, plans, programmes and projects (CFE 1985).

It should be noted that this recommendation was not included in the final draft of the 1997 EIA regulations. Despite the agreement amongst delegates concerning the EIA procedure, integration of EIA and the necessity of a legislative framework, it was noted by Rabie (1986) that there was '*considerable divergence of opinion as to how EIA should be implemented*' (pg.20). Following this conference, a two-year period of research, consultation and review followed, which culminated in the publication of a document, entitled Integrated Environmental Management (IEM) in South Africa.

3.1.1 Integrated Environmental Management

In 1984 the Council for the Environment established a committee to recommend a National Strategy to ensure the integration of environmental concerns into the development process. After several years of research, consultation and multiple drafts of a recommended national policy, the concept of IEM was proposed to the Minister of Environment Affairs by the Council for the Environment during 1989 (DEA, 1989). The publication of the new IEM procedural document coincided with the promulgation of the Environmental Conservation Act 73 of 1989. This Act, discussed further in 3, became the first piece of legislation promulgated in South Africa to offer an environmental policy to guide the decision making process. IEM is defined by DEA&T (1998) as:

'An integrated approach for environmental assessment, management and decision-making which promotes sustainable development and the equitable use of resources. Principles underlying IEM provide for a democratic, participatory, holistic, sustainable, equitable and accountable approach' (pg.6).

It is generally accepted that IEM is a procedure designed to ensure that the consequences of developments are understood and adequately considered in the planning process of a project. The objective of the IEM procedure is to ensure that environmental considerations are incorporated into all stages of the development process to enhance the benefits of the development whilst minimising the impact on the environment (CFE, 1989). IEM consists of three stages that are designed to run in parallel to the normal Stages of a Development:

Stage 1 - Develop and assess proposal

Stage 2 - Decision

Stage 3 - Implementation

The IEM procedure is considered to be a highly effective Environmental Management tool by many of those who have had the opportunity of seeing it in operation. The question that needs to be answered is why IEM was adopted in South Africa as opposed to the NEPA evolved EIA process and why EIA as opposed to IEM was promulgated in September 1997.

3.1.1.1 EIA and IEM in South Africa

EIA, as initially promulgated in the United States was designed to ensure that concerns over environmental matters were incorporated in decision-making procedures. EIA

legislation in the United States includes roles as planning and management tools for obtaining solutions to environmentally related problems. These tools are applied to the categories of policies, programmes and projects. All proposals affecting environmental resources fall into one of the three categories defined by the Council for the Environment (1987):

- 1) Policies** – General courses or methods of action intended to guide and determine more specific decisions, both in the present and in the future.
- 2) Programmes** – More specific courses or methods for accomplishing some objective or implementing some policy.
- 3) Projects** – Highly specific actions, involving a series of discrete steps, undertaken in accordance with some programme or policy.

Despite the advancements made by the discipline of EIA since its inception in the United States in 1969, many critics still conjectured that the EIA process was unsuitable for implementation in South Africa. Several important reasons exist which underpin this perception. During the early 1980's, in South Africa, EIA was still viewed as a narrow procedure which hindered rather than aided in advancing development. NEPA's strict legislative foundation also helped to solidify the perspective that voluntary adherence to a code of practice, guidelines or policy statement was more appropriate. Therefore, to avoid negative associations being formed, IEM became the new nomenclature in South Africa. However, despite the similarities, the practice of IEM adopted in South Africa differs from the NEPA evolved EIA procedure in several areas making it more acceptable for implementation in a developing nation such as South Africa.

One of the primary concerns of South African critics who were opposed to the adoption of EIA was the country's developing status. It was conjectured that a process designed to operate in a first world system would be unsuitable for a country where it would be perceived to act against opportunities for economic growth. An essential assumption underpinning the EIA process in the industrialised world is that environmental conservation is considered a high priority issue by voters, and decision-makers who will have the required ethos to take environmental decisions into account when granting or refusing authorisation to development proposals. This assumption cannot hold true for developing countries where basic human needs take priority over environmental concerns. In South Africa, as well as other developing nations, it was argued that there is a need for impact procedures which encourage early evaluation of socially responsible and realistic alternatives, for focused effort that is directed at solving the problems associated with

development instead of trying to stop development (Fuggle, 1989). The process of IEM was therefore developed as an alternative to EIA that was better suited to the environmental ethos and economic constraints typical of most developing countries.

IEM applies to all levels of proposed actions, from policy formulation, to devising general programmes for affecting policies to the initiation of specific projects. IEM is concerned with the development, assessment and implementation of any proposed policy, programme or project. It is a systematic approach for ensuring the structured inclusion of environmental considerations in decision-making at all stages of the development process. A criticism of EIA is that it is often undertaken after the preliminary design and sometimes after detailed design of a project has been completed (Hill and Fuggle, 1988). Such reports are considered to be reactive rather than proactive, and often result in the project going ahead anyway as developers realise that objections on environmental grounds are unlikely to impede the project. The late consideration of environmental concerns into decision making also has the effect of delaying projects, which translates directly into wasted time and money. It appears that this problem has still not been completely addressed as a prominent criticism of the 1997 EIA procedure is that it is implemented independently of the legal planning process of a project, where a large majority of the decisions affecting the project are made. With the implementation of the EIA regulations it was intended to integrate EIA into the legal planning requirements of a development, however this aim was abandoned mainly due to opposition from the planning profession (Cohen, 1999, *Pers comm*). The EIA process and the legal planning procedure currently exist as two separate discretionary decision-making procedures. Efforts are however being undertaken to integrate EIA into the planning and assessment stages of projects (Hustwick, 1999, *Pers comm*).

EIA reports produced in industrialised nations are often highly technical in nature. It was argued that the professionals tasked with producing EIA's in South Africa would not have similar value systems to first world EIA experts. The priorities of first world experts would not reflect the needs, aspirations and values of a population largely consisting of the underprivileged. Fuggle (1989) argues that *'IEM should ensure that affected people form an integral part of the evaluation procedure so that they can identify the environmental components they value, and contribute towards the formulation of appropriate development strategies'* (pg.10). The traditional EIA policy developed under the NEPA does not include taking into account the value systems of those living below the poverty line as the majority of Americans do not fall into this category. Critics also doubt whether most third world countries have the technical and administrative competence to make EIA work effectively.

IEM was therefore developed as a uniquely South African process that was based on some of the principles and procedures that underpin NEPA based EIA, yet modified and amended to accommodate South Africa's third world status. Despite the socio-political sensitivity of IEM and its well thought out procedures, it lacked any action forcing mechanisms to ensure that proponents would undertake the process or comply with any recommendations made by the IEM report. Since the Environmental Conservation Act No. 73 of 1989 already contained provisions for the promulgation of EIA under sections 21, 22 and 26 it was more expedient to adopt EIA than to wait for the final drafting of the National Environmental Management Act No 107 of 1998, which was intended to entrench the 1992 IEM procedure.

IEM and EIA share much in common and the current practice of EIA is guided by the basic philosophy and principles that underpin IEM including:

- a broad understanding of the term environment
- informed decision making
- accountability for decisions and for the information on which they are based
- an open, participatory approach to the planning of proposals
- pro-active and positive planning.

The promotion of the concept of EIA and the development of the philosophy underpinning the principles and procedures of environmental evaluation eventually adopted in South Africa was largely due to the work of a handful of dedicated academics and professionals, many of whom served on the various committees and councils concerned with environmental management in South Africa (Preston *et al*, 1992).

3.1.2 Promulgation of EIA in South Africa in September 1997

The first draft of the proposed EIA regulations were published for comment by DEA&T in South Africa in 1994 – Government Notice 171 and 172 in Government Gazette 15529 of 4 March 1994. Notice 172 provides a detailed list of activities, with thresholds listed under section 21 of the Environmental Conservation Act No. 73 of 1989. Although the Environmental Conservation Act was passed in 1989 it was only under the new government (post 1994) that the enabling provisions regarding activities were invoked, when the regulations became promulgated under section 21 (Glazewski, 2000). There are three sets

of regulations contained under section 21(1)⁶. The first set of regulations lists a number of activities that may have a substantial detrimental effect on the environment. The second set of regulations, entitled '*Regulations regarding activities identified under section 21(1)*', contains the body of rules that relate to the ethics and contents of EIAs. The third set outlines the process for the designation of Competent/Relevant Environmental Authorities responsible for the implementation of the Regulations. Certain aspects of each of these sets of rules are presented and discussed further in section 4.3 of this study.

Following the publication of notice 171 and 172 in the Government Gazette, the Consultative National Environmental Policy Process (CONNEPP) was initiated by the Ministry of Environmental Affairs and Tourism (DEA&T) in May 1995. The importance of this process was its mission to include the broader South African Society in the formulation of environmental policy. This comprehensive participatory process reflected the entrenchment of South Africa's new found democracy. During August 1995, a national conference was held in Johannesburg between the major sectors and stakeholders groups involved with or interested in Environmental Policy formulation. The aim of this event was to establish a new national environmental policy. As a result, a discussion document was released in April 1996, entitled '*Towards a New Environmental Policy for South Africa*'.

An amended draft of the regulations was then published on 1 November 1996. The Draft Guideline Document was published by the DEA&T in September 1997 to coincide with the promulgation of a list of activities and regulations for EIAs in the Government Gazette of 5 September 1997 in terms of sections 21, 22 and 26 of the Environmental Conservation Act, Act 73 of 1989. Environmental Impact Assessment was made a legislative requirement for listed activities between September 1997 and April 1998.

Many policy and review reforms have been implemented since the advent of full democracy in 1994. The promulgation of the regulations were met with great acclaim by many prominent authors who had been lobbying for this event for over 25 years. Rabie (1999, pg.121) states that '*these processes reflect by far the most fundamental and comprehensive re-assessment of environmental policies in South Africa's history*'.

Several laws in South Africa contain provisions relating to the environment and some specifically to EIA. The next section presents the Acts and Policies related to the environment and discusses key Acts containing EIA provisions.

⁶ R1182 The Identification under s21 of activities which may have a substantial detrimental effect on the environment; R1183 Regulations regarding activities identified under s21(1); R1184 Designation of the Competent Authority who may issue authorisation of the undertaking of identified activities in government gazette N.18261 dated 5 September 1997.

3.2 Environmental Acts and Policies in South Africa

Over 20 Acts have bearing on environmental management in South Africa and include those listed below:

- Atmospheric Pollution Prevention Act, No 45 of 1965 (Entire Act);
- Constitution of the Republic of South Africa, Act No 108 of 1996 (Sections 7, 24, 27, 32, 33, 38, 39, 152, 195);
- Environmental Conservation Act, No 73 of 1989 (certain sections have been replaced by National Environmental Management Act);
- Hazardous Substances Act, No 15 of 1973 (Entire Act);
- Health Act, No 63 of 1977 (Sections 37, 38, 39);
- Minerals Act, No 50 of 1991 (Sections 5, 9, 14, 34, 38, 39, 47, 61, 63);
- Occupational Health and Safety Act, No 85 of 1993 (Sections 1, 8, 9);
- Physical Planning Act, No 125 of 1991 (Sections 1, 4, 22);
- Water Services Act, 1997 (Entire Act).
- National Water Act 1998 (Entire Act). This Act repeals the Water Act No 54 of 1956 but many provisions contained in the 1956 Act and regulations made under the 1956 Act remain in force until specifically repealed by the Minister.
- National Environmental Management Act 107 of 1998 (Entire Act).
- National Forest Act of 1998 (chapter 3).
- Advertising on Roads and Ribbon Development Act, No 21 of 1940 (Sections 1, 8, 9, 10);
- Agricultural Pests Act, No 36 of 1983 (Sections 1, 5, 6);
- Conservation of Agricultural Resources Act, No 43 of 1983 (Sections 1, 2, 5, 6, 7, 8 and Regulations, 12, 19, 20, 25);
- Development Facilitation Act, No 67 of 1995;
- Fencing Act, No 31 of 1963 (Sections 1, 10, 11, 17, 18, 23, 24, 26, 29);
- Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, No 36 of 1947 (Sections 1, 3 – 10);
- Forest Act, no 122 of 1984 (Sections 1, 5, 13, 18, 20, 22, 24, 25, 26, 73, 85);
- Game Theft Act (Entire Act);
- Lake Areas Development Act, No 39 of 1975;
- Land Survey Act, No 8 of 1997 (Sections 1, 31, 44);
- Mountain Catchment Areas Act, No 63 of 1970 (Entire Act)
- National Monuments Act, No 28 of 1969 (Sections 1, 12);

- National Parks Act, No 57 of 1976 (Sections 1, 19,20, 21 22, 24,27, 29, 30);
- National Roads Act, No 54 of 1971 (Sections 1, 13, 16);
- Nuclear Energy Act, No 131 of 1993 (Entire Act);
- Sea Shore act, No 21 of 1935 (Sections 1 and 3);
- State Land Disposal Act, No 48 of 1961 (Entire Act).

Help is acknowledged from Mbalo (2001) with the compilation of this list.

Some of the most important Acts in South African Law relating to EIA either directly or by implication are discussed in sections 3.2.1 to 3.2.4

3.2.1 Environmental Conservation Act (ECA) No 73 of 1989

This Act was promulgated on the 1 June 1989 and the date of commencement was the 9 June 1989. There are specific sections in this Act relating directly to EIA and its implementation. Part 1 of the ECA provides for an Environmental policy. The Act itself does not lay down a policy but empowers the Minister to determine the general policy by publication in the Government Gazette (section 2, ECA). Part 5 of the ECA entitled "*Control of Activities which may have a Detrimental Effect on the Environment*", provides for EIA. Glazewski (2000, pg.188) argues that this is one of the most important aspects of the ECA, which has not been repealed by the NEMA. Part 5, Section 31A of the ECA deals with enforcement of the Act. It empowers the Minister of Environment to declare either Activities (section 21) or Limited Development Areas (section 23) whereupon certain environmental assessment consequences are triggered. The minister has the authority to order any person to cease any activity that in his or her opinion may seriously damage, endanger or detrimentally affect the environment. The list of activities contained in section 21 are considered by the minister to have the potential to detrimentally affect the environment and in terms of section 22 these activities are subject to a process requiring written authorisation by the minister or relevant environmental authority. The minister or relevant authority is then required to base their decision authorising or refusing an activity on a Scoping or Environmental Impact Report.

Section 26 of the Environmental Conservation Act relates to the Minister's (or other authorised officials) powers to make regulations concerning EIA reports as referred to in section 21(1) and 23(2). Social and economic interests that may be affected by the listed activity (and alternatives), as well as the nature and extent of these effects fall under the regulatory powers of the minister and the competent environmental authorities. Included under the regulatory responsibilities is an outline of design and management principles

aimed at reducing adverse environmental effects. Although there are no formal requirements for monitoring of a project, the minister's power to make regulations with regard to the evaluation of the effect of any activity on the environment allows for the possibility of monitoring under section 26 (c), (DEA&T 1998).

Finally, under regulation 1184 of the Act, the Minister of Environmental Affairs and Tourism designates the Competent or Relevant Environmental Authority responsible for issuing authorisations to undertake the listed activities provided for in section 1183.

3.2.2 Development Facilitation Act No 67 of 1995

The Development Facilitation Act (DFA) gives the government the framework from which to achieve certain land development objectives including the introduction of extraordinary measures to facilitate and speed up the implementation of the Reconstruction and Development Program and projects in relation to land. The Act also contains a number of specific principles which are relevant to environmental considerations. These are included in Section 3 (1)(c) and state that:

'Policy, administrative practice and laws should promote efficient and integrated land development in that they;

(viii) encourage environmentally sustainable land development practices and processes.

(h)(iii) policy, administrative practice and laws should promote sustainable land development at the required scale in that they should promote sustained protection of the environment'.

These principles are required to be formalised in Land Development Objectives (LDOs), which are to be formulated for all local government areas [Chapter 4, Section 27(1)]. Specific LDOs are not contained in the Act, but the aspects that they are meant to cover are included. Principles relevant to EIA are included in section 28(1)(b)(ii-iii) that contains the following objectives relating to *'the sustained utilisation of the environment'*, and *'the optimum utilisation of natural resources'*.

Importantly, a local government body, or the Member of the Executive Council (MEC⁷) concerned, has the discretionary power to carry out environmental evaluations in order to assess the likely impact of any land development objective upon the environment [Section

⁷ The Member of the Executive Council to whom the Premier has assigned the performance in the province of the functions entrusted to the MEC by or under such a provision.

28(2)]. In addition, any competent authority may not approve a land development application if it is inconsistent with the LDOs set out in Section 28, [Section 29(1)].

The DFA also allows for the establishment of several institutions. Firstly, the Development and Planning Commission (DPC) which advises the Minister on policy and laws relating to planning and land development. One of the functions of the DPC is to advise the minister on '*policy and laws relating to the integration of environmental conservation with planning at different levels of Government*' [Section 14(a)(vii)]. The second institution provided for in the DFA is the Development Tribunal which must be set up in each of the provinces [Section 15(1)]. The function of the tribunals include the approval or refusal of land development applications [Section 33(1)]. An important aspect of this function is the imposition of conditions relating to a variety of situations in approving a land development application. This power provides the tribunal with the authority to impose conditions relating to the environment or environmental evaluations [Section 33(2)(n)].

Since the promulgation of the DFA, amendments have been made that relate directly to the 1997 EIA regulations. The new clause in the DFA states that a land development applicant is to include '*an environmental scoping report, prepared in accordance with the EIA guidelines or other requirements which are from time to time issued or amended by the National Department of Environmental Affairs and Tourism*' (DFA reg. 31,2000). It is further noted by Glazewski (2000, pg.244) that emerging planning and development laws of the various provinces include EIA provisions and require the inclusion of environmental considerations into the planning process. Some Provinces are currently more progressive in this area than others.⁸

Finally, the DFA also provides for the fast tracking of certain types of development and contains Integrated Environmental Management powers though these have not been exercised to date.

3.2.3 Constitution of the Republic of South Africa, Act 108 of 1996

New South African law, including environmental law, is strongly influenced by the Constitution, which promotes specific moral, social and political values. Chapter Two of the Constitution contains the Bill of Rights, which is the cornerstone of the new South African democracy. The Bill of Rights is binding on South African law and courts, all government

⁸ See Glazewski (2000) pg 245-255 for a detailed synopsis of current provincial planning legislation

departments and organisations and all South Africans, not only in terms of rights, privileges and benefits that it gives, but also in terms of duty and responsibility to implement and protect constitutional rights and values. Sections 7, 8 and 24 of the Bill of Rights give constitutional force to sustainable development. They oblige government to pass reasonable legislation to protect the environment, prevent pollution and ecological degradation, and secure sustainable development.

The Constitution states that *"Everyone has the right to an environment that is not harmful to their health and well being"* [Section 24(a)]. This right includes a right to:

'have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development' [Section 24(b)].

Other poignant sections of the constitution include section 7 and section 38 which grants *locus standi*⁹ to anyone wishing to enforce any of the fundamental rights which it entrenches. Importantly, under section 38 individuals can enforce their own, someone else's, or simply the public's interest. In essence, this right allows any individual or Non-Governmental Organisation (NGO) that has an interest in preserving the environment to share responsibility for its protection.

3.2.4 National Environmental Management Act No 107 of 1998

The National Environmental Management Act No 107 of 1998, (NEMA) was passed in November of 1998 and implemented in January 1999. The NEMA provides a framework for the general environmental law reform programme of the Department of Environmental Affairs. Glazewski (2000, pg.166) describes the NEMA as being in the nature of a framework Act that embraces all three fields of environmental concern, namely resource conservation and exploitation, pollution control and waste management and land-use planning and development.

⁹ An individual possesses *Locus Standi* or Legal Standing if their residence is situated in an area, which is directly affected by a particular development or if an individual feels compelled to act out of custodianship towards that area or to act on behalf of others whose rights are being infringed by a development. If this is the case, then they have the right to file an objection to the development with the Relevant Environmental Authorities.

This Act promotes co-operative governance. It will replace a number of provisions of the Environment Conservation Act 73 of 1989. The environmental impact assessment regulations promulgated in terms of the Environment Conservation Act (Sections 21, 22 and 26) will remain in force. Similarly, the Environment Conservation Act provisions for waste management (Section 20) will remain in force.

Section 24 of the National Environmental Management Act 107 of 1998 also makes provision for EIA's for identified activities. EIA regulations promulgated in terms of the Environment Conservation Act are being revised and will be adopted as NEMA regulations. NEMA provides the framework for integrating good environmental management into all development activities and to promote co-operative environmental governance with regard to decision-making by State organs. National government departments and provinces have to produce and update environmental management and implementation plans in terms of this Act. This is intended to promote co-ordination of environmental functions. The Act requires that the environment be protected as people's common heritage. It promotes public participation and requires that the interests, needs and values of all interested and affected parties (IAPs) be taken into account in decisions. It also promotes social, economic and environmental considerations in all decisions.

Chapter one of NEMA contains a set of National Environmental Management Principles [section 2(1)], which apply throughout the Republic to the actions of all organs of state that may significantly affect the environment. These Management Principles are not given preference in a situation where they may conflict with the social and economic rights of humans as entrenched in Chapter 2 of the Constitution. The principles serve as a general framework within which environmental management and implementation plans must be formulated and they should guide the interpretation and implementation of NEMA and any other law concerned with the protection or management of the environment.

Chapter 5 deals with Integrated Environmental Management which is aimed at promoting the integration of the principles of environmental management set out in section 2. Under this chapter, the Minister is entrusted with a right to identify activities which require EIAs and to pass EIA regulations.

Although provisions for the implementation of IEM are not included in the Environmental Conservation Act No 73 of 1989, Chapter 5 of the NEMA is specifically titled Integrated Environmental Management and reflects the IEM philosophy. Chapter 5 contains provisions

for the implementation of IEM and allows for the devolution of power to promulgate IEM to sectors (i.e. Land Affairs, Agriculture, Health, Housing and local Government etc) and to the MEC of each of the provinces under section 3 (b). This permission is granted if the Minister or MEC is responsible for an organ of state that is charged by law with authorising, permitting, or otherwise allowing an activity contemplated in subsection (1). Since the NEMA has not repealed the EIA provisions contained in the Environmental Conservation Act of 1989 the EIA regulations are still in force. A new NEMA is likely to be promulgated in 2002 that contains revised provisions for the implementation of IEM.

3.3 Conclusions

A culmination of events has facilitated the development and promulgation of the EIA regulations in South Africa. Many different Acts and Policies make specific reference to the protection of the environment, and some, specifically to the implementation of EIA.

An important fact to consider from this chapter is that although the EIA regulations will eventually be replaced by IEM regulations under the new National Environmental Management Act, the EIA regulations were in force at the time of this study. In addition, the EIA regulations and IEM are similar in structure and thus many of the constraints discussed in this research will be applicable to IEM as well.

The next chapter investigates the current state of the implementation of EIA in South Africa by the REAs, defines the participants in the EIA process and their roles and responsibilities. Some of the most significant constraints hindering the implementation of the EIA process are also identified.

4 THE CURRENT IMPLEMENTATION OF THE EIA REGULATIONS BY THE RELEVANT ENVIRONMENTAL AUTHORITIES

4.1 Introduction

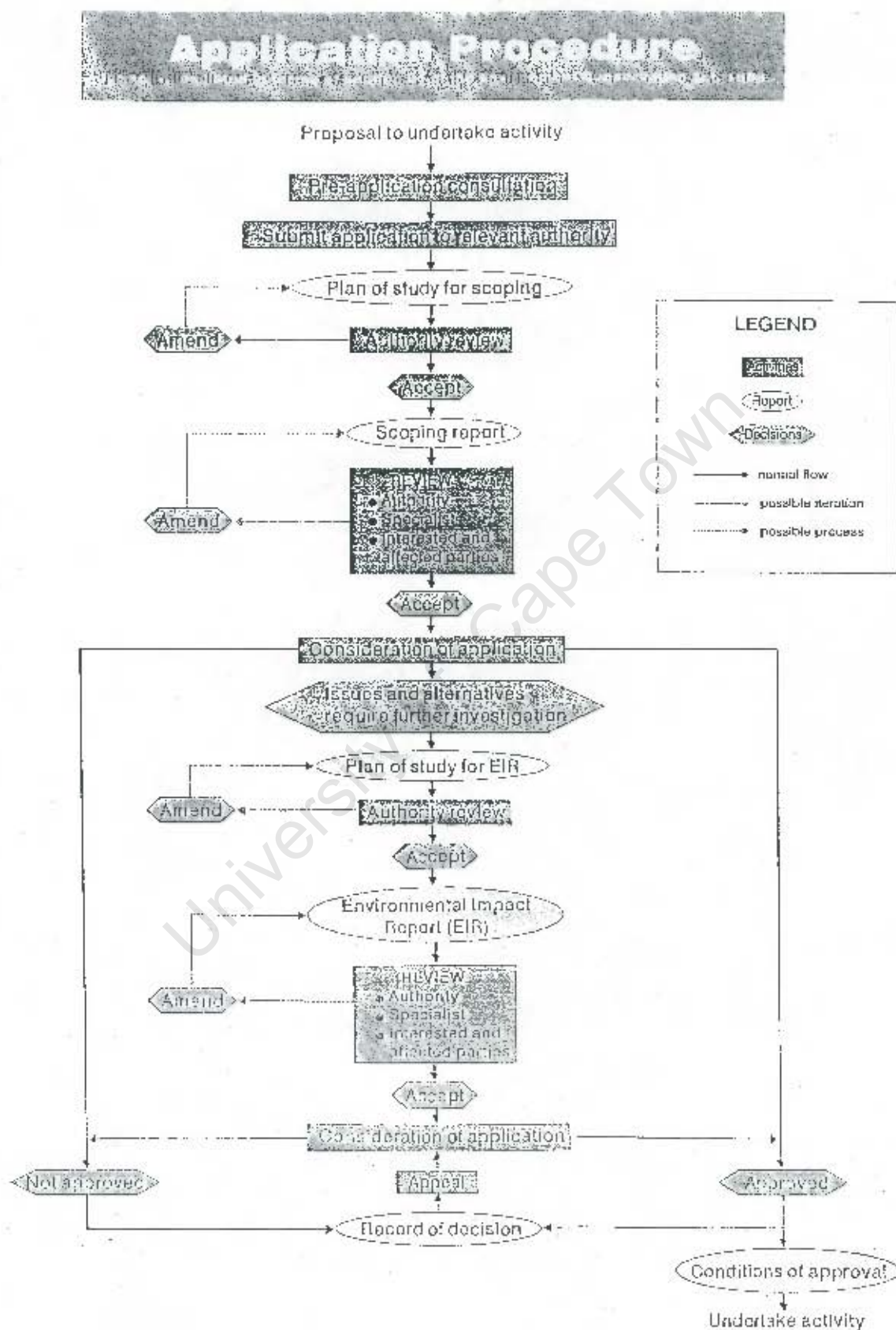
This section provides an outline of the current South African EIA procedure, defines the stages at which each of the participants becomes involved in the EIA process and discusses the roles and responsibilities of the key participants from whom the respondent groups are selected in Section 5. In addition, the EIA procedure is systematically examined in conjunction with all available local literature sources to identify some of the most prominent constraints hindering authority implementation of the regulations. This section, in conjunction with Sections 2 & 3 therefore forms the literature review for this research.

4.2 Outline of the current South African EIA procedure

South Africa has had the opportunity of drawing on three decades of research and experience accumulated by other countries from which to develop its current EIA procedure, illustrated in Figure 4.2.1. EIA systems developed throughout the world since the inception of NEPA 32 years ago have been a modification of the original NEPA procedure. Although EIA systems vary greatly, the generally adopted process of EIA can be represented as a series of iterative steps:

- consideration of alternative means of achieving objectives;
- designing the selected proposal;
- determining whether an EIA is necessary in a particular case (screening);
- deciding on the topics to be covered in the EIA (scoping);
- preparing the EIA report (i.e, inter alia, describing the proposal and the environment affected by it and assessing the magnitude and significance of impacts);
- reviewing the EIA report to check its adequacy;
- making a decision on the proposal, using the EIA report and opinions expressed about it; and
- monitoring/auditing the impacts of the proposal if it is implemented.

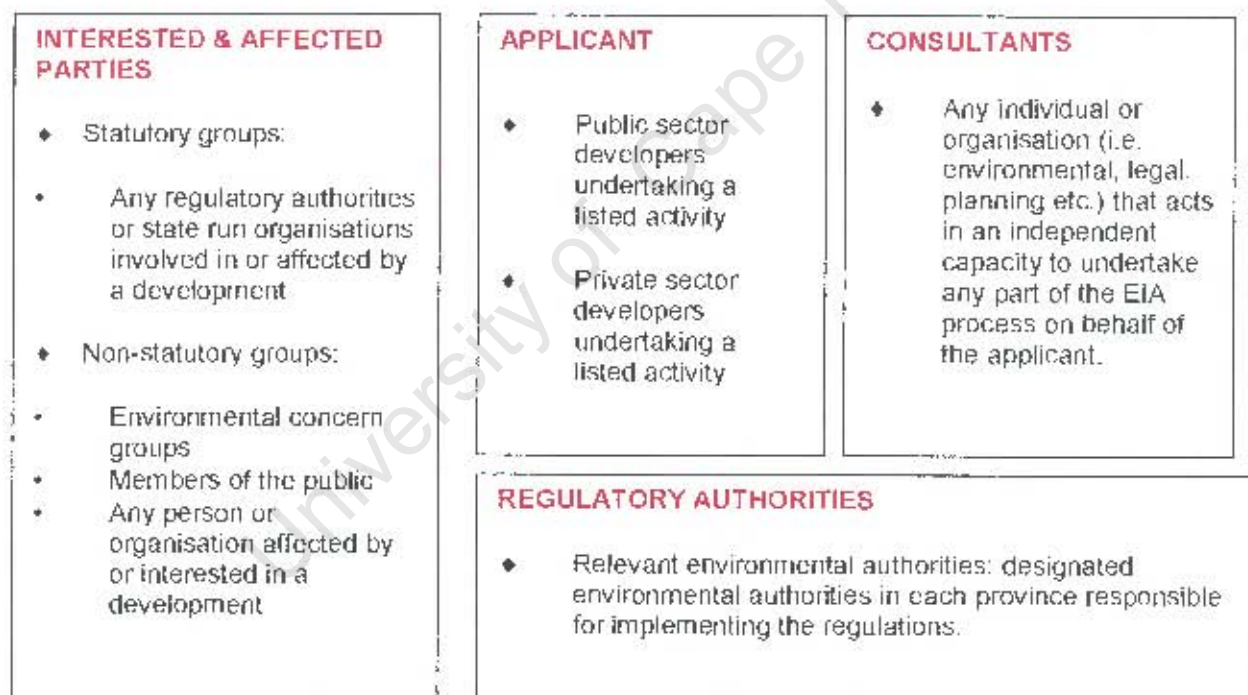
Figure 4.2.1: South African EIA Procedure



Source: DEA&T (1998, pg.18)

The current South African EIA procedure contains most of the steps listed in the generally adopted EIA procedure, but lacks any mechanism for integration with planning procedures and contains no monitoring, auditing and environmental management provisions, nor the extension of EIA to certain land use plans and policies, which were a feature of IEM. The EIA regulations were supplemented by EIA guidelines in 1998 (DEA&T, 1998). These guidelines, which are closely modelled on the IEM documents, provide a detailed account of the EIA procedure, requirements for the production of scoping and EIA reports and the roles and responsibilities of the participants in the EIA process. It is the EIA Guidelines in conjunction with the EIA regulations that are used to determine who the key participants in the EIA procedure are and the stages in the EIA procedure at which the different participants become involved. The participants in the South African EIA procedure can be divided into four main groups as presented in Figure 4.2.2.

Figure 4.2.2: The four key participant groups in the South African EIA procedure



The four key participant groups presented in the above diagram are individually presented and discussed in sections 4.3 to 4.6. The focus of these sections is on determining the stages of the EIA process in which each of the participants is involved, defining each of the participant groups and delineating their roles and responsibilities. The rationale behind such an undertaking is to develop an understanding of the key participants that will enable the selection of suitable respondent groups to include in the empirical study (see section 5). A detailed understanding of the roles and responsibilities of the participants in the EIA

procedure also facilitates the identification of key constraints hindering the implementation of the EIA regulations to be included in the research design (see section 5).

4.3 Regulatory Authorities

It is fundamentally important to be acquainted with all the REAs responsible for the implementation of the EIA Regulations in South Africa. In the context of this research it is vital to determine who is responsible for implementing the EIA regulations on a national, provincial and local level as these individuals will have to be approached to be included in the empirical data collection procedure of this study. A representation of the stages in the EIA process in which the REAs are required to become involved is illustrated in Figure 4.3.1.

The EIA regulations (No. 18261) promulgated on 5 September 1997 in terms of the Environmental Conservation Act, 1989 (Act 73 of 1989) identify the authorities tasked with giving authorisation for listed activities. The responsibility for implementing and enforcing the EIA regulations is designated to Relevant Environmental Authorities (REAs) in each of the nine provinces. REAs are listed in the Environmental Conservation Act, no.73 of 1989 as the Minister, Provincial Authority or Local Authority contemplated in section 4(2), (3) or (4) of the Act. According to section 3.1.4 of the EIA Regulation Guideline document of 1998, the National and Provincial Environmental Authorities have been designated as the REAs who should receive all applications for consideration. However, an application is not always the responsibility of Provincial or Local Authorities. Under certain circumstances listed under Section 3.1.4 (DEA&T 1998) the applications must be referred to the National Department of Environmental Affairs and Tourism.

In South Africa, at the time of this research, there were nine departments responsible for implementing the EIA regulations. These departments, presented in Figure 4.3.2, fall under different nomenclatures in their respective provinces. All REAs, at the time of the initiation of this study (1999), responsible for implementing the regulations in the nine provinces were provincial authorities.

Figure 4.3.1: The Involvement of the key participants in the EIA process

Key	
Applicant/Proponent – AP	Interested and Affected Parties – I&APs
Consultant – C	Specialist – S
Relevant Environmental Authority – REA	Minister – M
Other Relevant Authorities – ORA	Relevant MEC – RMEC
On Site Environmental Officer – OSEA	

EIA PROCESS	PARTICIPANTS INVOLVED
Proposal to undertake activity	AP/C
Pre-application consultation	REA/C/AP/ORA
Submit Application to authority	AP/C
Advertise development project applications	AP/C
Input into the Plan of Study for Scoping	AP/C/REA/I&APs/ORA
Compilation of the plan of Study for Scoping	AP/C
Submission of plan of Study for Scoping	AP/C
Authority Review of Plan of Study for Scoping	REA
Authority Decision	REA
Compilation of the Scoping Report	AP/C
Submission of a Scoping Report	AP/C
Review of the Scoping Report	REA/S/I&APs/CRA
Consideration of Application	REA
- Issue authorisation to undertake activity – RCD - Information should be supplemented by an EIR - Decline Application – ROD	
Appeal	AP/C/I&APs
Issues and Alternatives require further investigation	C/AP
Plan of study for EIA	AP/C
Authority Review of Plan of Study for EIA	REA
Acceptance of the Plan of Study for EIA	REA
Compilation of the Environmental Impact Report	AP/C
Submission of the Environmental Impact Report	AP/C
Review of the EIR (Relevant authorities, other authorities involved, specialists and all I&APs)	REA/ORA/S/I&APs
Consideration of application	
- Issue an authorisation with or without conditions - Reject the application – ROD	REA
Appeal	AP/C/I&APs
Consideration of Appeal	M/RMEC
Conditions of approval	RA
Undertake activity	
Construction, Operation and Decommissioning	AP/I&APs/REA

Sources: DEA&T (1997) and DEA&T (1998)

Figure 4.3.2: Departments responsible for implementing the EIA regulations in the nine provinces in South Africa in 1999

PROVINCE	DEPARTMENT RESPONSIBLE FOR IMPLEMENTING THE REGULATIONS
Western Cape	Western Cape Nature Conservation
Northern Cape	Department of Agriculture, Conservation and Environment
Eastern Cape	Department of Economic Affairs, Environment and Tourism
Gauteng	Department of Agriculture, Conservation and Environment
Kwa-zulu Natal	Department of Traditional and Environmental Affairs
North-West	Department of Agriculture, Conservation and Environment
Mpumalanga	Department of Environmental Affairs and Tourism
Northern Province	Department of Agriculture, land and Environmental Affairs
Free State	Department of Environmental Affairs and Tourism

It should be noted that the information contained in Figure 4.3.2 was accurate at the time of the compilation of this research, but that some provinces are currently in the process of delegating REA status to other Provincial Departments. Provision exists in terms of section 22(1) of DEA&T (1997) for provincial government to delegate Relevant Authority status to local authorities provided they have the *capacity*¹⁰ and competency to implement the regulations. Chapter 5 of the NEMA also allows for the devolution of power to promulgate EIA regulations to sectors (i.e. Land Affairs, Agriculture, Health, Housing and Local Government etc.) and to the Member of the Executive Council (MEC) of each of the provinces under section 3 (b). This permission is granted if the Minister or MEC is responsible for an organ of state that is charged by law with authorising, permitting, or otherwise allowing an activity contemplated in subsection (1).

The process to be followed in order for a local authority to be appointed as a Competent/Relevant Environmental Authority is contained in section 3.1.4.2 of DEA&T (1998). The Relevant Provincial Authorities [designated in the Government Gazette of 5 September 1997 (notice No. R. 1184) by the National Minister of Environmental Affairs and Tourism (E&AT) as a Competent Authority] must identify Local Authorities that could be designated by the Minister of E&AT to act as Competent Authorities. The Relevant

¹⁰ 'Capacity' refers to the minimum infrastructure and human resource requirements for authorities to implement the regulations efficiently. Authority Capacity is defined further under section 4.2.1.4

Provincial Authorities must in writing request the Minister to designate authority in this regard to the identified Local Authorities. The Local Authority must then follow the procedure designated in terms of section 22(1) of the Act as a Competent Authority for the implementation of the regulations.

Efforts have been undertaken to designate Local Authorities such as the Cape Metropolitan Council (CMC) with REA status in the Western Cape, however efforts have been hampered by a lack of funding (Laidler, *pers comm*, 1999). Further information suggests however that despite the prohibitive financial situation the process of adopting concurrent competence for EIA implementation is near completion in the Western Cape (Wiseman *pers comm*, 2000). The implementation of concurrent competence has to the knowledge of the author also been initiated in the Northern Province during the year 2000. In the other provinces, no endeavours during 2000 to allocate responsibility to local authorities were initiated.

4.4 Roles and responsibilities

According to Section 3.1.4.1 of DEA&T (1998), the responsibilities of the REAs include ensuring that the Applicant and/or Consultant and other authorities comply with the requirements of the regulations at the various stages of the application procedure. REAs are also responsible for inter-departmental consultation and harmonisation of administrative and decision-making processes that are essential for the effective implementation of the regulations. It is the responsibility of the National Department of Environmental Affairs and Tourism as well as each province to establish their own mechanisms for consultation and co-operation with other government departments.

REAs are required to consult with the Applicant and/or Consultant throughout the application procedure. This is essential to provide general guidance on procedures, information and reports required. It is also the responsibility of the REAs to provide the Applicant with any guidelines, as well as access to any other information in the REAs possession, that may assist the Applicant in fulfilling obligations in terms of the regulations.

It is the responsibility of the REAs to ensure that the evaluation/review and decisions required in terms of the regulations are done efficiently and within a reasonable time, and that the Applicant is informed immediately of any delay and is provided with a written explanation for any delay that may occur. REAs must also make recommendations during the authority review stages of the application procedure to improve or rectify procedures followed, information provided and environmental reports submitted. Furthermore,

according to Section 3.1.4.1 of DEA&T (1998), they must ensure that authorities, peers or consultants reviewing any procedures followed, information provided and environmental reports submitted by the Applicant and/or Consultant have:

'the ability to perform the evaluation tasks contemplated in these regulations efficiently, expertise in the area of environmental concern being dealt with in the specific application; the ability to timeously produce thorough, readable, and informative documents; and have good working knowledge of all relevant policies, legislation, guidelines, norms and standards' (pg.16).

It is also the responsibility of the REAs to try to keep the inputs required from the Applicant to the minimum that are necessary to make an informed decision on the application, without putting any limitation on the rights that interested parties may have in terms of the regulations.

The final responsibility of the REAs is their accountability as decision-makers. The REAs are responsible for decisions taken with regard to authorising identified activities.

4.5 Interested and Affected Parties

In the context of this study, I&APs are divided into statutory and non-statutory groups (see Figure 4.2.2). Statutory groups are any government authorities involved in or affected by the activities listed in schedule 1 of DEA&T (1989). Non-statutory groups include environmental concern groups, members of the public and any other individuals or organisations affected by or interested in participating in EIA's performed on schedule 1 activities. The stages at which the I&APs are required to become involved in the EIA process are contained in Figure 4.3.1.

The responsibilities of the I&APs are contained in section 3.1.3 of DEA&T (1998) and include:

- Providing input and comments during various stages of the EIA process.
- Providing their inputs and comments within the specific time frames as specified by the Applicant/Consultant and REA.

The Applicant is required to consider all inputs from I&APs during the legislated stages in the EIA process to determine whether the application requires revision or to motivate for or against alternative options. The decision-maker on the other hand should be informed of I&AP input in order to ensure that his/her decision was well informed and that due cognisance has been taken of all issues and concerns relating to the proposed activity.

4.6 The Applicant

The term Applicant refers to the individuals or organisations that apply to undertake activities identified under section 21 of DEA&T (1989). Applicants can be divided into public and private sector individuals and organisations (see Figure 4.2.2). The stages in the EIA process in which Applicants are required to become involved are listed in Figure 4.3.1.

According to Section 3.1.1 of DEA&T (1998), the Applicant is responsible for complying with all the requirements of the regulations. The responsibilities of the Applicant include, appointing an independent consultant who will, on behalf of the Applicant, comply with the regulations. In addition, the expertise and knowledge of in-house consultants may be utilised by the independent consultants to comply with the regulations. The Applicant must ensure that the independent consultant has expertise in the area of environmental concern being dealt with in the specific application, the ability to manage the public participation process required, and the ability to produce thorough, readable and informative reports. The consultant must also be deemed by the Applicant to have access to adequate systems to preserve all data gathered and a good working knowledge of relevant Environmental Impact Management policies, legislation, guidelines and norms and standards. The Applicant is responsible for all the processes, information, plans and reports produced in complying with the regulations and for ensuring that the consultant has no financial or other interest in the undertaking of the proposed activity, except from complying with the requirements in the regulations. The Applicant must also ensure that the Consultant provides the REAs with access to all pertinent information (DEA&T, 1998).

The Applicant is also responsible for the public participation process and for indemnifying the state from any liability arising out of the content of any report, procedure or action for which the Applicant or the Consultant(s) is responsible in terms of the regulations. The Applicant is also accountable for the potential impacts of activities being undertaken as well as managing these impacts.

4.7 Consultants

The question of who has the technical qualifications to conduct an EIA has not yet been comprehensively addressed in South Africa. At the time of this research, no system of accreditation for environmental consultants exists and there is an absence of requirements defining the practice of environmental consultancy. In the absence of an accreditation system, broad requirements for environmental consultants have been included in the regulations (See Section 3, DEAT 1997). These requirements are discussed in the third paragraph of this section.

At present, the practice of Environmental Consultancy includes individuals from a variety of disciplines and refers to anyone who acts on behalf of the Applicant and is capable of fulfilling the roles and responsibilities required of a consultant by DEA&T (1997), DEA&T (1998) and any other relevant legislation. The stages in the EIA process in which Applicants are required to become involved are listed in Figure 4.3.1.

Section 3.1.2 of DEA&T (1998) outlines the roles and responsibilities of the Consultant. The independent consultant acts on behalf of the Applicant in complying with the regulations and is responsible to the Applicant to ensure that he/she has expertise in the area of environmental concern being dealt with in the specific application, the ability to manage the public participation process required and be able to produce thorough, readable and informative reports. Furthermore, Consultants must have access to adequate systems to preserve all data gathered and possess a good working knowledge of relevant Environmental Impact Management, policies, legislation, guidelines, norms and standards. It is argued in section 6.8.3 that without an accreditation body, this will not be possible.

The Consultant is also responsible to the Applicant for all processes, information, plans and reports produced in complying with the regulations. The Consultant is also required to have no financial or other interest in the undertaking of the proposed activity, except from complying with the requirements in the regulations.

Consultants must also ensure that they provide the REAs with access to all relevant information relating to the project and to indemnify the government from any liability arising out of the content of any report, procedure or action for which the Applicant or the Consultant(s) is responsible for in terms of the regulations.

4.8 An assessment of the constraints hindering EIA implementation in South Africa

The aim of this section is to conduct a review of all relevant conferences, workshops, meetings, literature sources and personal communication with participants in the EIA process to determine as many constraints as possible that are perceived as hindering the implementation of the EIA regulations in South Africa. It is important to note that this review and the personal communication with EIA participants is part of the process that informs the development of the research design and therefore takes places prior to the first and second phases of the empirical research.

The information on the required roles and responsibilities of the key participants and the stages in which they participate in the EIA procedure (discussed in sections 4.3 to 4.7) will be used as a benchmark to assess where the implementation of the regulations falls short of the legislated requirements. Constraints will be discussed under the headings of the stages in the South African EIA process and any constraints not falling into these categories are placed under the heading 'other constraints' in section 4.8.8. All available South African literature as well as information from personal communication with participants in the EIA process is included, where relevant, to identify the constraints discussed in sections 4.8.1 to 4.8.8.

The reason for undertaking the identification and discussion of constraints in this systematic fashion is to ensure that every aspect of the EIA process is comprehensively covered. The process must be holistic to ensure that as many constraints as possible are included in the questionnaire that will be presented to the selected respondents during phases one and two of the empirical stage of this study. A detailed discussion of the two empirical research phases is discussed in section 5.

It is recognised that the review process and preliminary discussions with some of the main participants in the EIA process is not exhaustive and that according to the research design in section 5, the list of constraints will be refined and updated during the first empirical phase of the research. The compilation of the questionnaire is discussed in greater detail in section 5.

Some of the key constraints identified in the literature review are presented in this chapter, however, a summary of all the 42 constraints, identified during the literature review stage of this research and from preliminary discussions with EIA participants (Pre-phase 1), are contained in Appendix 2.

As mentioned in paragraph two, constraints will be discussed under the headings of the stages in the South African EIA process and any constraints not falling into these categories are placed under the heading 'other constraints'.

4.8.1 Alternatives/Design

According to DEA&T (1998, section 3.2.1.1) consultation between the REAs and the Applicant and/or Consultant is recommended at the earliest possible stage in the EIA process.

At an IAIA meeting (Western Cape Branch) held in Cape Town in January 1999, consisting of a cross section of EIA participants, it was generally noted that section 3.2.1.1 of DEA&T (1998) is not being adequately implemented. In many cases no general guidance on procedures, information and reports were given to the Applicant/Consultant in the early stages of the EIA process by the REAs.

In addition, it was noted that delays are caused to the Applicant/Consultant and to the REAs after the completion of the project design as many of the key environmental issues are not discussed during the initiation of the EIA process when there is still flexibility in the design of the proposed development.

4.8.2 Screening

In an attempt to relieve understaffed government departments with some of the burdens involved in the administration of the regulations, several requirements are placed on the Applicant. One such obligation is contained in DEA&T (1998, section 3.2.1.4) and requires the Applicant to ensure that the opportunity to participate in the EIA process is given to all interested and affected parties, including government departments that may have jurisdiction over the activity.

The author discovered that several separate acts could be applicable to a particular activity and 17 national, 14 provincial and numerous local authorities also have the potential to become involved in a development. It is possible that the Applicant may not be aware of all departments having jurisdiction, and there is no obligation on the authority administering the regulations to advise the applicant of all of these. If the applicant does not contact and consult with the applicable authorities, this could lead to delays in the EIA process and added costs for the applicant later in the process. The delays are mostly caused by other

authorities who require time to determine whether the development complies with the relevant statutes they are responsible for enforcing.

It can therefore be said that the regulations are not co-ordinated with other legislation upon which they impact or in respect of which EIA's are required. For example, under the 1997 EIA regulations, certain proposed developments that require rezoning can only be given authorisation through the REAs. There are no statutes in place that require the REAs to consult with the Transitional Local Council (TLC) or provincial authorities responsible for approving or rejecting rezoning applications. In addition, the regulations make no attempt to integrate the EIA approval process with the process required by provincial land use planning or town planning. One of the key resulting problems, identified by Winstanley (1998) is that:

'it is not always clear to the developer whether it may apply for rezoning and EIA approval simultaneously as there is nothing in statutory law that prohibits it from lodging the two applications at the same time' (pg.389).

However, some local authorities refuse to consider the rezoning application until the outcome of the application under the regulations has been made known. The potential for delay in this situation is great and leads to uncertainty for the Applicant and therefore the possibility of increased costs.

4.8.3 Scoping

According to section 3.1.3 of DEA&T (1998) the I&APs are responsible to provide input and comments during the various stages of the EIA process. This being the case, several interested parties who regularly become involved with projects requiring EIA have stated that comments made by I&AP specialists on scoping and EIA reports are often ignored by Consultants without any written justification to the individuals making the comments as to why their recommendations were rejected (Maze, Black and Lakhani *pers comm.*, 1999). If sufficient attention is not given to the comments and responses of the I&APs it is likely that delays will be experienced later in the EIA process when the same objections are raised again. This situation also places an administrative and enforcement burden on the already under-funded REAs who are responsible to ensure that the Applicant/Consultant complies with the requirements of the regulations, including their responsibilities at various stages of the application procedure.

4.8.4 EIA report preparation

There are no requirements defining the practice of environmental consultancy in South Africa and there is no body or statute to regulate who practices as an environmental consultant. There is also no mandatory requirement compelling consultants to register with a regulatory body, which gives any individual or organisation *carte blanche* to fulfil the role of a consultant. In many cases, individuals who are either unsuitably qualified or lack the appropriate experience to undertake the EIA procedure produce reports of a poor quality that are generally rejected by the REAs. The reports usually have to be re-written, a process that wastes not only the applicant's money, but also the REAs limited resources (Mitha, Botma, Laidler, Burger and Allen, *pers comm.* 1999).

Another issue that arises as a result of the lack of accreditation of Consultants is the absence of a system for selecting which consultants fulfil the criteria stated in section 3(1)(d)(i-vi) of DEA&T (1997). This section states that it is the responsibility of the Applicant to ensure that the environmental Consultant under their employ is equipped with sufficient expertise to competently deal with the application. In the absence of a recognised body to which competent consultants should be registered, experience shows that the Applicant will in many cases select the services of the least expensive consultant rather than the most competent (Cohen and Thomas, *pers comm.* 1999). The selection of an incompetent Consultant resulting in the production of poor reports, wastes the resources of both the Applicant and REAs and can contribute to the discrediting of the EIA process.

4.8.5 Review

Due to poor civil service salary structures, individuals with experience in the field of EIA often seek higher paid positions outside of government (Botma, *pers comm* & Winstanley 1998, pg 393). The result is often improperly reviewed Environmental Impact Reports (EIR's) and/or a lengthy review process. Many of the authorities implementing the regulations also hail from backgrounds that ill equip them to deal with the wide range of social and economic issues often contained in an EIR. A lack of experience in EIR review also inhibits decision-making, as an authority may not feel sufficiently confident to make a decision on a particularly large or sensitive development. Wood (1999) states that:

'It is apparent that the decision to grant authorisation is sometimes being made by overwhelmed provincial staff on narrow nature conservation or

other grounds, rather than on the full range of factors normally considered in internationally recognised good EIA practice' (pg. 5).

Another significant constraint identified by Laidler (1999, *pers comm*) and Cohen (1999, *pers comm*), is the lack of outsourcing (hiring consultants or other individuals capable of aiding in the review process) when authorities are swamped with, or lack the technical expertise to review a scoping or EIA report. EIR's often contain technical information from a number of different specialists. In some cases the technical information may be outside the field of expertise of the Authorities reviewing the report. The Scoping or EIA report is therefore in many cases authorised without having received the expert scrutiny that it is due. This research therefore concurs with Winstanley (1998) who comments that:

'given the pressure under which staff work and the inability of anyone to be an expert in all fields, it would not be surprising if the assessment of applications did not always bring the necessary level of scientific understanding to the proposal' (pg. 393).

4.8.6 Decision - making

Sadler (1996) determined in *'The International study on the Effectiveness of EIA'* that a significant problem hindering the implementation of the EIA regulations is the copious number of legal suites filed against departments responsible for the implementation of the regulations, especially in the United States. With the introduction of compulsory EIA in South Africa, and in conjunction with the low refusal rate [estimated to be less than 2% of applications, Wood (1999, pg. 55)], many legal objections to decisions made by REAs are likely to be lodged in the future by concerned parties. Considering the budgetary constraints currently experienced by the REAs, protracted legal battles would serve to deplete authority capacity further.

Another constraint cited by EIA participants are inconsistencies in the decision making process. Many of the departments in the different provinces responsible for implementing the EIA regulations divide the geographic area under their jurisdiction among the REAs by assigning a specific area to an individual. A situation can arise where different REAs review a similar type of activity in their respective areas, with a similar receiving environment. Inconsistencies in decision-making arise when one REA gives authorisation for the activity to commence and his/her counterpart refuses a similar application.

4.8.7 Monitoring

With the absence of a mandatory Monitoring and/or Auditing process there is no way of determining whether the conditions of an environmental contract are adhered to and that no activity occurs during the project life cycle that may detrimentally affect the environment. In addition, REAs have no way of receiving feedback as to whether the EIA has been effective in mitigating negative environmental impacts or whether a situation has arisen where a breach in the environmental contract or any other legislation has occurred.

The South African component of Sadler's international study on EIA effectiveness was conducted by the IAIA and the Environmental Evaluation Unit (EEU) based at the University of Cape Town (UCT). The results of this study revealed that one of the key activities in the IEM process not being performed optimally was monitoring. The study was performed in 1995 and has not been updated since the inception of the 1997 EIA regulations. However, studies such as Wood (1999) confirm that monitoring is still an area of weakness in the South African EIA system, particularly due to the lack of provincial budget:

'The problem of crippling under-funding and under-staffing of provincial and local authorities means that they must rely on the complaints of neighbours and the integrity of developers and their consultants for information about non-compliance' (pg 56).

At an IAIA conference held in 1998, Weaver *et al* (1998) presented a paper proposing an initial set of requirements that should help to define best practice for EIA in South Africa. The requirements were derived from the experience of the authors and EIA case studies. In terms of international and local experience, the authors consider best practice EIA to involve the inclusion of a monitoring and review program (pg.302). South African EIA, as discussed in the first paragraph of this section lacks such a monitoring and review programme.

4.8.8 Other constraints

Scale of Activities

There is no reference in DEA&T (1997) to the scale of activities that require EIA, resulting in confusion over whether all activities should be subject to EIA no matter how minor they are. In addition, there is no mention of activities that may be subject to exemption from the regulations. The omission of such information is likely to result in an unnecessary amount of applications being forwarded to the REAs that in many cases may not require an EIA.

Discussions with Botma (1999) of the Gauteng DEA&T indicated that the Department was developing a policy covering blanket exemptions for certain activities that were either of an insignificant scale or in an environment where impacts were already known and were considered insignificant. To the knowledge of Botma (1999, *pers comm*), no other provinces were considering the implementation of blanket exemptions, indicating to the author that the absence of the information mentioned in paragraph one of this section from the regulations may result in significant constraints.

Omissions in the Regulations

There are several principle omissions in the EIA regulations, including densification of urban development, mining, disturbance of vegetation and landscape, marine dredging and dumping, structures associated with mariculture, disturbance of wetlands, construction of towers except telecoms, and inland marinas and harbours. Since the listed activities are not comprehensive the result is that certain activities are not covered by the regulations. This could pose a serious constraint, as certain activities would be allowed to proceed unregulated.

Ambiguities in the Regulations

One of the responsibilities of the REAs is to try to keep the inputs required from the Applicant to the minimum that are necessary to make an informed decision on the application, without putting any limitation on the rights that interested parties may have in terms of the regulations. This requirement was sensibly instituted as a time saving measure for authorities reviewing EIA reports, however difficulties arise when interpreting the subjective content in the absence of guidelines. The different participants, namely the REAs, Applicants and/or Consultants and I&APs may have different perceptions of what the required minimum input is to make an informed decision. The Applicant would wish to provide the absolute minimum amount of information to obtain authorisation for an activity as time spent waiting for authorisation translates into financial costs in terms of delayed project completion. In most cases, the Consultant will tend towards fulfilling the needs of the Applicant since client satisfaction generally delivers future employment opportunities or referrals. On the other hand, the Consultant may feel an obligation to produce a report that is unnecessarily lengthily in order to ensure that the client perceives that they are getting their moneys worth. Consultants may also produce such a report if they are unsure of what is required and therefore to be safe, include a plethora of additional, and in many cases superfluous, information.

Interested and Affected Parties on the other hand would rather see a more detailed and time consuming process to ensure that all their needs are taken into account during the decision making process.

The differing perceptions between the EIA participants could cause disagreements over report content resulting in delays to the process.

Interdepartmental communication

Work shops, meetings, conferences and other forms of communication are lacking inter-provincially between REAs responsible for implementing the regulations (Laidler and Allen, *pers comm*, 1999). The result is that many key constraints and solutions to address such constraints, identified by REAs during the course of implementation in each of the provinces are not shared with their counterparts. This situation can prevent mutually beneficial exchanges of the achievements and constraints relating to the implementation of EIA. Without an interchange of information between REAs in the respective provinces, progress towards improving the regulations will be inhibited and therefore protracted.

Training

This research concurs with Wood (1999) when he states that '*it is apparent that the decision to grant authorisation is sometimes being made by overwhelmed provincial staff on narrow nature conservation or other grounds*' (pg.5).

Many of the relevant authorities are unsuitably trained or qualified to implement the regulations optimally. Most of the departments responsible for implementing the EIA regulations offer no training, workshops or short courses to enhance the ability of the authorities to implement the regulations (Struwig and Moremi 1999, *pers comm.*). The result is that many of the REAs are unsuitably trained or qualified to implement the regulations optimally.

Lack of Authority Capacity

The lack of authority capacity to implement the regulations is generally cited in the literature as one of the key constraints hindering the implementation of the EIA regulations. A variety of literature sources identify the need for authority capacity to implement the EIA regulations. Davies *et al* (1998) identifies the necessity for capacity:

'The implementation of the recently promulgated regulations pertaining to EIA requires that a certain level of capacity should exist within the relevant authority to successfully perform the assigned responsibilities' (pg.86).

Granger (1998), in a paper presented at the IAIA conference in New Zealand expressed concern about the lack of financial and staff capacity within provincial and local government to deal effectively with applications involving EIA. Wood (1999) conducted a study reviewing the implementation of the EIA regulations in South Africa and came to the conclusion that:

'Generally, the capacity of government at national, provincial and local levels needs to be increased to reduce the consultants (and hence, indirectly the developers) stranglehold on South African EIA' (pg.55).

At an IAIA meeting held in 1999, a presentation was given by Dennis Laidler, the Director of Western Cape Nature Conservation, identifying some of the most significant problems experienced in the implementation of the EIA regulations. Capacity was cited as one of the most pressing issues.

In addition, Winstanley (1998), notes in an article reviewing constraints associated with the EIA regulations one year after their promulgation that: *'Almost all of the provincial authorities are under-resourced as far as the implementation of the regulations is concerned' (pg.393).*

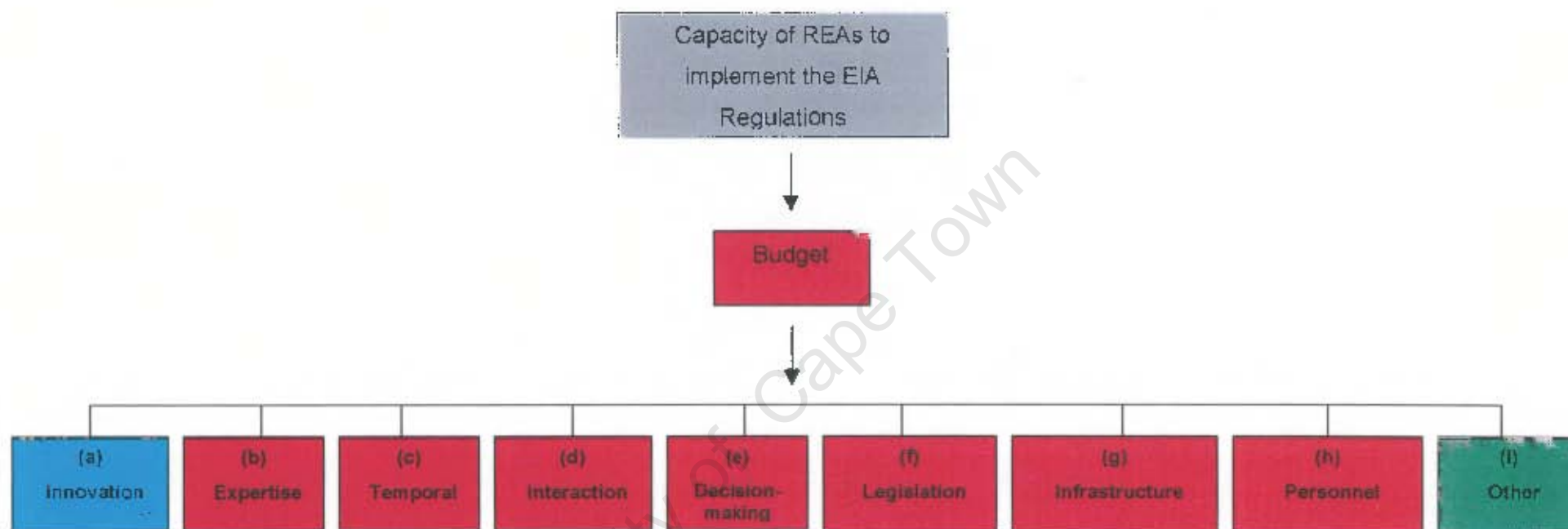
Despite the consensus of opinion in the literature regarding the lack of capacity faced by the REAs as being one of the key constraints hindering the implementation of the EIA regulations, none of the sources using the term offer any comprehensive definition of what the term should encompass. It is therefore necessary to define this term in the context of this research. Before this term is defined it is also imperative to be aware that many of the constraints listed in sections 5.6.1 – 5.6.7 are dependant on the provincial budget allocations in some way for their implementation. A lack of provincial budget therefore underpins to a greater or lesser degree the sub-standard implementation of many of the requirements of the regulations. This postulation is discussed further in the next section.

4.9 Authority capacity

Capacity is a complex and multi-faceted term to define and is usually discussed with reference to the general capabilities of an organisation. However, Weiss (1999) points out that analysis at this level of generality has yielded few insights: *'At most it has served as a reminder of the simple but important point that the state is not uniformly capable in all areas of policy implementation'* (pg.89).

In the context of South African EIA, a component of implementing the EIA regulations such as undertaking a sight visit requires a different type of capacity to monitoring enforcement of the terms and conditions of the environmental contract or EIA report review. It is argued that the idea of a generalised state capacity is meaningless due to the extensive differentiation in the usage of the term. For example, the capacity to employ external consultants shares little with the capacity to provide adequate information to aid in decision making. Similarly, the innovative capacity to develop guidelines for authority review of an EIR remains distinct, in many ways, from the capacity to enforce an on site environmental contract. The general capacity of authorities is thus an extremely difficult, if not impossible concept to define. It is therefore argued that there can be no such thing as capacity in general, merely capacities in certain areas of EIA implementation. This research therefore defines authority capacity not as a generalised all encompassing term but rather as a sum of its specific components. The following components of authority capacity, contained in Figure 4.9.1 were identified and developed.

Figure 4.9.1: Components of Authority Capacity

**KEY:**Green – Potentially¹¹ budget dependantBlue - Partially¹² budget dependantRed - Mostly¹³ budget dependant¹¹ The component could either be mostly, partially or non-budget dependant¹² In most cases it is true to state that some budgetary input is require in order to facilitate the effective working of the these components of authority capacity , however, budget is not the only factor that determines the efficiency with which these components are employed.¹³ In most cases it is true to state that budget is the primary factor that facilitates the effective working of these components.

Each of the components are discussed according to the letter allocation in Figure 4.9.1. Before the components of authority capacity are discussed, the term budget requires brief delineation. Budget refers to the current fiscal contribution allocated by the Department of Finance for EIA implementation in each the nine provinces. The budget is allotted individually to the provinces and is designed to reflect their specific requirements and needs. Details of the approximate budgetary allocations to each of the Provinces for the year 1999/2000 are provided in Section 5 of this study.

Each of the components of authority capacity are now briefly elaborated upon in sections (a) – (h):

(a) Innovative capacity

The term innovative capacity is defined for the purposes of this research, according to a definition by Gran (1996) as, '*a conscious, active, interventionist change process in contrast to a structurally induced change*' (pg.2). This definition can be divided further into four interrelated processes, modified from the original definition formulated by Gran (1996):

1. The generation of a new idea, a new way of doing things that in some sense is considered better, more valuable than the old way.
2. The dissemination of the idea in a broader collectivity.
3. The implementation of the idea in practice, at an institutional level, having the effect of changing the existing status quo.
4. Allowing for flexibility and feedback from experience (iterative process).

Innovation cannot be said to be mostly budget dependent since it begins in the mind and is a natural function of the human brain. However, it could also be argued that budget or reward could enhance the frequency and quality of the generation of innovative ideas. It could be further argued that money can buy people who are known innovators. In addition, in order for innovation to be executed in practice in the context of EIA implementation, varying degrees of budget are required.

Taking into account the above arguments and erring on the side of caution, since an abstract concept is being dealt with, innovative capacity, as defined in this research is said to be *partially* budget dependant.

(b) *Expert capacity*

Expert capacity refers to a combination of the different skills and knowledge possessed or having the potential to be possessed collectively by REAs. Expert capacity has the potential to be enhanced in four primary ways, although these are not the only ways in which this can occur:

1. External and internal training courses.
2. Knowledge gained through experience.
3. Suitable academic qualifications of REAs.
4. Outsourcing to gain the expertise of professionals.

The ability of a specific department to enhance its expert capacity depends predominantly on budget since training courses require a capital investment in the form of currency or time. Individuals possessing knowledge as a result of experience, and suitable academic qualifications are sought after commodities and require, in most cases, a capital investment to either ensure their continued loyalty or to entice them into employment. Outsourcing to gain the expertise of professionals to supplement existing personnel capacity also warrants capital expenditure.

It is therefore postulated that expertise capacity is *mostly* budget dependant.

(c) *Temporal capacity*

Temporal capacity refers to the time available in which the REAs are able to complete their designated roles and responsibilities in terms of the requirements contained in DEA&T (1997) and DEA&T (1998). Available time could be construed as being directly proportional to personnel capacity, since a greater number of staff would equate to a greater number of available personnel hours. For example, the turnaround time of an EIA is in most cases directly related to the number of people who are tasked with review. However, the relationship does not tend towards infinity, as a ceiling limit of REAs will be reached where employing any further individuals would not improve the ability of the REAs to fulfil their designated roles and responsibilities. It could also be stated that expertise, innovation, interaction, budget, decision-making and infrastructure also influence temporal capacity to greater and lesser degrees. However, since temporal capacity seems to be predominantly dependent on personnel capacity it is argued that temporal capacity is *mostly* budget dependent.

(d) *Interactive capacity*

The types of interaction required of the REAs by DEA&T (1997) and DEA&T (1998) are discussed in greater detail in sections 4.8.1 to 4.8.7 of this document. The types of interaction will therefore be mentioned in summary below.

According to section 3 of DEA&T (1998) REAs have been designated the responsibility to undertake the following types of interaction with other participants in the EIA process:

- REA interaction with other Authorities

This refers not only to interaction between REAs in each of the provinces but also to interaction between REAs and other authorities involved with an application (i.e. Department of Housing and Local Government, Department of Water Affairs and Forestry, National and Provincial Parks Board, Planning and Health, etc.).

- REA interaction with the Applicants and/or Consultants

According to section 3.2.1.1 of DEA&T (1998) consultation between the Applicant and/or Consultant is recommended at the earliest possible stage in the EIA process. Thereafter, a process of continued interaction is encouraged and mandated throughout the EIA process.

- REA interaction with the public and other I&APs.

The REAs are responsible for interacting with or on behalf of the public and other I&APs in a number of ways including:

- Ensuring the public participation procedure followed during the EIA process is adequately implemented by the Applicant and/or Consultant.
- Acting on any comments, issues or objections that the public and any other I&APs might raise directly with the REAs regarding a development.
- Ensuring that these comments, issues and or objections are adequately documented and addressed in the EIA by the Consultant

It is argued that during the process of interaction other components of capacity including personnel, expertise, budget, infrastructure and decision-making capacity strongly influence the success with which the interaction takes place. It is therefore argued that interactive capacity is *mostly* budget dependant.

(e) Decision-making capacity

The capacity for Authorities to make decisions, choices and judgements regarding various stages of the EIA process and associated activities is referred to as decision-making capacity.

The assessment of an individuals or organisations ability to make decisions is difficult to define since decision making is an abstract and subjective process. It is therefore difficult to assess the degree to which decision making is budget dependent. However, during the literature review stage of this research as well as communication with participants in the EIA process certain attributes of individuals and organisations were indentified that are postulated as being essential to effective decision-making. Some of these key attributes, which are interrelated, include:

- Experience, which is related to the number of years of active involvement in a particular field, which in this case is EIA implementation.
- Expertise, which is defined in section (c).
- Confidence, which is strongly influenced by the number of years of experience possessed by an individual or collectively by an organisation as well as their expertise in a particular field.

In addition to the above, it is argued that capacity to make decisions is influenced by innovative, temporal, personnel and interactive capacities. For example, a greater number of personnel, the availability of more time and skilful interaction with the relevant participants in the EIA process could enhance the decision-making capacity of the REAs. Innovation may also contribute positively towards the development of new decision-making methodologies and guidelines and unique ways of implementing them. Many more examples could be cited of the positive influence that these capacity components have on decision-making capacity.

Taking into account the arguments above, it is argued that decision-making capacity is *mostly* budget dependant.

(f) Legislative capacity

Legislative capacity refers to two specific areas. Firstly, the authority that is delegated to REAs to implement and enforce the regulations and secondly, the use of state resources (such as the police force and district attorneys) to ensure that the law is complied with.

It is correct to state that the REAs possess the legislative authority and have reasonable access to state resources, in order to enforce an act of non-compliance with the regulations. However REAs might not possess the temporal, personnel, infrastructural, interactive and decision-making capacity to investigate, manage and if necessary develop a case against an offender for an act of non-compliance with the regulations.

An example would be if a member of public approached an REA to inform them of a breach in legislation by a developer. The REAs would have to undertake a site visit to investigate and confirm the complaint, which would involve temporal, personnel, decision-making and infrastructural capacity. If the complaint was valid, preliminary interaction would have to take place with the offender, and if steps to comply were not undertaken, further interaction would be initiated and eventually an evidence gathering process and the undertaking of a legal investigation if deemed necessary.

With reference to the above example, it is argued that legislative capacity is supported by a number of components of capacity that are mostly dependant on budget, thereby also rendering legislative capacity *mostly* dependant on budget.

(g) Infrastructural capacity

Infrastructural capacity, in the context of this research refers to the sum total of the facilities, services and equipment possessed by or at the disposal of an organisation. Some examples include:

- Services such as interactive web pages or hardcopy documentation to inform and educate users about the EIA process or other functions of the REAs.
- Facilities to store applications, scoping and EIA reports.
- Access to vehicles, offices, computers, faxes and other resources.

It is argued that infrastructural capacity is directly influenced by the quantity of budget allocated to it, with a larger budget allowing the REAs to develop greater infrastructural capacity and lesser budget allowing the development of a lesser infrastructural capacity. It can therefore be stated that in terms of the definition applied in this research, infrastructural capacity can be said to be *mostly* budget dependant.

(h) Personnel capacity

Personnel capacity refers to the number of REAs employed to implement the regulations in each of the nine Provinces as well as the competency with which REAs undertake the tasks for which they are responsible.

The number of personnel is different in each of the provinces and is influenced primarily by the budget allocation to personnel employment, but also by the needs of the department concerned. For example, an unlimited budget would not necessarily create a situation where unlimited REAs would be employed. REAs would be employed based primarily on the workload that each of the departments would be required to undertake.

In terms of the capacity diagram (see Figure 4.9.1), the competency of the REAs would be strongly influenced by their innovative, expert, decision-making and interactive capacities. It is argued that personnel exhibiting desirable qualities such as the above mentioned components of capacity would demand a higher cost of employment than individuals who do not.

It follows, that since both the numbers of employees as well as their competency are directly influenced by budget that personnel capacity is *mostly* budget dependant.

(i) Other capacity component

'Other capacity component', refers to any other component of capacity, not identified in sections (a) – (h) in Figure 4.9.1 that influences authority capacity and could either be mostly, partially or non budget dependant. These components will be identified, if they arise during the analysis of the results of this research.

4.10 Conclusions

From the literature review and discussions with participants in the EIA process, it is evident that many constraints have arisen since the promulgation of the EIA regulations that hinder its implementation. It is clear from this research that authority capacity cannot be defined in generalised terms and has therefore been divided into what this study postulates are its key components.

The next chapter describes the methodology for determining the most significant constraints hindering the implementation of the EIA regulations and for testing the validity of the hypothesis.

5 RESEARCH DESIGN AND METHODOLOGY

5.1 Introduction

The goal of this chapter is to delineate the research design and the methodology for data collection that has been employed in this study in order to optimally address the research aim, objectives and hypothesis.

Research design is the plan or blueprint according to which data are to be collected to investigate the research question or hypothesis in the most rigorous and comprehensive fashion.

Before the selection of a research paradigm is discussed it is important to demonstrate how this study has based its research design on two key elements that aid in producing analyses and explanations that are convincing.

5.2 Reliability, accuracy & validity

Perhaps one of the most challenging and difficult tasks in any type of research is convincing not only yourself but others that the explanations which are drawn from the empirical data are systematically and transparently obtained. The methodology needs to demonstrate that the research was conducted in a rigorous fashion and that every attempt was made to produce well-founded conclusions. There are two key elements, which need to be focused on and incorporated into a research design in order to produce convincing explanations. These two key elements are well known ways in which social science research is judged and they are mentioned in a variety of literature sources including Mason (1996), Bailey (1996), and Denzin and Lincoln (1997). Research methods and techniques, through their data collection, analyses and explanations should hope to achieve:

- 1) Reliability and accuracy of method; and
- 2) Validity of data.

5.2.1 Reliability and accuracy of method

Since a joint paradigmatic approach to data collection and analysis is adopted in this study (See [REDACTED]), it is necessary to briefly conceptualise these two paradigms in terms of traditional assumptions regarding their reliability and accuracy of method. Conventional

measures of reliability are traditionally associated with the quantitative paradigm where standardised research instruments are used to a greater degree than they are with qualitative research.

Huysamen (1994) argues that reliability is often measured by the controlled and replicable manner in which scientific data is obtained. The logic is that, if you measure the same phenomenon more than once with the same instrument, then you should get the same measurement. Generally, in the context of a purely quantitative research paradigm reliability is conceptualised in terms of how reliable, precise and accurate the research instruments are. It is argued that much of this theory is premised on the assumption that methods of data generation can be conceptualized as tools, and can be standardised, neutral and non-biased. Much of the qualitative literature takes issue with the above assumptions. One criticism of the conventional measure of quantitative reliability is drawn from Mason (1996):

'It is possible to argue that an obsession with reliability – which may occur precisely because it can apparently be measured – inappropriately overshadows more important questions of validity, resulting in a nonsensical situation where a researcher may be not at all clear about what they are measuring (validity), but can nevertheless claim to be measuring it with a great deal of precision (reliability).' (pg.146).

Since the methods for generating data in this research are to a large extent non-standardised, there is no way of performing simple reliability tests because the data generated will not take the form of a clearly standardised set of measurements. Thus it can be said that although qualitative research should be concerned about reliability and accuracy, it is in a different sense to the quantitative paradigm. In the context of this research, which draws from both paradigms, reliability refers to the task of ensuring and demonstrating to others that the data collection methodology and analysis of the data have not only been appropriate in addressing the aims, objectives and research hypothesis, but also thorough, rigorous, honest and accurate. Reliable results are those that have been systematically and transparently obtained.

5.2.2 Validity of data

Validity of data in its most general terms is a judgment about whether data analysis measures, explicates or illuminates whatever it claims to measure, explicate or illuminate.

Two widely used methods of demonstrating the validity of data generation and data analysis are discussed below.

1) Validity of data generation

Validity of data generation involves determining what information the data sources and data generation methods can potentially supply, and how well they can do this. In the case of this research, the interview techniques and statistical analysis of the data produced were constantly reflected upon to ensure that these strategies are the most effective methods of fulfilling the aims and objectives of this study and qualifying the research question.

2) Validity of interpretation

This type of validity is concerned with data analysis and the interpretation on which the analysis is based. The data collected by this study are qualitative responses based on semi-structured interviews. Numerals are then selected by the respondents to firstly rate and then rank a series of statements derived from the responses (See sections 5.4 & 5.5). Appropriate and specific statistical techniques are applied to the generated data to ensure validity of interpretation (See sections 5.4 & 5.5). The authors opinions and perspectives also play an important role in the analysis of the data and since these cannot be scientifically tested to ensure the validity of the author's interpretation of the data, peer review will determine the reliability and accuracy of the assumptions and determine whether the data was analysed in a rigorous fashion. The peer review mentioned in the previous sentence refers not only to the examiners of this dissertation, but also to all future readers.

5.2.3 Conclusions on reliability, accuracy and validity

Throughout the application of the research methodology, reliability and accuracy of data and the validity of interpretation in relation to the research question will be reflected upon as a means to enhance the credibility of this research. The rational behind the selection of a research paradigm in which to undertake this study is presented and discussed in the next section.

5.3 Rationale for the selection of a research paradigm

5.3.1 Introduction

Two dominant research paradigms, the quantitative and qualitative are most frequently employed in the research design of a study. However, there is much debate surrounding their use and application. This section explains the rationale behind the selection of a dual paradigmatic approach.

5.3.2 Origins of the quantitative and qualitative paradigms

Both paradigms have their origins in 20th Century philosophical thinking. Creswell (1994) gives an account of the history and celebration behind each of the paradigms. His account is précised as follows:

'Quantitative research is termed the traditional, the positivist, the experimental, or the empiricist approach. The methodology of the quantitative paradigm comes from an empiricist tradition established by such authorities as Comte, Mill, Durkheim, Newton, and Locke' (pg.5).

The Qualitative paradigm is termed the constructivist approach, or the post positivist or post-modern perspective. It began as a counter-movement to the positivist tradition in the late 19th century through writers such as Dilthey, Weber, and Kant (Creswell, 1994).

5.3.3 Paradigms in the context of this research

Three prominent schools of thinking have arisen since the birth of the paradigm debate namely the '*purists*', '*situationalists*' and '*pragmatists*'. The purists argue that paradigms and methods should not be mixed, the situationalists assert that certain paradigms and methods are appropriate for specific situations; and the pragmatists attempt to integrate paradigms and methods in a single study. If one could classify the approach of any one study into these narrow definitions, then as far as a research paradigm is concerned, a pragmatist approach is appropriate to this study because the quantitative and qualitative paradigms are being used side by side, drawing on the application of their different methodologies to best suite the specific research context encountered in this study.

There have been many attempts to define the paradigm of qualitative research and to determine whether or not it can or should be separated from the quantitative paradigm. Smith (1983), Lincoln and Guba (1985), Neuman (1991) and Creswell (1994), and other prominent research experts have addressed this issue in great depth. Some of the main assumptions concerning the differences between the two paradigms are presented in Table 5.3.1. These differences are based on the ontological, epistemological, axiological, rhetorical and methodological assumptions of the two paradigms.

Table 5.3.1: Quantitative and qualitative research paradigm assumptions

Assumption	Question	Quantitative	Qualitative
Ontological Assumption	What is the nature of reality?	Reality is objective and singular, apart from the researcher.	Reality is subjective and multiple as seen by participants in a study.
Epistemological Assumption	What is the relationship of the researcher to that researched?	Researcher is independent from that being researched.	Researcher interacts with that being researched.
Axiological Assumption	What is the role of values?	Value free and unbiased.	Value laden and biased.
Rhetorical Assumption	What is the language of the research?	Formal. Based on set definitions. Impersonal voice. Use of accepted quantitative words.	Informal. Evolving decisions. Personal voice. Accepted qualitative words.
Methodological Assumption	What is the process of the research?	Deductive process. Cause and effect. Static design-categories isolated before study. Context free. Generalisations leading to prediction, explanation, and understanding. Accurate and reliable through validity and reliability.	Inductive process. Mutual simultaneous shaping of factors. Emerging design – categories identified during research process. Context-bound. Patterns, theories developed for understanding. Accurate and reliable through verification.

Source: Creswell (1994, pg.5): Based on Firestone (1987), Guba and Lincoln (1988), and McCracken (1988).

Despite the multitude of literature and debate concerning the two paradigms there is still no consensus on the issue. The differences in opinion as to what defines the two paradigms, what sets them apart and whether or not they can be used simultaneously or separately can be attributed primarily to the nature and history of the paradigms.

'Qualitative research, whatever it may be – certainly does not represent a unified set of techniques or philosophies, and indeed has grown out of a wide range of intellectual and disciplinary traditions' (Mason, 1996: pg.4).

Quantitative research on the other hand has arisen out of a unified tradition and philosophy. The focus of its efforts is on determining a singular and objectifiable reality, which is based on set definitions and methodology.

Due primarily to the difference in philosophical underpinnings many authors oppose the simultaneous use of the two paradigms for researching a single topic or they warn heavily against such a practice. Huysamen (1994) advocates a purely quantitative approach to the collection of data, and is of the opinion that the validity of positivistic research is of a more credible nature than the qualitative approach. Kerlinger (1994) quoted in Miles and Huberman (1994, pg.10), a renowned quantitative researcher believed that *'there's no such thing as qualitative data. Everything is either 1 or 0'*. On the other hand, Berg (1989) remarks that all research ultimately has a qualitative grounding, as he believes that *'either words or numbers can be attached to a raw experience'*. Creswell (1994) suggests that a researcher should identify a single overarching paradigm, either qualitative or quantitative for a research study. He offers the following reasons for the choice of a dominant single paradigm.

'Pragmatically, to use both paradigms adequately and accurately extends dissertation studies beyond normal limits of size and scope. Also, researchers are seldom trained in the skills necessary to conduct studies from more than one paradigm; individuals learn one paradigm, and this perspective becomes the dominant view in their research' (pg.174).

Whilst these warnings were contemplated in this study, the contrasts between these two paradigms can be considered a heuristic device, as seldom do actual studies exemplify all of the ideal characteristics of either paradigm. This being the case, it is suggested that it is not necessary in all studies to select a single dominant paradigm but that a dual paradigmatic approach could also be utilised to better effect. This research agrees with Mason (1996) who writes that:

'Research practice does not have to involve stark either/or choices between qualitative and quantitative methodology because neither quantitative nor

qualitative methodologies are unified bodies of philosophy, method and technique' (pg.6).

Robson and Foster (1989) also support this viewpoint:

'It was a mistake in my view and in the view of many other people, to present the two methodologies – quantitative and qualitative – as totally inseparable procedures. It would be reasonable to say nowadays, that both qualitative and quantitative procedures can have an equally important role to play in a research project' (pg.8).

Miles and Huberman (1994) express the point in a philosophical epigram that the two paradigms essentially help to define and compliment one another:

'We have to face the fact that numbers and words are needed if we are to understand the world. Quantities are of qualities, and a measured quality has just the magnitude expressed in its measure' (pg. 45).

The dual paradigmatic approach has also been successfully adopted in other studies conducting research similar to that undertaken in this study. Ensminger and Mclean (1993) undertook a study to determine the order of importance that EIA practitioners attached to 11 current issues related to the National Environmental Policy Act (NEPA) regulations in the United States. The researchers were able to gain a wealth of contextualised opinions and perceptions from respondents through one on one interviews. The questionnaire, which was posed to the respondents, was based on the researchers own literature search. The responses of the interviewees allowed for a combination of subjective opinion and the opportunity to rigorously analyse the responses through appropriate statistical techniques. The analysis of the data allowed the researchers to identify the most prominent issues constraining the implementation of the regulations and to then determine which issues were more or less significant.

5.3.4 Conclusions: selection of a dual paradigmatic approach

It is evident from a close examination of the literature that there is a weight of evidence in support of and in opposition to the separate and combined use of the two research paradigms. Many dilemmas, contradictions and opposing arguments have been put forward by a variety of authors. Whilst an attempt has been made to engage with some of the

prominent arguments surrounding the quantitative-qualitative debate, it is important not to get lost in the dogma of the literature. This research recognises that there are many opposing views on the delineation of the use of the two paradigms yet at the same time there is often overlap between the two. It is therefore important to understand the assumptions concerning the classification of the two paradigms, as an understanding of both will provide direction for designing a holistic research study incorporating useful aspects from each paradigm. A 'between methods' approach, drawing on parts of the qualitative and quantitative paradigms is therefore favoured by this study to enhance the reliability and accuracy of method and the validity of the data. The empirical research is conducted according to a two-phase approach discussed in the next section.

5.4 Two phase approach to data collection

Two distinct phases have been adopted in the empirical study to facilitate data collection. The methodologies for undertaking these phases are discussed in detail in sections 5.4.1 to 5.5.

5.4.1 Phase one

The first phase consists of qualitative interviewing of respondents and the administration of a questionnaire requiring the rating of pre-selected constraints. The time frame allocated to the implementation of phase one interviews was one hour per respondent. This time frame was discussed with participants in the EIA process prior to designing the interview structure.

5.4.2 Qualitative interviewing

The focus of the first phase of data collection is exploratory in nature and therefore attempts to determine information that is outside of the rigid structure of a purely positivist approach. The knowledge and evidence required from the respondents is contextual and situational. The data required in the first phase is not feasibly available in any other form, so that asking people for their accounts, talking and listening to them is the most effective way of obtaining it. The ontological position adopted by this research suggests that people's knowledge, views, understandings, interpretations, experiences, and interactions are meaningful properties of the social reality, which the research is designed to explore. The epistemological position adopted by this research suggests that a legitimate way to generate data on these ontological properties is to interact with people, to talk to them, to

listen to them and to gain access to their accounts, articulations and experiences. Gran (1996), by defining the limits of the quantitative paradigm, points out the usefulness of qualitative data in drawing out the unexpected:

'Social science has for a long time (at least since August Comte) tried to determine stable, objective, measurable and systemic causes of actions, behaviour and social forms (sociological determinism). That task, that metaphor of social science drawn from the natural sciences of the nineteenth century, has tended to minimise the subjective, free and unpredictable element in human interaction or the chaotic where no probability distribution exists (the idiosyncratic is for the historians to describe)' (pg.3).

The aim of the qualitative interview is therefore to introduce the respondents to the research and determine from their own experience the constraints (hindering the implementation of the regulations) that they consider to be the most prominent.

As mentioned in the introduction to this section, following the discussions with participants in the EIA process it was decided to undertake interviews not exceeding one hour. The reasons for this are practical, since most of the respondents indicated that time was limited and that an acceptable period that they felt would not intrude on their working day was one hour.

Half of the allotted hour was set aside for the qualitative interview. The minutes of the discussion were recorded on paper and cassette. The purpose of recording the interviews was to be able to re-listen to each one to ensure that each constraint identified by the respondents was not only transcribed but also correctly understood and interpreted by the interviewer. This style of data gathering is termed qualitative interviewing and is usually intended to refer to in-depth; semi-structured or loosely structured forms of interviewing. The type of qualitative interviewing selected for this study is a semi-structured approach that is characterised by a relatively informal style, with the appearance of a conversation yet it is directed and guided by the interviewer. Although the interview is guided to ensure the respondents stick to the subject matter, scope for discussion exists allowing respondents to divulge unexpected insights and opinions that may have been excluded by a rigidly structured interview.

The epistemological approach of the qualitative paradigm is one that relies on interaction between the researcher and those being researched. In short, the researcher tries to

minimise the distance between him or herself and those being researched. This arrangement helps to create an atmosphere in which the interviewee feels more comfortable and thus volunteers unexpected insights and information. The rhetoric or language of qualitative research is also distinctive. Authors of qualitative texts have constructed a language distinct from traditional research language in order to emphasise the qualitative paradigm. They describe words such as "*understanding*", "*discover*", and "*meaning*" as forming the glossary of emerging qualitative terms. These words form part of a vocabulary that helps to create a free flow of information, since they are not rigidly defined like terms used in the quantitative paradigm.

Words which are of a formal nature, impersonal and based (and defined) on accepted definition form the basis of the quantitative vocabulary. This ensures that the researcher remains objective and is able to quantify responses in terms of narrow, as opposed to general, definitions, thus narrowing the scope of the response. The possibility for understanding latent, underlying, or non-obvious issues is thus not as strong as it is with a qualitative design. One of the most important reasons for using the qualitative paradigm in the first phase of the research is the use of inductive logic. The use of inductive logic helps to ensure that categories emerge from informants, rather than are identified *a priori* by the researcher. This method allows for rich context-bound information to be procured leading to patterns or theories that help to better contextualise and explain the research question. Similarly it is suggested by Miles and Huberman (1994) that '*qualitative research persuades through rich depiction and strategic comparison across cases, thereby overcoming the abstraction inherent in quantitative studies*' (pg.19).

There is however a notable drawback with the use of qualitative data. The information gained from this method is not direct and objective but is filtered through the perceptions and subjectivity of the respondents. Respondents may feel that a particular issue is more or less important based on their career orientation, experience, academic background, the organisation they are employed by and a multitude of other subjective criteria. For example, the authority respondent group may feel that authorities are suitable qualified to review EIR's but consultants and environmental groups may not. This type of bias can be exposed to a certain degree by statistical analysis of the respondent's responses if the responses are measured on some type of numerical scale. This scale is discussed further in section 5.5 and the development of the questionnaire is discussed in the next section.

5.4.3 Questionnaire for respondents to rate the most significant constraints

The second objective of the first phase of the data collection is to determine, using a questionnaire, which constraints hindering the implementation of the EIA regulations the respondents perceive to be the most significant.

Forty-two constraints were initially identified and compiled in the form of a list, which is contained in Appendix 2. 18 constraints were selected from the list to be included in the questionnaire. These constraints were repeatedly identified to be the most significant constraints hindering the implementation of the EIA regulations, and were gathered during the literature review (See sections 3 & 4) from the following sources:

- Meetings (i.e. IAIA 1999) discussing the implementation of the EIA regulations and;
- Preliminary discussions with key participants in the EIA process.

Following the initial half hour of semi-structured discussion with respondents, the questionnaire, contained in Appendix 4, was administered and discussed in the remaining half hour. The idea being that respondents can provide comments and critique on the content of the questionnaire allowing the questionnaire to evolve during the course of each interview. In this way, the content of the questionnaire is not limited by the perceptions and knowledge of the author but incorporates the opinions of all the respondents.

The respondents were required to rate the constraints contained in the questionnaire on a scale of 1-5: 1 being the constraint they perceive as the most significant and 5 being the least significant. The respondents were then required to add in and rate any further constraints, which they considered significant and were not contained in the list. These constraints were then added to the questionnaire and included in all future questionnaires. Constraints added to the list that respondents in previous interviews had not had an opportunity to rate were contacted and requested to rate the new additions. All respondents were informed of these arrangement during the interviews.

Once all the respondent responses were collected and collated, basic statistical analyses were applied to the results to determine the constraints considered to be the most significant by respondent groups. The methodology employed in the statistical analysis is discussed in the next section.

5.4.3.1 Statistical analysis applied to phase one data

The use of a questionnaire containing constraints whose significance is measurable by numerical rating has distinct advantages. The numerical data assigns a subjective response a measurable significance from which quantifiable trends can be established, using appropriate statistical techniques.

The statistical techniques employed in both phases of this study are listed in Table 5.4.1

Table 5.4.1: Statistical techniques employed in the data analysis for phase one and two

	Paradigm	Data analysis	Respondent sample size	Method of data collection
PHASE 1	Qualitative/ Quantitative	Determination of the mean response for each of the three groups and the collective sample and a grand mean for all respondents	30	Informal interview and semi - structured questionnaire
PHASE 2	Quantitative	Determination of the mean response for each of the three groups and the collective sample	30	Structured questionnaire

In order to determine which of the constraints are considered by the respondents to be the most significant, each rating score was added to obtain a total rating for each constraint. The mean rating score was then calculated for each of the rated constraints as well as a grand total mean. From the total means calculated for each constraint, the most significant constraints were selected. In order to determine which constraints to select as being the most significant constraints, a threshold of minimum significance was established. The threshold of minimum statistical significance was determined to be a score of 4 or above, indicating, according to the rating scale, that a constraint above or including this rating is considered significant to highly significant.

A problem associated with a threshold of minimum statistical significance is that if two of the three respondent groups assign a rating of 5 and the third a rating of 1, then the grand mean will fall below the threshold of significance and the constraint will be excluded from the follow up questionnaire. This was avoided by the inclusion of constraints that are rated

above the threshold of significance within a respondent group even if the grand mean for that constraint is under the threshold value.

5.5 Second phase of the empirical study

The purpose of the first questionnaire was to establish which constraints were considered significant by the respondents by rating them on a scale of 1-5 and then to determine how significant each of these constraints was perceived to be. The second phase of this study determined the most significant constraints hindering the implementation of the EIA regulations in rank order. The fundamental difference between rating and ranking is that rating allows the respondents the opportunity to apply the same rating of significance to numerous constraints. Ranking on the other hand, forces respondents to apply a different rank to each constraint, thereby allowing the most significant of all constraints to be identified.

The process for achieving this objective was to select from the results of the first phase of data collection, the constraints rated above the minimum threshold of significance. These constraints were then placed in random order into a ranking sheet, contained in Appendix 5. This ranking sheet was then sent via fax, post and e-mail to all the respondents that completed the first questionnaire. A covering letter was also forwarded to introduce the ranking sheet. Instructions on the ranking sheet instruct respondents to rank each of the constraints in order of significance. A rank of one indicates that the constraint is the most significant constraint hindering the implementation of the EIA regulations in South Africa, a rank of 2 the next most significant, with a rank of twelve being the least significant. Respondents were requested to rank all of the constraints, ensuring that no two constraints receive the same ranking. An attachment was also provided that describes each of the constraints (see Appendix 6).

The statistical techniques used to process the data are discussed in the next section and summarised in Table 5.4.1.

5.5.1 Phase two data analysis

The methodology for determining the rank order of the constraints is to add up the individual ranks for each constraint within the respondent groups. Following this, a summation of respondent group totals and then a grand total for each constraint will be calculated from the summation of the group totals. The constraint with the lowest grand

mean value is considered to be the most significant and the constraint with the highest mean value, the least significant. After the most significant constraints are determined, a methodology, discussed in the next section, was applied to determine whether the hypothesis can be verified or nullified.

5.6 Verifying the hypothesis

The stated aim of the hypothesis (see section 1.4) is that the implementation of the EIA regulations can be improved despite the budgetary constraints faced by the regulatory authorities responsible for implementing the regulations.

It is argued that the REAs must employ one or more of the capacity components, identified in section 4.9, during the implementation of the EIA regulations. However, if ways to improve one or more of the constraints hindering the implementation of the EIA regulations is identified, that does not require one or more of the components of authority capacity that is budget dependant, then the hypothesis will be verified. Alternatively the hypothesis would be nullified if this could not be demonstrated.

In order to determine which constraints can be improved without reliance on one or more of the components of capacity that are budget dependant the following steps will be employed:

- The 12 most significant constraints were placed into tabular format with two columns to the right of the constraints employed to accommodate the assessment of the extent to which the constraints are influenced by budget
- Determine, from section 4.9, which components of authority capacity are required to improve each constraint
- Determine from Figure 4.9.1 whether the components are *mostly*, *partially* or *non budget* dependant
- If the constraint is mostly or partially budget dependant, determine if there is any way in which the implementation of the regulations could be improved without increasing the REA budgetary allocation
- A discussion of each of the 12 constraints in rank order was undertaken and conclusions were drawn as to whether the hypothesis could be invalidated or not.

5.7 Notes on respondent responses (following completion of phases one & two)

Following the implementation of phases one and two of the empirical study, it was noted that slight amendments to the proposed research methodology were required, as a result of some of the respondents not responding to the phase 2 questionnaire or there being a change in personnel structure at the organisations to which the respondents are affiliated.

A total of five respondents, consisting of two consultants, two individuals from environmental concern groups and one REA did not return the phase 2 questionnaire. The reasons for the lack of response by these individuals as well as the amendments to the methodology to accommodate these events are discussed below under the headings of the different respondent groups:

- **Consultants**

One Consultant failed to reply to the questionnaire despite repeated reminders and all attempts to contact another consultant to distribute the questionnaire failed. As replacements, two further consultants were requested to participate in the study to maintain the numbers at 13. Both of the new respondents operate in the same provinces as the previous respondents and fulfill the criteria for selecting Consultants defined in Section 5.9.

- **REAs**

In the Northwest province, the REA that participated in the first phase of the research resigned before the second phase was undertaken. His equivalent in the department completed the follow-up questionnaire on his behalf.

- **Environmental concern groups**

Two respondents from the environmental concern groups did not participate in the second phase of the empirical study. One of the respondents had immigrated and the other respondent felt that the second questionnaire was outside the scope of his knowledge of the EIA process and as a result, could therefore not competently respond to the questions.

The return rate for the phase two questionnaire is 93%, including the new additions discussed in this section.

5.8 Scope of the data collection

5.8.1 Introduction

The aim of this section is to present the provinces selected to be included in the empirical study and to introduce and discuss the criteria employed to guide the selection process. The criteria are summarised as:

- Research budgetary constraints;
- Provincial budget for EIA implementation;
- Respondent survey;
- Geographic location of the province;
- Economic characteristics.

Each of these criteria are discussed in sections 5.8.2 to 5.8.5.

5.8.2 Research budgetary constraints

The first phase of the empirical study involves visiting the selected provinces to undertake one on one interviews with participants in the EIA process. The costs involved in such an undertaking are prohibitive and thus not all of the nine provinces could be visited. The budget obtained for this study was sufficient to conduct the empirical research in six of the nine provinces. The remaining criteria were therefore used to select a representation of provinces that will suitably aid in fulfilling the broad research aims and objectives.

5.8.3 Provincial budget for EIA implementation

In order to determine which six of the nine provinces should be included in the empirical study, the criterion of capacity was selected as a benchmark from which to identify the provinces that implement the regulations most effectively. The rationale behind the selection of such provinces is to ensure that the six case study provinces are not weighted towards either those provincial authorities with a strong capacity for implementing the regulations or those with a weak capacity. Authority capacity is explained in detail in section 4.9 of this study. It was argued in section 4.9 that the various components that collectively make up authority capacity are mostly budget dependent.

Taking this into consideration, it is postulated that authorities with a larger budget for implementing the regulations will experience different constraints to those authorities with a weaker budgetary capacity and *vice versa*. For example, a larger budget may allow a particular province to increase its personnel, expertise and infrastructural components of capacity to facilitate a more efficient implementation of the regulations. REAs receiving a larger budget may also be able to allocate more time for site visits with Applicants and/or Consultants. Access to greater fiscal resources may allow the purchase and management of infrastructure such as a library or central repository for filing past applications, scoping and environmental impact reports. The evidence strongly suggests that in order to minimise data bias an equal number of provinces with a strong budgetary capacity and weak budgetary capacity should be selected.

Each of the Provinces is allotted a budget according to set of criteria. This budget is determined by the Minister of Finance in conjunction with National government and allocated by the Department of Finance. The total national budget allocated to Environmental Affairs and Tourism for the 1999/2000 fiscal year is R462, 869, 000. This amount is then divided between the national department and the nine provincial departments of Environmental Affairs and Tourism to administer. A small portion of the amount allocated to each of the provincial departments is set aside for EIA implementation.

Each of the Departments responsible for implementing the regulations was contacted and their annual budget for the 1999/2000-year was requested. After reviewing the budgetary allocations it became clear that certain provinces received greater fiscal allocations than their counterparts. Refer to Table 5.8.1 for the budget allocations to each of the Departments responsible for implementing the regulations in 1999/2000.

The 1999/2000 budget for Kwazulu-Natal is R2, 491, 000 (Allen *pers comm.*, 1999). The amount allocated to the Western Cape is R5, 658, 000, which is split between three Environmental Management sectors:

- 1) Environmental Impact Assessment
- 2) Pollution and solid waste management
- 3) Nature conservation policy unit

The amount allotted for EIA implementation is approximately R2, 500, 000, although the exact breakdown was unavailable. Despite numerous requests for the Gauteng EIA budget, the authorities failed to provide a figure. However, according to the individual in charge of

the allocation of the Western Cape EIA budget, Gauteng's budget is similar to that of the Western Cape and Kwazulu-Natal (Tolmay *pers comm.*, 1999). This would place Gauteng's budget in the region of R2, 300,000 – R2, 500,000 million for the 1999/2000 fiscal year. The Northwest province receives R1, 390, 000 for EIA implementation and the Northern Province R1, 600,000 million.

Authorities from the Eastern Cape, Free State and Mpumalanga were unable to provide figures for approximate expenditure on EIA, however they estimated that the figures are probably similar to that of the North-west province and unlikely to be greater than R2,000,000 per annum.

Table 5.8.1: Approximate provincial budgetary allocations for EIA implementation in 1999/2000

Province	Budget
Western Cape	R2, 500, 000
Gauteng	R2, 500, 000
Kwazulu-Natal	R2, 491, 000
Northern Cape	R1, 500,000
Eastern Cape	>R2, 000,000
North-West Province	R1, 390, 000
Northern Province	R1, 600, 000
Free State	>R2, 000,000
Mpumalanga	>R2, 000,000

Although some of the figures given in Table 5.8.1 are approximate, it is likely that they are close to the actual figures. However, knowledge of the exact budgetary allocations to the regulatory authorities are not considered critical to the argument that follows.

The argument put forward in the first paragraph of this section stated that the relative sizes of the provincial EIA budgets would directly influence the effectiveness with which the authorities implement the regulations. This in turn would have a direct bearing on the nature of the constraints hindering the implementation of the regulations in the respective provinces. However, there are numerous arguments against such a postulation, suggesting that the allocation of budget to provincial REAs may not exclusively be responsible for the effectiveness with which the regulations are implemented. The following example serves to illustrate this point.

The Western Cape receives approximately R1 million more than the Northern Cape which according to the argument postulated in the first paragraph of this section would facilitate a more efficient implementation of the regulations than the Northern Cape. It could be argued that the Western Cape due to factors such as rapid economic development, highly sensitive and localised environments and the need for the construction of a social infrastructure to support population increases may have double the number of EIA's to process compared to the Northern Cape. Assuming the Western Cape experiences double the workload of the Northern Cape, the perceived budgetary advantage may be insufficient to allow a more efficient implementation of the regulations than the Northern Cape. Another factor influencing the use of budget is the geographic size of the province. The Northern Cape and the North-West province receive approximately the same allocation of fiscal resources however the Northern Cape in terms of its geographic size exceeds that of the North-West province. Assuming a greater landmass directly correlates with an increased number of EIA applications, it could be argued that the regulations in the Northern Cape would not be as efficiently implemented as those in the North-west province as a result of the Northern Cape REAs having a greater work load but operating off a similar budget.

A final argument, although there are many more, against the use of budget allocation as a determinant of the type of constraints experienced by the REAs in each respective province is the following. Considering the definition of budgetary capacity in section 4.9, it is argued that since budget is so inextricably linked to other components of capacity that it would be simplistic to cite it as the primary determinant of the efficiency with which the EIA regulations are implemented.

The above arguments substantiate that it is fallacious to assume that budget for EIA implementation alone is a direct indicator of the effectiveness with which the authorities implement the regulations and thus of the type of constraints experienced in a particular province.

Since an assessment of all the above mentioned components of authority capacity to determine their relative influences on the effectiveness of EIA implementation in each province would be outside the scope of this study, budget cannot be used as a reliable selection criterion. Instead, it was decided to conduct a survey to determine the province in which the EIA regulations are perceived by the participants in the EIA process to be most effectively implemented.

5.8.4 Respondent survey

A telephonic survey conducted on the three respondent groups, as selected in Sections 5.9 & 5.9.4 was employed to ascertain whether the regulations are implemented more effectively in some provinces than others. There are several reasons for adopting this method including:

- The ontological position adopted by this research suggests that people's knowledge, views, understandings, interpretations, experiences, and interactions are meaningful properties of the social reality, which the research is designed to explore.
- The complete absence of studies comparing the implementation of the regulations between provinces justifies the development of an alternative means of discovering such information.

The approach suggested to elicit the opinions and perceptions of respondents is semi-structured telephonic communication. Authorities, consultants and environmental concern groups from each province were contacted in order to gain a representative opinion on the issue of comparative effectiveness of the implementation of the regulations.

The EIA participants that were contacted were given an introduction to the research and asked the following question:

- In your opinion which three provincial departments implement the regulations most effectively?

The respondents were then requested to list the provincial departments randomly and not in rank order.

Several limitations with this approach that resulted in its abandonment were discovered during its implementation:

- The majority of the respondents intimated that they did not feel qualified to make judgements on authority implementation for all the provinces, as their experience was either limited to single or multiple provinces.
- The majority of the respondents (particularly REAs) wished to remain anonymous due to the nature of the questions.
- Not all the REAs were prepared to participate as respondents.

- The definition of the term 'effective' was subjectively understood by respondents and is also complex to define.
- No Consultants or I&APs that were contacted operate throughout South Africa giving them experience with all the provincial authorities.
- In order to provide informed answers to the questions, an intimate knowledge of authority capacity in each of the provinces is required by all respondents. Few if any respondents possess such knowledge.

Since the criterion of efficiency of EIA implementation through respondent survey was abandoned, the criterion of geographic location and economic status were used as the primary determinants for the selection of the six provinces.

5.8.5 Geographic location

It is argued that the uniqueness of coastal and inland environments primarily determines the undertaking of scheduled activities. It can be stated that the biophysical environment on the coastal regions of South Africa is dramatically different to that of inland provinces. Whilst it is recognised that the environment of each province is unique, a broad distinction can be made between coastal and inland environments and correspondingly the activities associated with that particular environment. For example, scheduled activities such as the construction of ports and harbors, harvesting of marine resources and export driven industries will be associated with coastal provinces. Some of the major activities undertaken in the inland provinces on the other hand may be large-scale mining, farming and associated industries. It is argued that some of the constraints hindering the implementation of the EIA regulations experienced in coastal-based provinces will be unique to a coastal environment and those experienced in inland provinces will be unique to an inland environment. In order to ensure that the data collected from respondents is not biased towards the constraints of either inland or coastal provinces, 3 coastal and 3 inland case study provinces were selected. Of the nine provinces, only three are situated on the coast, Western Cape, Eastern Cape and Kwazulu-Natal. The criterion of 'economic characteristics' was therefore chosen to select the six provinces in conjunction with geographic location.

5.8.6 Economic characteristics

It is argued that provinces which are more economically developed will be in a situation where their positive economic circumstances will influence the type of constraints that occur

in the province. The economic characteristics of a province are defined by many interrelated components including education levels, revenue generation, potential future revenue generation, population size, education levels and infrastructure. Therefore, in order to assess the economic characteristics of the nine Provinces, relevant state departments were contacted in order to establish the existence of studies that provide a comparative indication of the provinces relative economic characteristics. Following several conversations with Department Directors, the author was referred to a report entitled the Intergovernmental Fiscal Review (IFR).

From a reading of the IFR it became evident that in terms of economic status, the Western Cape and Gauteng are considered to be the economic centers of South Africa (IFR, pg. 1.5).

These centres, are predictably more urbanised, have higher income levels, educational infrastructure and therefore offer greater economic opportunities. Disparities in economic opportunities across the provinces not only affect the demand for services, but also have a strong impact on the personnel capacity available to the REAs to administer the EIA regulations. People migrate in search of economic and educational opportunities and provinces with more limited opportunities have difficulty attracting or retaining qualified individuals. Thus it is not surprising that nearly half of all adult South Africans with tertiary qualifications reside in Gauteng and the Western Cape, given the concentration of higher education institutions and the level of economic activity in these two provinces (IFR, 1999).

In consideration of the above, the Western Cape and Gauteng will have greater access to more personnel with higher expertise capacity. As a result, it could be stated that the Western Cape and Gauteng DEA&T are less likely to have to outsource the review of EIR's containing an advanced technical content compared to provinces with lesser remuneration accruing to employees. Higher expertise capacity also facilitates more expedient report review as well as greater innovation with the preparation of guidelines to aid in the review process.

The dramatic disparity in access to economic opportunities, which was discussed, in section 2.9 and illustrated in Table 2.9.1, shows the proportion of total remuneration accruing to employees in each province. The four most rural provinces (Eastern Cape, Mpumalanga, North West and Limpopo Province) with a combined share of 43 per cent of the population, receive only 17 per cent of remuneration.

The IFR also identifies the Western Cape, Gauteng and Kwazulu Natal provinces as having a greater educational infrastructure, which is linked to the higher economic status of these provinces. It is argued that since these provinces have higher educational levels, and that educated people gravitate towards economic centres, the literacy levels of the general population in these provinces will be greater. With a base of more educated and informed citizens it is likely that these provinces will experience greater input from I&APs into the EIA process as well as higher levels of understanding of the EIA process. Some of the constraints that may be experienced in aREAs with a less educated citizenry include:

- Lack of understanding of the EIA process, as well as the technical issues often associated with it.
- Greater resistance towards the EIA process as it may be perceived as a tool to prevent much needed development.
- Application of a more detailed and costly public participation process to accommodate a period of educating the I&APs.

It is evident from the above arguments that different constraints to the implementation of the EIA regulations are likely to be expected between economically developed and less economically developed provinces.

The six case study provinces chosen to be included in the data collection methodology are therefore:

- Western Cape (Greater economic development, Coastal).
- Gauteng (Higher economic development, Inland).
- Kwazulu-Natal (Higher economic development, Coastal).
- Northern Cape (Lesser economic development, Inland).
- Eastern Cape (Lesser economic development, Coastal).
- North-West Province (Lesser economic development, Inland).

The three most economically developed provinces as well as three of the least developed provinces, according to the IRF (1999) report, have been included in the above list. In addition, a balance between coastal and inland provinces was obtained.

5.8.7 Conclusions: selection of provinces for empirical study

The criterion of budgetary capacity to determine which six provinces should be selected for inclusion in the empirical research was proven to be unsuitable in the context of this study. In addition, the survey designed to establish which provinces most effectively implement the regulations does not fulfil the requirements of reliability and accuracy of method that will achieve validity of data, required by the research design. The best available means of determining which provinces to include in the empirical research was therefore to select provinces on the basis of their geographic location and economic characteristics.

5.9 Selection of respondents

Three groups of respondents were selected from which to collect the relevant data to address the research aims, objectives and hypothesis, including:

- Relevant Environmental Authorities (REAs) tasked with the implementation of the EIA regulations;
- Environmental Consultants and;
- Interested and Affected Parties (I&APs).

The selection of the above groups was motivated primarily by two considerations:

- The 1997 EIA Regulations and the EIA Regulation guideline document of 1998, identifies and defines four groups of '*role players*' who participate in the EIA process namely the Applicant, the Consultant, Interested Parties and the Relevant Environmental Authorities (REAs). As mandated role players these groups constitute the main participants in the EIA process who are likely to be able to contribute information that will be relevant in addressing the aims, objectives and hypothesis of this study.
- A diverse range of opinions on the constraints hindering the implementation of the EIA regulations is likely to be obtained from groups with widely differing roles, responsibilities and agenda's.

Thirty respondents from the three groups were selected to participate in the empirical study. The details of all respondents are contained in Appendix 3 and the criteria used to select

the respondents are discussed in detail in the next section. Definitions of all the respondent groups and their roles and responsibilities are presented in Section 4.

5.9.1 Relevant Environmental Authorities

According to the 1997 EIA regulations, nine provincial departments are designated as Relevant Environmental Authorities (REAs) in South Africa. The nine provincial departments are presented in Table 5.9.1.

Table 5.9.1: Departments responsible for implementing the regulations in the nine provinces in 1999

PROVINCE	DEPARTMENT RESPONSIBLE FOR IMPLEMENTING THE REGULATIONS (1999)
Western Cape	Western Cape Nature Conservation
Northern Cape	Department of Agriculture, Conservation and Environment
Eastern Cape	Department of Economic Affairs, Environment and Tourism
Gauteng	Department of Agriculture, Conservation and Environment
Kwa-zulu Natal	Department of Traditional and Environmental Affairs
North-West	Department of Agriculture, Conservation and Environment
Mpumalanga	Department of Environmental Affairs and Tourism
Northern Province	Department of Agriculture, land and Environmental Affairs
Free State	Department of Environmental Affairs and Tourism

In order to select which REAs to include in the data selection process, the following two criteria were applied to the REAs:

- 1) Number of year's involvement with EIA/IEM.
- 2) The position held by the authorities in their respective Provincial Departments.

REAs are required to have spent a minimum of 5 years in the field of EIA/IEM or have at least been involved with the implementation of the regulations since their inception in September 1997. Secondly, only REAs holding senior positions responsible for and in charge of implementing the regulations were selected. Of the seven REAs selected to be included in the data collection procedure, six hold the position of Director and one of Assistant Director.

One REA was selected from each case study province and two from the Eastern Cape. The reason behind interviewing only one REA from each province is two fold. REAs made it

clear during telephonic or written requests for interviews that time was a constraining factor, especially since they were informed upfront that the one-on-one interviews may take up to an hour to complete. Secondly, it is assumed that the REAs selected for interview, due to their senior positions and experience in the field of EIA/IEM, possess the relevant knowledge to adequately represent the views of the department.

The additional respondent from the Eastern Cape is not currently a REA, but he previously held the position of Director of Environmental Management in the Department of Agriculture, Conservation and the Environment (DACE) in the Eastern Cape. He was involved with the non-mandatory IEM process and still receives EIAs from the Department of Economic Affairs, Environment and Tourism for comments in his current capacity as Director of Nature Conservation & Parks and Recreation. This individual is well acquainted with EIA and the key constraints hindering its implementation and his input is therefore considered relevant to this research.

5.9.2 Selection criteria for Consultants

A total of 15 Consultants, based in each of the six case study provinces were selected for inclusion in the empirical study. Since potential clients are located throughout South Africa, none of the Consultants operate exclusively in the province where their consultancy is based. As a result, the constraints identified by Consultants reflect the national situation, rather than that of a specific province.

Selecting which Consultants to include in the data collection procedure was a complex process as there are no exact details, quantifying current consultant numbers operating throughout South Africa or an integrated database indicating their acumen or qualifications. The reasons behind this state of affairs are firstly, the absence of any regulation controlling who may practice as a consultant, and secondly the lack of a single organisation to which all consultants are required to be affiliated or registered. Consultants were therefore selected on the following basis:

- Lists of Consultants currently performing EIAs were obtained from the REAs in each of the case study provinces; and
- REAs were requested to identify Consultants regularly producing EIAs.

Consultants were thus selected primarily on the frequency with which they produce EIA's in a particular province. Frequency of report production is considered in the context of this study to be a good indicator of a Consultant's familiarity with the EIA process.

5.9.3 Selection criteria for Interested and Affected Parties

An interested party is defined in the EIA Regulations (1997, pg.6) as *'any person or group of persons concerned with or affected by an activity'*.

The definition contained in the EIA Guideline document (1998) defines I&APs as follows:

'Individuals or groups concerned with or affected by an activity and its consequences. These include the authorities, local communities, investors, work force, customers and consumers, environment interest groups and the general public' (pg.6).

Taking into account the above definitions, I&APs can be divided into two broad categories, statutory and non-statutory. These categories are discussed in detail in Section 4.5.

According to the definition in Section 4.5, non-statutory I&APs can be divided into environmental concern groups, the general public, local communities, investors, work force, customers and consumers affected by or interested in a development. It was decided to select environmental concern groups from the non-statutory I&APs to be included in the data collection procedure. Several reasons motivated the selection of environmental concern groups as respondents:

- Logistically it would prove too large a task within the scope of this study to interview the general public, local communities, investors, work force and customers and consumers affected by or interested in a development.
- It is questionable whether representatives of the above groups, who in most cases have a single experience with an activity requiring an EIA would possess sufficient knowledge to adequately comment on the current constraints hindering the implementation of the EIA Regulations on a provincial level.
- Due to the technical content of the EIA regulations it is unlikely that I&AP groups who do not regularly participate in the EIA process will be able to adequately respond to the questionnaire, which relies on the respondent being familiar with the content of the regulations.

- Due to the newness of the regulations and the lack of marketing to create awareness amongst the general public, it is again unlikely that I&AP groups not regularly participating in the EIA process would possess sufficient knowledge to respond to the questionnaire in a fashion that would aid in qualifying the research aims, objectives and hypothesis.
- Of the non-statutory I&APs, the environmental concern groups become regularly involved in projects (particularly those of a controversial nature) throughout South Africa, regardless of *locus standi*.
- Although the general public, local communities, investors, work force and customers and consumers become involved in projects requiring EIA throughout South Africa, they generally do so only if they have *locus standi* or a vested interest in the project.
- Representatives of the other I&AP groups who become consistently involved in projects that do not directly affect them are usually members of environmental concern groups.
- Environmental concern groups, being recognised organisations in most cases, with an operating base are relatively simple to contact and interview.
- The environmental concern groups, identified by this research, operate throughout South Africa and participate in a significant number of diverse projects.

Since a number of environmental concern groups are based in each province, criteria were developed to assist in identifying those organisations and individuals who could best address the stated research aims, objectives and hypothesis. The criteria employed are as follows:

- Relevant Environmental Authorities were approached to provide lists of individuals and organisations that frequently become involved as I&APs in projects that require EIA's.
- These individuals and organisations were then contacted telephonically in each of the six case study provinces to determine their levels of involvement in the EIA process.

In order to determine levels of understanding and involvement the following questions were posed to members of environmental concern groups:

- i) How would you describe your familiarity with the EIA process 1) Poor, 2) Fair, 3) Good, or 4) Excellent?
- ii) How many projects requiring EIA have you been involved with?
- iii) May I fax or e-mail a sample questionnaire through to you to so that you can assess whether you feel confident you have the necessary knowledge to adequately answer all the questions?

Following the preliminary telephonic interviews to identify suitable respondents eight individuals from three organisations were selected to participate in the empirical research. The contact details of the individuals and organisations can be viewed in Appendix 3.

After extensive enquiries, no environmental concern groups were identified that were based in the Northern Cape at the time of the empirical research. However it was discovered that many of the other environmental concern groups chosen to be interviewed became involved in selected projects in the Northern Cape if it they felt that the project warranted their participation. It is argued that since environmental concern groups based in other provinces also operate in the Northern Cape, their responses to the interview and questionnaire will also reflect the situation in that province. In the North-West province, the authorities only identified one potential respondent who became regularly involved in activities requiring EIA. This individual is employed at the Magaliesberg Nature Reserve and despite repeated attempts to contact her, no reply to the correspondence was received. Eventually it was determined through contact with one of her associates that she was on leave and would not be able to participate in the research. Apart from this potential respondent, no other environmental concern groups were identified, that operate exclusively in the North-West province.

5.9.4 Statutory I&APs

The statutory I&AP group, as defined in Section 4 is comprised of any authorities involved in or affected by a development. The authorities that have the potential to be affected by or involved in an activity requiring an EIA are presented in Table 5.9.2. The municipalities listed in the table are for the Western Cape only. Each Province will have their own municipalities representing each municipal area.

Table 5.9.2: Authorities that have the potential to become involved in an activity requiring EIA

Local Government Municipalities	Provincial Government	National Government Departments
Unicity of Cape Town	Department of Agriculture	Department of Agriculture
Breede River Valley	Department of Minerals and Energy	Department of Communications
Breede River/Winelands	Department of Health & Welfare	Department of Correctional Services
Drakenstein	Department of Labor	Department of Defence
Stellenbosch	Department of Housing and Local Government	Department of Education
Witzenberg	Department of Environment and Tourism	Department of Environmental Affairs and Tourism
Overberg	Department of Education	Department of Health
Cape Agulhas	Department of Transport	Department of Housing
Overstrand	Department of Water Affairs and Forestry	Department of Land Affairs
Swellendam	Department of Safety and Security	Department of Minerals and Energy
Theewaterskloof	Department of Finance and Economic Affairs	Department of Public Service and Administration
Central Karoo	Department of Social Services	Department of Public Works
Beaufort West	Department of Public Works	South African Management Development Institute
Laingsburg	Department of Trade and Industry	Department of Trade and Industry
Prince Albert	/	Department of Transport
Garden Route	/	Department of Welfare
George	/	Department of Water Affairs and Forestry
Knysna	/	/
Langeberg	/	/
Mosselbaai	/	/
Oudtshoorn	/	/
Plettenberg Bay	/	/
West Coast	/	/
Boland	/	/
Cederberg	/	/

Several arguments exist for the exclusion of statutory I&APs from the empirical research including:

- The plethora of authorities that have the potential to be affected by or become involved in activities requiring EIA makes this respondent group prohibitively large in the context of this study.
- Due to the technical content of the EIA regulations it is unlikely that this respondent group, which does not regularly participate in the EIA process, will be able to adequately respond to the questionnaire, which relies on the respondent being familiar with the content of the regulations.

5.9.5 Exclusion of the Applicant group

The applicant group was excluded from the empirical study for the following reasons:

- Although the Applicant and Consultant are defined as separate persona in the EIA process with different roles and responsibilities, they are both involved primarily in the same stages of the EIA procedure (see Section 4). However, the independent Consultant acts on behalf of the Applicant in complying with the regulations and in most cases, the Applicant has very little involvement with and therefore understanding of the EIA process.
- It is unlikely that Applicants, who generally employ consultants to engage with the EIA process will be able to adequately respond to the interview and questionnaire, which relies on the respondent being familiar with the technical content of the regulations.
- Any person who makes an application for authorisation to undertake an activity listed under schedule 1 of the EIA regulations (1997) is defined as an Applicant. The Applicant group can thus be described as large and diverse, making it prohibitive to select a suitable representation to include in the empirical study.
- After exhaustive queries it was determined that the authorities do not keep up to date or adequate records of all Applicants, making it difficult to identify suitable respondents to include in the empirical study. This finding is in agreement with conclusions drawn from a study conducted by Wood (1999):

'DEA&T appears not to keep any record of EIA documents or copies of EIA reports or other documents. DEA&T sees this as the responsibility of the provincial governments or, where EIA responsibilities are delegated, of the appropriate local government. However this view is not shared by both these

bodies. At present, the keeping both of records and of EIA reports is often rudimentary' (pg. 56).

5.9.6 Conclusions on the selection of respondents

The respondent groups selected to be included in the empirical study have been chosen in order to best represent the key participants in the EIA process that possess an adequate knowledge of the technical content of the EIA regulations and have experience with its practical application. Such respondents are best able to provide the data necessary to optimally address the research aims, objectives and hypothesis.

The next section presents the results conclusions and recommendations of the study.

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6 RESULTS, CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

The interrelated aims of this chapter include the following:

- To present and discuss the research findings.
- To undertake a detailed discussion of the most significant constraint hindering the implementation of the EIA regulations in South Africa.
- To test whether the hypothesis can be verified or nullified by assessing whether the implementation of the EIA regulations can be improved despite budgetary constraints.
- To make recommendations for the improvement of the implementation of the EIA regulations in South Africa.

The findings of the phase 1 and phase 2 studies are presented in sections 6.2 & 6.3 and then discussed in section 6.4. The hypothesis is tested in sections 6.5 to 6.7, general recommendations for improving the implementation of the EIA regulations are provided in section 6.8, and the final conclusions of the study are detailed in section 6.10.

6.2 Results: Phase one of the empirical study

6.2.1 Qualitative interviews

According to the methodology expounded in Section 5, respondents were requested to add any additional constraints that they found to be significant to the initial 18 constraints identified by this research. The respondents concurred with the authors' choice of the initial 18 constraints and suggested the inclusion of a further 5 constraints to the questionnaire, bringing the total number of constraints to 23.

Statistical analysis of the results of the qualitative interviews revealed that of the 23 constraints presented to the respondents 12 constraints were assigned a rating exceeding the threshold of minimum significance. This threshold was set at 4 according to the methodology expounded in Section 5. A rating of four or above indicates that the constraint is considered to be significant to highly significant.

Eight of the 12 constraints received a group mean average rating exceeding the threshold of minimum significance and the remaining constraints a group mean average rating

exceeding the minimum threshold of significance in at least one of the respondent groups. Table 6.2.1 lists the 12 most significant constraints in the left column. The individual group means for each respondent group are tabled and the grand means for all the respondent groups are also included. Score ratings equal to or above the threshold of minimum significance are highlighted in bold.

Table 6.2.1: Constraints from the phase one study rated above the threshold of minimum significance

Constraint	REAs	Consultants	I&APs	Grand mean
	Individual Group Means			
The absence of a mandatory monitoring system to check/investigate whether the terms and conditions of the environmental contract/permit are adhered to during the life cycle of a project	4.57	4.31	4.86	4.58
The Relevant Environmental Authorities rarely initiate legal action against developers for non-compliance with the terms of an environmental contract or a breach of any environmental legislation	4.21	4.31	5	4.51
There is no system of accreditation for environmental consultants.	4	4.46	4.43	4.30
The EIA regulations are often implemented independently of the planning process of a development	4.07	4.38	4.14	4.20
There is a lack of outsourcing (hiring consultants or other individuals capable of aiding in the review process) when REAs are inundated with, or lack the technical expertise to review a scoping or EIA report	4.14	4.38	4	4.18
There are a lack of specific review criteria from which the REAs can assess the impact of particular activities on a variety of receiving environments	3.93	4.15	4.29	4.12
Advertising of a proposed development is often insufficient to create public awareness	4.14	3.42	4.71	4.09
REAs implementing the regulations are not always suitably qualified and/or experienced to engage with the wide range of technical and specialised issues frequently dealt with by Scoping and EIA Reports	3.86	4.15	4.14	4.05
The public, I&APs and other interested parties are not adequately informed and/or educated about the EIA process.	3.43	2.77	4.14	3.49
There is a lack of communication between REAs from different provinces, which prevents constraints from being discussed and solutions being found to improve the implementation of the regulations.	4	3.31	3.14	3.48
Site visits by the REAs, applicants and/or consultants to discuss the environmental impacts of a proposed development do not occur for all projects that have the potential to significantly affect the environment.	3	3.14	4.14	3.43
In some cases issues & comments raised by I&APs concerning a development are not taken into account during the compilation of the Scoping or EIA Reports.	2.29	3.08	4.86	3.41

The full set of results containing the respondents names, organisation for which they work, individual ratings, group mean ratings and overall rating for each of the 23 constraints rated by respondents for the phase one study are included in Appendix 7.

6.3 Results: Phase two of the empirical study

According to the methodology expounded in section 5, the respondents were sent a follow up questionnaire containing the 12 constraints that received either an individual group mean rating or grand mean rating exceeding the threshold of minimum significance. The respondents were then requested to rank these 12 constraints in order of significance on a scale of 1-12. The results of the ranked constraints are presented in Table 6.3.1.

Table 6.3.1: The 12 most significant constraints from the phase two study ranked in order of significance

Constraint	Rank
The absence of a mandatory monitoring system to check/investigate whether the terms and conditions of the environmental contract/permit are adhered to during the life cycle of a project.	1
The Relevant Environmental Authorities rarely initiate legal action against developers for non-compliance with the terms of an environmental contract or a breach of any environmental legislation.	2
There is no system of accreditation for environmental consultants.	3
The EIA regulations are often implemented independently of the planning process of a development.	4
There is a lack of outsourcing (hiring consultants or other individuals capable of aiding in the review process) when REAs are inundated with, or lack the technical expertise to review a scoping or EIA report.	5
There are a lack of specific review criteria from which the REAs can assess the impact of particular activities on a variety of receiving environments.	6
Advertising of a proposed development is often insufficient to create public awareness.	7
REAs implementing the regulations are not always suitably qualified and/or experienced to engage with the wide range of technical and specialised issues frequently dealt with by Scoping and EIA Reports.	8
The public and I&APs are not adequately informed and/or educated about the EIA process.	9
There is a lack of communication between REAs from different provinces, which prevents constraints from being discussed and solutions being found to improve the implementation of the regulations.	10
Site visits by the REAs, applicants and/or consultants to discuss the environmental impacts of a proposed development do not occur for all projects that have the potential to significantly affect the environment.	11
In some cases issues & comments raised by I&APs concerning a development are not taken into account during the compilation of the Scoping or EIA Reports.	12

The full set of results from the second questionnaire containing respondent names, organisation for which they work, individual ranks, group mean ranks and collective ranks are included in Appendix 8.

It is evident from an immediate inspection of Table 6.2.1 and Table 6.3.1 that the results of the rating from phase one and the rankings from phase two are identical, in terms of the significance attributed to each of the constraints. The most likely explanation for this surprising occurrence is that the respondents, who remained the same for each interview, stuck with the choices that they gave high ratings to in the first phase. In the second phase,

enough respondents applied a similar rank to each of the 12 constraints, thus creating the situation where there is no difference in results between the first and second phases.

A discussion of the most significant constraint hindering the implementation of the EIA regulations in South Africa is undertaken in the next section and a more detailed discussion surrounding the hypothesis follows in section 6.5.

6.4 Discussion of the most significant constraint: Absence of a mandatory monitoring system

Respondents identified the most significant constraint hindering the implementation of the EIA regulations as the absence of a mandatory monitoring¹⁴ system to check/investigate whether the terms and conditions of the environmental contract/permit are adhered to during the life cycle of a project.

The 1997 South African EIA procedure is conspicuous by the absence of a compulsory monitoring stage. There is no inclusion of monitoring in either the 1997 EIA regulations, or the EIA Regulation Guideline Document (1998).

This omission is unusual since the previous non-mandatory IEM procedure contained both monitoring and auditing steps. The Environmental Conservation Act (1989) empowers the minister of Environmental Affairs to make regulations concerning:

'the procedure to be followed in the course of and after the performance of the activity in question or the alternative activities in order to substantiate the estimations of the environmental impact report and to provide for preventative or additional actions if deemed necessary or desirable [Section 26 (c)].'

A clause in the NEMA No.107 of 1998 requires the *'investigation and formulation of arrangements for the monitoring and management of environmental impacts'* [Section 24(7)(f)].

¹⁴ Definition of Monitoring: 'The repetitive and continued observation, measurement and evaluation of environmental data to follow changes over a period of time to assess the efficiency of control measures' (EIA Guideline documents, 1998) or 'An activity which ensures that the requirements of the conditions of approval, and (where applicable) Management Plan and Environmental Contract, are met' (DEA&T, 1992).

The minister has however not exercised the option to develop a monitoring system or acted upon the clause in NEMA. The South African EIA procedure therefore remains without a monitoring stage.

Local and international studies, workshops, conferences and other literary sources (collectively referred to in this study as 'sources') suggest that the lack of monitoring and/or its ineffective implementation are key constraints hindering the implementation of the EIA regulations in South Africa and internationally. The most significant constraint will be discussed further in the context of local and international sources in sections 6.4.1 to 6.4.1.2.

6.4.1 The most significant constraint in the context of international and local literature

According to the methodology explained in detail in section 5, the purpose of briefly discussing the most significant constraint in the context of international and local sources is to enhance the validity of the results by illustrating that the findings concur with these sources.

Past as well as recent sources were selected in order to demonstrate that the call for the inclusion of a mandatory monitoring step in the South African EIA procedure as well as the recognition of its importance are not recent developments. It is therefore important that decision-makers consider the results of this study and undertake proactive steps to implement monitoring as a mandatory stage in the EIA process.

The fact that sources already exist, discussing the absence of a mandatory monitoring stage, by no means diminishes the validity of this research, since no previous research in South Africa has been undertaken to determine the most significant constraint hindering the implementation of the EIA regulations using the methodology employed in this study.

6.4.1.1 Comparison of the most significant constraint with international literature

Many prominent international authors have long argued that in order for EIA to be successful, the inclusion of a monitoring step is a necessity. Hollick (1986) drew on his experiences with EIA in a number of countries in order to compile an international evaluation offering comment on a variety of issues that face the discipline of EIA. One of his key conclusions is that *'in the long term, the success of EIA depends on adequate monitoring, reassessment and enforcement over the life of the project'* (pg.157).

The findings of this study also correlate closely with research conducted by other well-known authors, notably Ensminger and McLean (1993), Sadler (1995), Wood (1995) and Canter and Clarke (1997). Ensminger and McLean (1995) conducted a survey on NEPA specialists to determine the major issues concerning the implementation of NEPA. *'The lack of guidelines and action forcing mechanisms to ensure effective development and follow up for impact mitigation measures'* (pg.48), was ranked as the third most significant issue by respondents.

The results of Sadler's (1995) international study of the effectiveness of Environmental Assessment indicated that only 10% of respondents felt that monitoring was being effectively implemented. The majority of respondents rated monitoring as being implemented *'poorly (significant omissions and deficiencies) and very poorly (fundamental flaws and weaknesses)'* (pg. 10). One of the key conclusions drawn from Sadler's study, is that the *'monitoring phase of EIA is poorly developed and represents a major area of weakness, especially in comparison to the attention given to pre-decision impact analysis'* (pg. 23).

A study conducted by Wood (1995) on the EIA systems of seven international first world countries, including the United States, concluded that a number of general shortcomings in the current state of EIA practice exist. The lack of effective monitoring was cited as one of the 6 key weaknesses in the EIA systems under review. None of the EIA systems fully met the impact monitoring evaluation criteria developed by Wood (1995). In addition Wood (1995) notes that monitoring is still a key area of weakness in the worlds oldest EIA system, the United States.

Canter and Clarke (1997) undertook a study aimed at determining the effectiveness of the National Environmental Policy Act (NEPA) EIA process in the United States. Participants were initially requested to rate 18 commonly stated concerns relating to the NEPA process. Participants were then requested to determine which issues are most important in terms of being prioritised for improvement. The issue considered by participants to be the most important was *'that post project monitoring for mitigation and evaluation is rarely conducted'* (pg. 317). Participants also prioritised this issue as being the most important for addressing in the near future.

6.4.1.2 Comparison with local literature

In terms of local sources, much has been published on the non-mandatory IEM procedure but owing to the newness of the EIA regulations relatively few local studies, workshops, conferences and publications are available that comment on the 1997 EIA regulations.

However all available sources known to the author were obtained and included in the review. The findings of these sources relating to the most significant constraint are presented in this section.

The South African component of Sadler's international study on EIA effectiveness was conducted by the International Association for Impact Assessment (IAIA) and the Environmental Evaluation Unit (EEU) based at the University of Cape Town (UCT). The results of this study revealed that one of the key activities in the IEM process not being performed optimally is monitoring. The study was performed in 1995 and has not been updated since the inception of the 1997 EIA regulations. However, studies such as Wood (1999) confirm that monitoring is an area of weakness in the current South African EIA system, particularly due to the lack of provincial budget:

'The problem of crippling under-funding and under-staffing of provincial and local authorities means that they must rely on the complaints of neighbors and the integrity of developers and their consultants for information about non-compliance' (pg.56).

At an IAIA conference held in 1998 in South Africa, Weaver (1998) presented a paper proposing an initial set of requirements that should help to define best practice for EIA in South Africa. The requirements were derived from the experience of the authors and EIA case studies. In terms of international and local experience, the authors consider best practice EIA to involve the inclusion of a *'monitoring and review program'* (pg. 302).

Hill (2000) argues that the 1997 EIA regulations which *'make provision for compulsory EIA of specified activities, focus exclusively on the role of EIA in decision-making'*. Hill (2000) adds that *'similarly the 1998 EIA Guideline document on the implementation of the regulations provides no guidance on post-decision implementation'*. This research concurs with the assessment made by Hill (2000).

At an IAIA workshop in Cape Town (28 January 1999) entitled *'Improving the implementation of the EIA regulations'*, a cross section of environmental professionals (town planners, government employees, consultants, academics and other interested and affected parties) listed and discussed some of the key constraints hindering effective EIA implementation in the Western Cape. The absence of monitoring was cited as one of the key areas of weakness, and improvement of post project approval monitoring is considered by the REAs in the Western Cape to be a strategic priority in the future.

6.4.2 Conclusions

It is evident that the absence of a mandatory monitoring procedure from the EIA regulations is identified by international and local sources to be among the most significant constraints hindering the implementation of EIA both internationally and in South Africa. This research has determined that it is the most significant constraint hindering the implementation of the EIA regulations in South Africa.

Despite the vast number of publications and studies identifying this issue as one of the key deficiencies in the EIA process, little has been done to rectify this constraint, even in the country responsible for the inception of EIA, the United States.

The onus is now on South Africa to take heed of and learn from the findings of local and international sources as well as this study in order to develop and incorporate a mandatory monitoring procedure into the EIA regulations.

6.5 Testing the hypothesis

The hypothesis, as expounded in section 1.4 reads as follows: 'The implementation of the EIA regulations in South Africa, by the relevant environmental authorities cannot be improved due to budgetary constraints'.

In order to nullify the hypothesis it would have to be illustrated that the implementation of the EIA regulations could be improved despite the current budgetary constraints experienced by DEA&T.

6.6 Budget dependency of the 12 most significant constraints

According to the methodology delineated in section 5, there are ten components of authority capacity. It is argued that the REAs must employ one or more of the capacity components during the implementation of the EIA regulations.

The 12 most significant constraints were assessed to determine which component of authority capacity is applicable to each constraint in order to improve the implementation of the EIA regulations. Following this, a cross reference was made to Figure 4.9.1 to determine whether the component of authority capacity required to improve EIA implementation is mostly budget dependent, partially budget dependent or non-budget dependant. If the constraint falls into the latter category, then the hypothesis will be nullified. Alternatively, if it falls into the first two categories, and it can be demonstrated that EIA

implementation can be improved despite the budget dependency, then the hypothesis will also be nullified.

Table 6.6.1 (see pg.106) provides a summary of the budget dependency of the 12 most significant constraints. A discussion of each of the 12 constraints in rank order will follow in sections 6.6.1 to 6.6.12, to determine which components of budgetary capacity are applicable to each constraint. Following this discussion, recommendations will be made in section 6.8 on how to improve the implementation of the EIA regulations and thereafter, conclusions will be drawn, following the recommendations, as to whether the hypothesis can be invalidated or not.

6.6.1 Absence of a monitoring system

In order to include a mandatory monitoring step in the EIA regulations it would require a motivation for an amendment to the legislation by the DEA&T. The motivation itself would be budget dependant since temporal, legislative, infrastructural and decision making capacity will be required. The costs of regulating a monitoring system would also require budgetary capacity. The costs to the REAs would include administration of the process, review of monitoring reports and programmes, checking on compliance with the regulations and enforcement in the event of non-compliance. It is therefore argued by this research that the design and implementation of a monitoring system is considered to be *mostly* dependent on budget.

6.6.2 Lack of legal action

Legal action is rarely initiated by the REAs primarily as a result of the associated costs and personnel shortages (Botma, *pers comm*, 2000). This constraint is also closely linked to the absence of a monitoring programme, as without effective monitoring the REAs will be unaware in many cases of breaches in the environmental contract or other legislation.

Costs borne to the REAs include administration of the compliance process such as phone calls, site visits, legal letters and other interaction with affected parties. If the initial attempts to ensure compliance fail and if legal action is pursued, the REAs will bear further administrative costs, infrastructural costs, temporal costs for further site visits, interactive costs with affected parties and other authorities and legislative costs. It is therefore argued that the initiation of legal action against developers for non-compliance with the terms of an environmental contract or a breach of any environmental legislation is *mostly* budget dependent.

6.6.3 No accreditation system

Designing and implementing an accreditation system for environmental consultants would not result in any costs for the REAs. As with other accreditation bodies set up to govern and regulate the practising of individuals in fields such as law or accountancy, the design and management of the accreditation system would be undertaken by members of the profession and operated from the membership fees paid by affiliated professionals. This constraint is therefore considered to be *non-budget* dependent, in terms of the budget of the REA's.

6.6.4 EIA implemented independently of the planning process of a development

The Integrated Environmental Management Guideline series of 1993 is non-mandatory and thus the REAs are not required to enforce an integrated approach under the 1997 EIA regulations. The onus of ensuring that the EIA regulations are implemented early in the planning process rests with the Consultants and the Applicant. In many cases it is not always possible for consultants to ensure that the EIA process is incorporated into the planning stages of a development, since in some cases the Applicant has already completed the plans for a development or has initiated the construction phase before commissioning a study.

Under the current legislation, this constraint is budget independent, however since an integrated approach is to be adopted under the new National Environmental Management Act (2002), the REAs would be responsible for managing and enforcing the adoption of an integrated approach. Management is likely to involve pre-application consultation and provision of information and guidelines, such as is currently required under section 3 (3) (c) of DEA&T (1997). It is likely that management and enforcement of this process will include the employment of temporal, legislative, decision-making, personnel, infrastructural and interactive capacities by the REA's. It is therefore argued that the integration of EIA with the planning process of a development is *mostly* budget dependent.

6.6.5 Lack of outsourcing when REAs are inundated with, or lack the technical expertise to review a scoping or EIA report

REAs who were interviewed from each of the provinces all stated that a lack of personnel coupled with an increasing number of EIA applications hinder the timeous review of reports. In addition, many experienced personnel leave DEA&T to work for consultancies due to the higher remuneration rates. To compensate, DEA&T often has to employ personnel with little or no experience and train them into a position. The cycle repeats itself when these

individuals gain sufficient experience and then move to consultancies or other companies offering higher remuneration rates.

This constraint is mostly budget dependent as DEA&T could significantly enhance the current review process by employing more personnel. In addition, by paying competitive salaries DEA&T would be able to build up a more experienced and diverse staff. An increase in budget would also allow for the enhancement of personnel capacity either to aid in the review process or to comment on the technical aspects of a report. It is therefore argued that the outsourcing (hiring consultants or other individuals capable of aiding in the review process) when REAs are inundated with, or lack the technical expertise to review a scoping or EIA report is *mostly* budget dependent.

6.6.6 There are a lack of specific review criteria

No legislative requirements exist that compel the REAs to develop and implement specific review criteria from which to assess the impact of particular activities on a variety of receiving environments. It is suggested that if the REAs were to develop such criteria then personnel, expertise, interactive, temporal, decision- making and innovative capacity would be required in order to complete this undertaking successfully.

The Gauteng DEA&T has already developed its own set of review criteria (Botma, *pers comm*, 2000) and these guidelines could be adapted for use in other provinces. In addition, contact could be established with research bodies such as Universities and Technikons or with NGO's to gain assistance in the compilation of such guidelines. However, despite this potential advantage, the capacity components mentioned in the first paragraph would still be required in order to amend, manage, update and implement the guidelines. Some of the costs involved in such an undertaking may include:

- Forums to discuss the guidelines
- Development of new guidelines or amendment of the existing guidelines
- Interaction and discussion with other authorities in different provinces
- Training of personnel to employ the guidelines
- Printing and distribution costs.

In consideration of the above, it is argued that the development of and implementation of specific review criteria from which to assess the impact of particular activities on a variety of receiving environments is likely to be *mostly* budget dependent.

Table 6.6.1: Budget dependency of the most significant constraints

Constraint	Rank	Budget Dependency
The absence of a mandatory monitoring system to check/investigate whether the terms and conditions of the environmental contract/permit are adhered to during the life cycle of a project.	1	Mostly budget dependant
The Relevant Environmental Authorities rarely initiate legal action against developers for non-compliance with the terms of an environmental contract or a breach of any environmental legislation.	2	Mostly budget dependant
There is no system of accreditation for environmental consultants.	3	Non – budget dependant
The EIA regulations are often implemented independently of the planning process of a development.	4	Mostly budget dependant
There is a lack of outsourcing (hiring consultants or other individuals capable of aiding in the review process) when REAs are inundated with, or lack the technical expertise to review a scoping or EIA report.	5	Mostly budget dependant
There are a lack of specific review criteria from which the REAs can assess the impact of particular activities on a variety of receiving environments.	6	Mostly budget dependant
Advertising of a proposed development is often insufficient to create public awareness.	7	Mostly budget dependant
REAs implementing the regulations are not always suitably qualified and/or experienced to engage with the wide range of technical and specialised issues frequently dealt with by Scoping and EIA Reports.	8	Mostly budget dependant
The public, I&APs and other interested parties are not adequately informed and/or educated about the EIA process.	9	Mostly budget dependant
There is a lack of communication between REAs from different provinces, which prevents constraints from being discussed and solutions being found to improve the implementation of the regulations.	10	Mostly budget dependant
Site visits by the REAs, applicants and/or consultants to discuss the environmental impacts of a proposed development do not occur for all projects that have the potential to significantly affect the environment.	11	Mostly budget dependant
In some cases issues & comments raised by I&APs concerning a development are not taken into account during the compilation of the Scoping or EIA Reports.	12	Mostly budget dependant

6.6.7 Insufficient advertising

According to section 3.2.1.4 of DEA&T (1998), the responsibility for advertising rests with the Consultant who is appointed on behalf of the Applicant. Advertising of a development is a mandatory requirement rendering the Authorities responsible for its management and enforcement.

Personnel, temporal and interactive capacity are required for discussing advertising requirements with the Applicant and/or Consultant, checking whether newspaper adverts or on site advertising meet the legislative requirements, and for undertaking enforcement in the event of non-compliance. As evidenced in Section 6.6.2 of this research, even if authorities become aware of insufficient advertising through public complaint or otherwise, their capacity for undertaking enforcement action is lacking. It is argued that in order to manage and enforce the advertising process, temporal, decision-making, personnel, administrative and infrastructural capacity are required, rendering this process *mostly* budget dependent.

6.6.8 REAs not always suitably qualified and/or experienced

The technical content of many Scoping and EIA reports requires expert knowledge in order to adequately review and comment on the content. It was noted by Laidler (*pers comm*, 1999) that many of the authorities reviewing the reports originate from a narrow nature conservation background which 'does not lend itself to the wholistic review of some of the technical content contained in and associated with EIA reports.

In order to maintain a staff that has the necessary qualifications and/or experience to undertake the review of the technical content of Scoping and EIA reports, DEA&T would have to offer salaries that would prevent the movement of experienced staff to better paid positions. As argued in section 6.6.5, DEA&T is currently unable to accommodate such salaries and often suffers the resultant movement of trained authorities to higher paid positions in the private sector.

It is argued that in order to enhance the REAs personnel capacity with individuals who have the required expertise, innovative and decision-making skills, budgetary capacity is required. In addition, in order to train existing staff, personnel, expertise, temporal and interactive capacities would be required. Alternatively the REAs could outsource to obtain

the necessary expertise for the review of reports or studies which contain highly technical content. However, as discussed in section 6.6.5, this option is mostly budget dependant.

In consideration of these capacity requirements, the employment of suitably qualified and/or experienced REAs to engage with the wide range of technical and specialised issues, frequently dealt with by Scoping and EIA Reports, is *mostly* budget dependent.

6.6.9 The public, I&APs and other interested parties are not adequately informed and/or educated about the EIA process

The role of the REAs in informing and educating the public about the content of the EIA regulations and ensuring that they understand the process is an inferred requirement of DEA&T (1997) or DEA&T (1998). The regulations and the guideline document do not specify what the role of the Consultant is with regard to public participation. However it has become accepted and expected practice for Consultants to ensure that the I&APs understand the EIA process in which they participate (Holdcroft, *pers comm*, 1999). In addition, it is argued, according to the legislation discussed in subsequent paragraphs that the REAs are responsible for administering and enforcing aspects of the public participation process.

According to section 3.1.4.1 and 3.2.2.2 respectively of DEA&T (1998) the REAs are responsible for:

'consultation with the applicant/consultant throughout the application procedure to provide general guidance on procedures, information and reports required', and for ensuring that the consultant has made provision for sufficient consultation with I&APs' (pgs.15-16).

Although the term '*sufficient consultation*' is not elaborated on in the Regulations or the Guideline document, according to section 4 (f) of DEA&T (1997), it is the responsibility of the Consultant to:

'ensure that all interested and affected parties, including government departments that may have jurisdiction over any aspect of the activity, are given the opportunity to participate in all the relevant procedures contemplated in these regulations'.

It is argued that it can be inferred from the legislation that the REAs are responsible for ensuring that the Consultants inform and educate the I&APs about the EIA process as part of the public consultation process. REAs are also responsible for attending public consultation meetings, where relevant, associated with each application.

In consideration of the above information, it is therefore likely that personnel, temporal, interactive, infrastructural and administrative capacity would be required for such undertakings. It is therefore argued that the role of the REAs in informing and educating the I&APs and other interested parties about the EIA process is *mostly* budget dependant.

6.6.10 Lack of communication between REAs from different provinces

According to Section 3.1.4.1 of DEA&T (1998), inter departmental co-operation and consultation is:

'the responsibility of the National Department of Environmental Affairs and Tourism as well as each Province to establish their own mechanisms for consultation and co-operation with other government departments' (pg.15).

DEA&T is also responsible for the *'harmonisation of administrative and decision-making processes throughout South Africa'*.

National DEA&T, according to section 3.1.4.3 of DEA&T (1998) is also required to play a lead role in the implementation of the regulations through:

'co-ordinating the implementation of the regulations on national and provincial level and to provide guidance and advice on addressing the constraints with regard to implementation' (pg.17).

Since this is the case, personnel, infrastructural, interactive, decision-making, expertise and innovative components of authority capacity will be required in order to facilitate this process, rendering this constraint *mostly* budget dependant.

6.6.11 Site visits do not occur for all projects

Neither DEA&T (1997) or DEA&T (1998) make mention of site visits by the REAs and the Consultants as a mandatory requirement, however such an activity is considered to be

standard practice as part of the EIA process for certain small and all large projects (Laidler *pers comm*, 1999, Thomas *pers comm*, 2000).

DEA&T (1998), section 3.2.3.3 states that when the authorities consider an application, the record of decision (ROD) must include, *'the date of, and persons present at a site visit, if any'*. The inclusion of 'if any' implies that site visits are in fact not mandatory but rather a part of the EIA process that is included at the discretion of the REAs. However, what is suggested from this constraint is that the REAs are not undertaking site visits, even for projects that are deemed to require such an excursion.

The undertaking of site visits requires personnel, infrastructural, expertise and temporal capacity, rendering this undertaking of this activity *mostly* budget dependent.

6.6.12 Issues & comments raised by I&APs not taken into account

According to section 3(1)(d)(iii) of DEA&T (1997) it is the responsibility of the Consultant to *'manage the public participation process'*. In addition, under section 3(1)(f) of DEA&T (1997) the consultant is:

'responsible for the public participation process to ensure that all interested parties, including government departments that may have jurisdiction over any aspect of the activity, are given the opportunity to participate in all relevant procedures contemplated in the regulations'.

One such procedure is contemplated in Section (6)(1)(e) of DEA&T (1997) and documents the requirements for the contents of a scoping report. One of the requirements is that *'an appendix containing a description of the public participation process followed, including a list of interested parties and their comments must be included'*.

It is therefore the responsibility of the Consultant, who manages the public participation process, to ensure that the issues & comments raised by I&APs concerning a development are taken into account during the compilation of the Scoping or EIA Reports.

However, according to DEA&T (1998) the REAs should provide *'general guidance on the procedures, information and reports required'*, during the pre-application stages. Such guidance would include ensuring that the Consultant's meet their obligations in terms of public participation. The REAs are also considered under section (6)(1)(e) of DEA&T (1997) to be responsible to ensure that I&AP comments are included in the Scoping and EIA

reports and also to ensure that the consultants undertake a comprehensive public participation process, including '*sufficient consultation with I&APs*' (Section 3.2.2.2). In order to meet the requirements of the legislation, it is likely that the REAs would have to engage the components of temporal, interactive, decision-making, infrastructural and personnel capacity. The actions undertaken by the REAs to ensure the inclusion of I&AP comments into Scoping and EIA reports is therefore considered to be *mostly* budget dependant.

6.7 Conclusions on the budget dependency of the 12 most significant constraints

The results of this study demonstrate that of the 12 constraints, perceived by the respondents to be the most significant in the implementation of EIA in South Africa, 11 of the constraints are mostly budget dependent and one is non-budget dependant.

The next section provides recommendations for improving the implementation of the EIA regulations in South Africa and in conjunction with sections 6.6 to 6.6.12 forms the basis for testing the hypothesis.

6.8 Recommendations to improve the implementation of the EIA regulations

The recommendations in this section form a collation of the knowledge developed during the course of the research, which was obtained from the respondents and international and local sources. These recommendations are broad in nature, are certainly not exhaustive, and should therefore be considered only as a starting point for a wider debate on a methodology for the improvement of the implementation of the EIA regulations. It should be noted that some of the recommendations made in sections 6.8.1 to 6.8.4 are general in nature, require budget and are therefore not specific to improving EIA implementation despite budgetary constraints. However, where relevant, ways in which the implementation of the EIA regulations can be improved despite budgetary constraints will be demonstrated in the recommendations.

The findings of this research indicate that several key areas need to be addressed in order to improve the implementation of the EIA regulations. The recommendations, not listed in any order of importance, are summarised as follows:

- Adoption of a mandatory monitoring procedure in South Africa
- Development of an accreditation system for environmental consultants
- Interdepartmental communication

- Strengthening of REA capacity by:
 - Training and guidance
 - Development of specific review criteria
- Education and awareness of I&APs
- Generation of budget.

6.8.1 Adoption of a mandatory monitoring procedure in South Africa

It is recommended that South Africa should incorporate a mandatory monitoring procedure into the EIA process, in order to improve the implementation of the EIA regulations. The necessary framework is already in place as well as clauses that empower the minister to promulgate regulations concerning the formulation of a monitoring procedure (refer to discussion in section 6.4).

The development of a mandatory monitoring procedure that is uniquely South African should be initiated by the REAs to show their support for such a system. The IAIA or any other interested NGO's could then run a workshop to collate comments and suggestions for the development of the monitoring system. Relevant articles such as Hill (2000) should be considered that suggest the merger of IEM and EMS to form a system that will attain effective environmental management and review of the system during its implementation. Considering that this constraint is perceived by respondents to be the most significant, an immediate motivation should be put forward to the minister and the IAIA relaying the findings of this research and conveying the urgency for the proposed workshop.

6.8.2 Strengthen REA Capacity

6.8.2.1 Training and Guidance for REAs

Wood (1995) concluded from a comparative review of eight first world EIA systems that there is a '*general need for further guidance and training to increase the effectiveness of EIA practice*'. This research concurs with Woods (1995) findings and suggests that training and guidance imply the building of capacity and the transfer of knowledge and skills, in order to provide practical tools for the implementation of the EIA regulations. Understanding of and competence in all the responsibilities delegated to the authorities by Section 3.1.4.1 of DEA&T (1998) are key ingredients of strategies in this arena.

This research does however recognise that guidance and training are influenced, like many of the constraints by budgetary capacity. REAs may not have the temporal capacity to

initiate a mentoring programme or feel that the process is futile due to the high turnover of staff, who once trained by the REAs, in many cases move to more highly paid positions in the private sector. As argued in section 6.6.8, it is true to state that an increase in budget would facilitate the attraction of suitably experienced and skilled individuals and help to prevent the loss of experienced members of the existing staff.

However, the fact remains that no significant increases in the budgetary allocations to DEA&T are planned and the REAs must therefore adopt strategies in which to improve the implementation of the regulations using their current capacity.

REAs need to identify areas of greatest weakness in the implementation of the regulations and develop guidance or mentoring and training programmes programs to address these key areas. A suggestion as to how REAs can receive feedback on areas that require improvement is to attach a performance review to EIA applications, which afford the main participants in the EIA process the opportunity to identify areas in which they feel the REAs can improve the implementation of the regulations. Alternatively, a portion of the DEA&T website could be set up to allow the public to register their comments regarding the implementation of the regulations by the REAs.

Appropriate training programmes designed to offer guidance to improve key areas of weakness do not necessarily have to result in prohibitive costs for the REAs. For example, training manuals could be developed, accompanied by videos that could be employed to train REAs throughout South Africa. The cost could be borne collectively by National DEA&T.

An important way in which guidance can be administered includes the development of a variety of review criteria and guidelines from which the REAs can assess:

- Possible exemptions from the regulations
- The contents of Scoping and EIA reports
- Circumstances in which it is appropriate to undertake legal action
- The impact of particular activities on a variety of receiving environments.

The last of the review criteria listed above was ranked by respondents as the 6th most significant constraint and is discussed further in the next section. Guidelines for possible exemptions from the EIA regulations are also discussed.

6.8.2.2 Develop Review Criteria

During the empirical stage of this study, twenty-one of the twenty-seven respondents stressed the importance of developing review criteria to aid REAs in assessing the impact of particular activities on a variety of receiving environments. At the time that the empirical research was undertaken (1999/2000) the Gauteng DEA&T was the only department that was in the process of drafting review criteria. It is recommended that if these review criteria have been completed then they should be forwarded to the DEAT in other provinces for their comments and input. These review criteria could then be used as a framework from which to develop review criteria that are specific to the requirements of each of the provincial departments.

6.8.2.3 Possible exemptions from the regulations

In order to reduce the number of applications currently being processed by the REAs, guidelines need to be developed to identify activities that could possibly obtain blanket exemption from the EIA process. An example would be activities such as the erection of cellphone masts, which if situated a certain distance from human dwellings and constructed in an environment that is already disturbed could be considered for exemption.

It is not envisaged that the creation, management and distribution of such guidelines would be prohibitively costly to the REAs. In addition, the onus could be placed on the Consultant to ensure that when they submit applications, that they consider likely to be exempted, that they forward a short motivation to the REAs explaining why the activity should be exempt. Such a motivation would require minimum review time due to its concise content.

6.8.2.4 Enforcement capacity

Although there are many areas of authority capacity that require specific focus and attention, the lack of initiation of legal action for non-compliance with the terms and conditions of the environmental contract or any breach in environmental legislation was ranked as the second most significant constraint.

A lack of enforcement is closely related to the deficit of experienced REAs, since without proper experience or knowledge of the procedures to be taken, REAs would not be adequately equipped in all cases to make decisions to engage in legal action. It is therefore important for the REAs to initiate training and guidance (see section 6.8.2.1) to strengthen the ability of REAs to make decisions.

It must also be recognised that the lack of legal action to enforce environmental legislation is partly symptomatic of South Africa's socio-political context (see section 2.2). Although the South African constitution recognises the importance of a clean and safe environment, basic human needs will usually usurp environmental concerns. There are no quick and easy solutions to this problem, apart from the ongoing education both of the public and politicians and by staging high profile events such as the World Summit on Sustainable Development to highlight the necessity for development and environmental management to occur in tandem.

6.8.3 Accreditation of consultants

It is recommended that an independent committee or governing body be created to regulate the accreditation of environmental consultants. A procedure should be developed outlining the requirements that must be fulfilled in order for a consultant to be registered with the organisation. An accepted time frame should also be established in which consultants must register themselves with the organisation. Following the expiry of this time frame, a clause should be included in the legislation prohibiting the employment of any consultant to undertake EIAs, if they are not affiliated with the appointed regulatory body.

If Applicants are required to hire an accredited consultant, it is assumed that these individuals will be suitably experienced and qualified. If this is the case then the Scoping and EIA reports produced will generally be of a high standard, reducing REA review time. Poor quality reports delay authorisation for the Applicant and may have to be reviewed several times by REAs before authorisation is given. Consultants who are accredited will also be accountable to peers for reports they produce as well as their conduct while working on projects. Such a requirement would facilitate the production of a high standard of work and stricter adherence to legislative requirements, since the consideration of a fine or suspension from the accreditation body would be a sizeable risk. It is therefore argued, that having consultants regulate themselves through an independent accreditation body would ease the burden on the REAs of having to manage and regulate consultants who do not adhere to the regulations.

It is noted that subsequent to this recommendation being made, the 'Interim Certification Board (ICB) for Environmental Impact Assessment Practitioners (EAPs)' was established in February 2001. One of primary aims of this board (see www.eapsa.co.za) is to ensure that competent and credible environmental assessment practitioners undertake EIA's.

The ICB has established the 'Certification Board for Environmental Assessment Practitioners of South Africa (CBEAPSA). CBEAPSA is the name currently being used to refer to the permanent regulatory body which will take on the responsibility of Certifying EAPs from the ICB when it's term expires.

This issue of certification has also been brought to the attention of the DEA&T, with the recommendation that only certified environmental assessment practitioners should be allowed to conduct environmental assessments in terms of existing and/or proposed legislation.

6.8.4 Education and awareness of I&APs

It is argued that people affected by a development should play more of an integral role in the evaluation procedures, affording them the opportunity to contribute towards not only the development process but also to the development of the EIA regulations.

This research is in agreement with Kalan and Ross (1997) and many other authors, who identify the need for instituting *'creative and simple ways for involving the public with an emphasis on information, knowledge and education'* (pg.8).

A culture of disempowerment remains as a legacy of the apartheid government, where development went ahead without any consultation or information sharing with the majority of the public who were also denied input into the decision making process (see section 2.2). The process of education and awareness relating to the EIA regulations encompasses the inculcation of ethics and attitudes in people, which will bring about positive behavioural changes. These changes will lead ultimately to improvements in the implementation of the EIA regulations as people feel a sense of being empowered by a process which they understand, can participate in and ultimately perceive to be a tool that can effect positive changes due to their input.

This research recommends that more specific requirements are placed in the regulations and in the EIA guideline document that compel Consultants or whoever is conducting the public participation process to include a standardised explanation of how the EIA process functions, its main aims and objectives and the roles of the public in the process.

The DEA&T should also undertake to compile a brochure that explains the EIA process in a way similar to that expounded by Consultants during public participation. These brochures

should be distributed to all interested and affected parties (I&APs) before the initiation of a project. Part of the application fee suggested in section 6.8.4.2 could cover the costs of the design and distribution of such a pamphlet during the public participation process. Alternatively, mandatory requirements could be developed, that place the onus on the Applicant and/or Consultant to produce and distribute a such a pamphlet in the languages of the affected parties during public meetings. The size of the pamphlet only needs to incorporate one back to back A4 page, written in non-technical language.

6.8.4.1 Site Visits

In many cases, REAs often expend unnecessary amounts of time attending site visits that are often not required due to the scale or sensitivity of a proposed project. In many cases a site visit for a small project such as the development of a service station or erection of a cell phone mast could require an entire day on site if the project is located far from the offices of the REA.

It is suggested that for projects such as powerlines, jetty's, small bridges, service stations and any other small scale projects as well as projects that are not undertaken in a sensitive environment, that the onus is on the Applicant and/or Consultant to provide the Authorities with a visual and written presentation that will be sufficient for the Authorities to review the project without a site visit.

6.8.4.2 Generation of Budget

It is proposed that the REAs charge an application fee that is proportional to the size of the project budget, up to a maximum of R2000. Consultants could work this fee into their cost estimate and for a multi-million Rand project an additional R2000 would not be considered prohibitive. It is suggested that for small projects where the budget is only a couple of thousand Rand, a fee of R50 would not be considered excessive for the authorities to process the application.

The money outlaid by Applicants for application fee's may end up collectively saving them money, since the proceeds of the applications could be channelled into improving the implementation of the regulations. This could translate directly into reduced project review time, more efficient information provision and liason between the REAs and the Applicant and/or Consultant, better attendance at site visits, and many other improvements.

6.9 Conclusions

Accreditation of consultants is considered by respondents to be the third most significant constraint hindering EIA implementation in South Africa. No budget is necessary from the REAs to design and implement such a body, apart from amending the legislation to include it as a mandatory requirement for consultants to be affiliated to such a body.

It is evident from the discussions in sections 6.8.1 to 6.8.4.2 that the implementation of the EIA regulations can be improved despite budgetary constraints. The hypothesis cannot therefore be invalidated and it is true to state that the implementation of the EIA regulations in South Africa, by the REAs can be improved despite budgetary constraints.

6.10 The Final Call

South Africa has an opportunity to set an example to first as well as third world countries by taking the initiative to improve its EIA system. In particular, South Africa should learn from the shortfalls as well as the successes experienced during the implementation of well established EIA systems and attempt to formulate innovative solutions to the most significant constraints that are relevant to the South African situation. The final call is therefore to strive for the implementation of a world-class, uniquely South African EIA system despite capacity constraints.

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Appendix 1: The extensive approach to defining the term environment

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On the 4th of June 1991, the Committee for Environmental Law discussed the circumscription of the term environment. It was concluded that two approaches to defining the term could be adopted, the extensive and the limited approach. In a legislative context, the extensive approach was considered appropriate for South Africa. According to this approach, the term environment should be defined in the broadest possible context to include the Natural environment, Spatial environment, Sociological environment, Economic environment, Cultural-historic environment, Built environment, Political environment and the Labour or Work environment (Committee for Environmental Law, 1991).

The limited approach constructs the term environment more narrowly, as pertaining to only certain components. If the term environment was defined only in terms of the biophysical or only the cultural or political, this would constitute a limited approach. The categories are also considered to be mutually exclusive, as the natural environment stands in contrast to the anthropogenic. This approach is adopted in some legislation such as the German Acts but the extensive approach is used more frequently in the majority of countries practicing EIA around the world.

The draft IEM guideline documents, released in 1989 offer an extensive definition of the term environment, taken to include physical, biological, social, economic, cultural, historical and political components. It is surprising that this progressive definition was not included in the EIA regulations. However, the National Environmental Management Act No. 107 of 1998, under which the new IEM regulations will be published defines the term environment in an extensive fashion:

*'The Surroundings within which humans exist and that are made up of –
the land, water and atmosphere of the earth;
micro-organisms, plant and animal life;
any part or combination of (i) and (ii) and the interrelationships among and between them;
and
the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that
influence human health and well-being' [pg.8, Section 1(xi)].*

Other recent examples from South African environmental legislation and reports illustrate the widely accepted paradigmatic shift towards the use of the term environment in its extensive context. Examples include the Cape Metropolitan Councils State of the Environment Report (1999) that defines the term environment as:

'Our surroundings, including living and non-living elements, e.g. land, soil, plants, animals, air, water and humans. The environment also refers to our social and economic surroundings, and our effect on our surroundings. The conditions and influences, under which any person, organism or collection of organisms exists, lives or develops. Natural ecosystems and habitats created by humankind form part of the environment. The natural components of the environment include air, water, land and all forms of life. The environment also includes social, political, economic, cultural, built and urban landscapes, working and other factors that determine people's place in and influence on the natural environment. Hence, the environment is made up of both biophysical and socio-economic components' (pg.209).

The EIA Guideline Document (1998) produced as an aid to the EIA regulations determined that the scope of the term environment should be taken to include *'the effects on human health, socio-economic conditions, physical and cultural resources'* (DEAT, 1998). It is incongruous to note that no definition of the environment is given in the EIA regulations. This is presumably as a result of the regulations being promulgated under the Environmental Conservation Act, No 73 of 1989, in which case the term environment should be interpreted in a similar fashion to that contained in Act.

This research adopts the extensive approach to defining the environment.

**Appendix 2: Constraints hindering authority implementation of the EIA regulations
identified during a literature review and from discussions with participants in the EIA
process.**

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Constraints hindering authority implementation of the EIA Regulations identified during a literature review and from discussions with participants in the EIA Process. *

1. Advertising of a proposed project is often insufficient to create public awareness.
2. Increase in the number of EIA Practitioners since the promulgation of the regulations.
3. Lack of inclusion of residual impacts in the EIA report.
4. EIA regulations are often implemented independently of other legislation.
5. Authorities lack sufficient resources to implement the regulations optimally.
6. Lack of guidelines aiding authorities when reviewing the Scoping and Environmental Impact Reports.
7. Authorities fail to take action against developers for non-compliance with EIA legislation or the environmental contract.
8. Absence of a monitoring system for determining whether the conditions of the environmental contract are being adhered to.
9. There is no system of accreditation for environmental consultants.
10. There is a lack of information explaining the EIA process, which is readily available in a format that can be understood by the general public.
11. EIA is not marketed sufficiently to create awareness amongst the public.
12. There is a lack of guidelines provided by the authorities to aid the applicant and/or consultant in producing good scoping and EIA reports.
13. There is a lack of review criteria that are specific to different types of projects (i.e. urban areas, wetlands, coastal dune systems etc).
14. There is a lack of interaction between authorities and their specialist departments (i.e. scientific services) to obtain input on technical issues when reviewing a scoping or EIA report.
15. There is a lack of training, workshops or short courses provided for the environmental authorities to enhance their ability to implement the regulations.
16. There is an absence of a library or central repository for filing present and past applications, scoping and environmental impact reports.
17. DEA&T are in a constant state of change. There is a rapid turnover of HOD's and ministers, loss of staff due to resource constraints, department restructuring, newness of the regulations and other factors that create an unstable environment in which to implement the regulations.
18. There is a lack of interaction between authorities from different provinces implementing the regulations to discuss the strengths, weaknesses and to formulate methodology for improving the regulations.
19. There is a lack of consistency in decision making between authorities implementing the regulations.
20. There is a lack of guidelines providing detail about the factors that ought to be considered by

authorities in reaching a decision either accepting or refusing the Scoping report and the EIR.
21. Comments made by I&AP specialists (i.e. botanical society, environment and wildlife society etc) on the scoping and EIA Report are often ignored by consultants without any written justification to the individuals making the comments as to why their recommendations were rejected.
22. There is a lack of outsourcing (hiring consultants or other individuals capable of aiding in the review process) when authorities are swamped with, or lack the technical expertise to review, a scoping or EIA report.
23. Authorities implementing the regulations are not always suitably qualified to engage with the wide range of issues dealt with by an EIR.
24. Site visits by the authorities, applicants and/or consultants to discuss the environmental impacts of a proposed development do not occur for all significant projects.
25. Applications are not always filed for public access in time for the public and other I&APs to add input to the subsequent scoping report.
26. The depth of pre-application consultation between the authorities and the applicant and/or consultant often occurs only on a basic level for developments that have the potential to significantly affect the environment.
27. The authorities lack guidelines for determining which projects should be exempted from the EIA process.
28. Pre-application consultation between authorities and the applicant and/or consultant does not occur for all developments that have the potential to significantly affect the environment.
29. The depth of pre-application consultation between the Relevant Environmental Authorities and the applicant and/or consultant occurs only on a basic level for developments that have the potential to significantly affect the environment.
30. The Environmental Impact Reports produced by consultants are often of a variable quality.
31. Cumulative effects of impacts and transboundary issues are not sufficiently dealt with.
32. The content of the EIA regulations are lacking in certain areas.
33. No fees payable by the applicant to the authority to aid in financing the review process.
34. The authorities have no system in place for prioritisation of applications.
35. Lack of feasible alternatives to the current development plan offered by consultants.
36. In some cases, the MEC of a province may override the decision of the relevant environmental authority to satisfy big business.
37. The South African Judicial System is slow to process interdicts to halt development or to prosecute any applicants who are in contravention of any EIA legislation.
38. The courts are more accessible to individuals and organisations that are in possession of extensive monetary resources.
39. Cumulative effects of developments are not taken into account.

- | |
|--|
| 40. EIA reports are often highly technical and specialised making it difficult for authorities to review. |
| 41. Lack of an informed and/or educated citizenry in South Africa. |
| 42. A variety of socio-political and economic issues faced in South Africa (i.e. poor access to resources, population growth, rapid urbanisation etc). |

***Note:** These constraints are not in rank order, but rather denote the number of constraints identified.

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Appendix 3: Respondent contact details and personal communication list

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Contact details of key participants in the EIA process who participated in the empirical phases of the research

Consultants

Name	Organisation	Position	Telephone/fax/Cell	E-mail
Barend Smit	VKE Environmental Services (Gauteng)	Associate	Tel: (011) 886 3560 Fax: (011) 886 4589	Barend.smit@vkejhb.co.za
Ben Benade	EKO-IMPAK (Northern Cape)	Director	Tel/Fax: (053) 831 7928 Cell: 083 262 3683	ekoimpak@intekom.co.za
Rudi Kruger	ESKOM Environmental (Northern Cape)	Environmental Manager		
Jonathan Odendal	ENVIRO-TECH (Northern Cape)	Director	Tel: (053) 353 1628 Cell: 082 3044 175	
Tony Barbour	SRK Consulting (Cape Town)	Principal Environmental Scientist	Tel: (021) 421 7182 Cell 082 6005266	tbarbour@srk.co.za
Mike Luger	Ninham Shand (Cape Town)	Head of Environmental Evaluation Unit	Fax: (021) 424 5588 Tel: (021) 424 5544	Enviro@shand.co.za
Vicki King	Walmsley Environmental Consultants (Durban)	Director	Tel: (031) 765 6969 Fax: (031) 765 5393	Wecd@iafrica.com
Wayne Mcferran	Walmsley Environmental Consultants (Durban)	Environmental Scientist	Tel: (031) 765 6969 Fax: (031) 765 5393	Wecd@iafrica.com
Mike Cohen	Integrated Environmental Unit (Port Elizabeth)	Director	Tel/fax: (041) 581 2983	
Nick Holdcroft	SRK Consulting (Durban)	Senior Environmental Consultant	Tel: (031) 23 1365 Fax: (031) 303 3387	Nholdcroft@srk.co.za
Philma Victor	Environmental Landscapes	Director	Tel/Fax: (041) 586 4380 Cell: 083 7475789	
Eunice van Niekerk	GLOBECON	Environmental Scientist	Tel: (012) 347 2051	

	Environmental Management (Pretoria)		Fax: (012) 347 2069	
Brian Tibbles	Environmental Outsource (Johannesburg)	Environmental Scientist	Tel: (011) 472 6693 Fax: (011) 472 6693	
Marion Thomas	Jeffares and Green Consulting Engineers (Cape Town)	Environmental Scientist	Tel: (021) 976 5076 Fax: (021) 975 5383	Thomass@iafrica.com
Allison Burger Pinter	SRK Consulting (Gauteng)	Director	Tel: (011) 441 1100 Fax: (011) 441 1210 082 600 7702	aburger@srk.co.za

Relevant Environmental Authorities

Name	Organisation	Position	Telephone/fax/Cell	E-mail
Dennis Laidler	Western Cape Nature Conservation	Director	Tel: (021) 483 3925 Fax: (021) 230 939	Dlaidler@PAWC.wcape.gov.za
Seyathie Mitha	Department of Agriculture, Conservation & Environment	Director	Tel: (053) 8300655 Fax: (053) 830 0600	
Lize Bothma	Department of Agriculture, Conservation & Environment	Assistant Director: Environmental Assessment	Tel: (011) 355 1934 Fax: (011) 337 2292	Lizeb@gpg.gov.za
Allen Struwig	Department of Economic Affairs, Environment & Tourism	Principal Nature Conservation Scientist	Tel: (041) 3738 691 Fax: (041) 3737755	StruwigA@cmcpce.ecape.gov.za
Sarah Allen	Department of Traditional & Environmental Affairs	Director	Tel: (0331) 471820 Fax: (0331) 471826	
Dr Paul Martin	Nature Conservation & Parks and Recreation	Director	Tel: (041) 585 9711 Fax: (041) 585 2907	

Mr Tsepho Moremi	Department of Agriculture, Conservation & Environment	Director	Tel: (014) 592 8261/3 Fax: (014) 592 3428	
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Environmental Concern Groups

Name	Organisation	Position	Telephone/fax/Cell	E-mail
Muna Lakhani	Earthlife Africa	Director	Tel/Fax: (011) 477 4653	
Vanessa Black	Environmental Justice Networking Forum and Earthlife Africa	Provincial Coordinator	Tel/Fax: (011) 477 4653	
Lynn Brown	Wildlife and Environment Society of South Africa (Gauteng)	Regional Ecologist: Northern Areas	Tel/Fax: (011) 486 3294/96/97	
Kristal Maze	Western Cape Botanical Society of South Africa	Conservationist	Tel: (021) 797 2090 Fax: (021) 797 2376	
Mr Richard Boon	Wildlife and Environment Society of South Africa (Durban)	Committee Member	Tel: (013) 733 4263 Fax: (013) 733 4263	
Mr Tony Dechart	Wildlife and Environment Society of South Africa (Eastern Cape)	Executive Committee	Tel/Fax: (041) 32 4150	
Leila Mohammed	Wildlife and Environment Society of South Africa (Cape Town)	Conservationist	Tel: (021) 701 1397 Fax: (021) 701 1399	

**Appendix 4: Questionnaire for rating the most significant constraints hindering EIA
implementation in South Africa**

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QUESTIONNAIRE: THE CONSTRAINTS HINDERING THE IMPLEMENTATION OF THE 1997 EIA REGULATIONS BY RELEVANT ENVIRONMENTAL AUTHORITIES IN SOUTH AFRICA

Instructions

Please rate the following constraints on a scale of 1-5. For example, if you consider a constraint to be of the least significance in hindering Authority implementation of the EIA regulations then rate the constraint with a one. If you consider the constraint to be highly significant in hindering Authority implementation of the EIA regulations then rate it with a five. Please add and rate any other constraints hindering authority implementation of the regulations that you consider to be significant which have not been included in the questionnaire.

Rating Scale

- | | | |
|-------------------|--------------------------|----------------------------|
| 1 – Insignificant | 2 – Slightly Significant | 3 – Reasonably Significant |
| 4 – Significant | 5 – Highly Significant | |

1. Pre-application consultation between the Relevant Environmental Authorities (REAs) and the applicant and/or consultant does not occur for all developments that have the potential to significantly affect the environment.
2. The REAs lack guidelines for determining which projects should be exempted from the EIA process.
3. The depth of pre-application consultation between the REAs and the applicant and/or consultant occurs only on a basic level for developments that have the potential to significantly affect the environment.
4. Advertising is often insufficient to create public awareness about a proposed project.
5. Applications are not always filed for public access in time for the public and other I&APs to add input to the subsequent Scoping report.
6. Site visits by the REAs, applicants and/or consultants to discuss the environmental impacts of a proposed development do not occur for all projects that have the potential to significantly affect the environment.
7. REAs implementing the regulations are not always suitably qualified to engage with the wide range of technical and specialised issues frequently dealt with by a Scoping or EIA Report.
8. There is a lack of outsourcing (hiring individuals capable of aiding in the review process) when REAs are swamped with, or lack the technical expertise to review a Scoping or EIA report.
9. Comments made by I&AP specialists (i.e. botanical society, environment and wildlife society etc) on the EIR are often ignored by consultants without any written justification to the individuals making the comments as to why their recommendations were rejected.
10. There is a lack of guidelines providing detail about the factors that ought to be considered by authorities in reaching a decision either accepting or refusing the Scoping or EIA report.

11. There is a lack of consistency in decision-making between REAs operating in the same department.
12. There is a lack of communication between authorities from different provinces implementing the regulations, which prevents inter-provincial constraints from being discussed and solutions being found to improve the implementation of the regulations.
13. DEA&T is in a constant state of change. There is a rapid turnover of HODs and ministers, loss of staff due to resource constraints, department restructuring, newness of the regulations and other factors that create an unstable environment in which to implement the regulations.
14. There is no monitoring system in place to check whether the conditions of the environmental contract are adhered to during the life cycle of a project.
15. Legal action against developers for non-compliance with the environmental contract or any other legislation is seldom initiated by the REAs.
16. There is no library or central repository for filing present and past Applications, Scoping and EIA reports.
17. There is a lack of training, workshops or short courses offered to environmental authorities to enhance their ability to implement the regulations.
18. There is a lack of consultation between REAs and their specialist departments (i.e. Scientific Services) to obtain input on technical issues when reviewing Scoping or EIA reports.
19. There is a lack of review criteria that are specific to different types of projects and receiving environments (i.e. urban areas, wetlands, coastal dune systems etc).
20. There is a lack of guidelines provided by the REAs to aid the applicant and/or consultant in producing good Scoping and EIA reports.
21. The public, developers and other I&APs are not adequately informed/educated about the EIA process.
22. The EIA regulations are often implemented independently of the planning process of a development.
23. There is no system of accreditation of environmental consultants.

Appendix 5: Ranking sheet containing the twelve most significant constraints

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**FOLLOW UP QUESTIONNAIRE: THE MOST SIGNIFICANT CONSTRAINTS
HINDERING AUTHORITY IMPLEMENTATION OF THE 1997 ENVIRONMENTAL
IMPACT ASSESSMENT REGULATIONS IN SOUTH AFRICA**

Instructions: Please rank the twelve constraints in the table below in order of how significantly you think each constraint hinders Authority implementation of the 1997 EIA regulations (Government Gazette No. 18261) in South Africa. Please place your choice (1 through 12) in the right-hand column. For example, if you consider a constraint to be the most significant constraint hindering the implementation of the EIA regulations in South Africa then please allocate the constraint a rank of one, the next most significant will receive a rank of two and the least significant, a rank of twelve.

NB: Please rank all of the constraints, ensuring that no two constraints receive the same ranking.

Note: Before undertaking the ranking, please read through the attached document, which briefly elaborates on each of the constraints:

CONSTRAINT	RANK
REA's implementing the regulations are not always suitably qualified and/or experienced to engage with the wide range of technical and specialised issues frequently dealt with by Scoping and EIA Reports.	
There is a lack of outsourcing (hiring consultants or other individuals capable of aiding in the review process) when REA's are inundated with, or lack the technical expertise to review a Scoping or EIA report.	
There is a lack of communication between REA's from different provinces, which prevents constraints from being discussed and solutions being found to improve the implementation of the regulations.	
The Relevant Environmental Authorities rarely initiate legal action against developers for non-compliance with the terms of an environmental contract or a breach of any environmental legislation.	
The absence of a mandatory monitoring system to check/investigate whether the terms and conditions of the environmental contract/permit are adhered to during the life cycle of a project.	
There is no system of accreditation for environmental consultants.	
The EIA regulations are often implemented independently of the planning process of a development.	
Advertising of a proposed development is often insufficient to create public awareness.	
In some cases issues & comments raised by I&AP's concerning a development are not taken into account during the compilation of the Scoping or EIA Reports.	
Site visits by Authorities, Applicants and/or Consultants to discuss the environmental impacts of a proposed development do not occur for all projects that have the potential to significantly affect the environment.	
The public, I&AP's and other interested parties are not adequately informed and/or educated about the EIA process.	
There are a lack of specific review criteria from which the REA's can assess the impact of particular activities on a variety of receiving environments.	

**Appendix 6: Description of the twelve most significant constraints contained in the ranking
questionnaire**

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Explanation of the Twelve Most Significant Constraints Hindering EIA implementation in South Africa

REA's implementing the regulations are not always suitably qualified and/or experienced to engage with the wide range of technical and specialised issues frequently dealt with by Scoping and EIA Report

Due to poor civil service salary structures, individuals with experience in the field of EIA often seek higher paid positions outside of government. As a result experienced authorities often have to be replaced with individuals lacking experience. This may result in improperly reviewed Environmental Impact Reports (EIR's) and/or a lengthy review process. Many of the authorities implementing the regulations also hail from backgrounds that ill equip them to deal with the wide range of social and economic issues often contained in an EIR. A lack of experience in EIR review also inhibits decision-making, as an authority may not feel sufficiently confident to make a decision on a particularly large or sensitive development.

There is a lack of outsourcing (hiring consultants or other individuals capable of aiding in the review process) when REA's are inundated with, or lack the technical expertise to review a Scoping or EIA report

EIR's often contain technical information from a number of different specialists. In some cases the technical information may be outside the field of expertise of the authorities reviewing the report. In addition, many departments tasked with reviewing EIA's in 6 case study provinces are understaffed.

There is a lack of communication between REA's from different provinces, which prevents constraints from being discussed and solutions being found to improve the implementation of the regulations

In many cases, environmental authorities in the different provinces implement the regulations in isolation. The lack of communication between authorities results in little or no interchange of information on the successes and constraints experienced with EIA implementation.

The Relevant Environmental Authorities rarely initiate legal action against developers for non-compliance with the terms of an environmental contract or a breach of any environmental legislation

Without established legal precedents or the pursuit of legal action against a breach in the environmental contract or legislation, authorities are perceived as ineffectual. Some of the main reasons for the lack of legal action against developers have been cited as:

- The protracted South African judicial system.
- Lack of priority given to environmentally - related issues within the judiciary system.
- Lack of personnel within EIA authorities to undertake lengthy legal processes.
- In some cases the offending party may be another government department making the prosecution process difficult.

The absence of a mandatory monitoring system to check/investigate whether the terms and conditions of the environmental contract/permit are adhered to during the life cycle of a project

Without sufficient inspection and monitoring there is no way of ensuring that the conditions of an environmental contract are adhered to and that no activity occurs during the course of construction, operation and decommissioning of a project, which may detrimentally affect the environment. Authorities have no way of receiving feedback as to whether the EIA has been effective in mitigating negative environmental impacts or whether a situation has arisen where a breach in the environmental contract or any other legislation has occurred.

There is no system of accreditation for environmental consultants

There are no requirements defining the practice of environmental consultancy in South Africa and there is no body or statute to regulate who practices as an environmental consultant. Allowing unsuitably qualified individuals to practice as environmental consultants can result in a variety of problems hindering the implementation of the EIA regulations.

EIA regulations are often implemented independently of the required planning process of a development

There is little attempt to integrate EIA into the planning process of many developments. This may lead to conflict between the two processes and resultant delays to the project.

Advertising of a proposed development is often insufficient to create public awareness

The applicant and/or consultant are responsible for ensuring that they adhere to the minimum advertising requirements. When advertising is insufficient, objections may be raised by Interested and Affected Parties (I&APs) at a later stage causing delays to the EIA process.

In some cases issues & comments raised by I&AP's concerning a development are not taken into account during the compilation of the Scoping or EIA Reports

During the compilation of an EIA there are several stages in which I&AP's are required to make comments and to give input on the content of an EIA. Their input is often not given due cognisance by the parties compiling the Scoping or EIA report.

Site visits by the REAs, applicants and/or consultants to discuss the environmental impacts of a proposed development do not occur for all projects that have the potential to significantly affect the environment

In order to fully comprehend all the issues associated with a particular development, it is necessary for the relevant environmental authorities to participate in a site visit in conjunction with the developer and consultant. In many cases site visits do not occur.

RESULTS OF THE PHASE ONE QUESTIONNAIRE IN WHICH CONSTRAINTS WERE RATED ON A SCALE OF 1-5 BY RESPONDENTS

	Constraints numbered one to twenty three and the rating applied to each constraint																						
Consultants	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
VKE	1	5	4	2	3	4	4	4	4	2	4	4	5	4	4	1	3	2	2	3	3	4	1
Ben Benade	5	4	5	4	1	4	5	5	1	4	5	4	5	3	4	1	1	3	5	1	3	4	5
Rudi Kruger	1	5	2	2	2	1	5	5	2	5	4	1	4	1	4	1	5	2	5	1	2	5	5
Jonathan OD	5	5	5	5	5	2	5	5	5	5	5	5	3	5	5	5	5	5	5	5	5	4	5
T Barbour	1	4	1	4	4	5	5	4	5	4	3	3	4	5	4	3	4	2.5	5	5	4	5	5
M Luger	1	4	2	1	2	2	4	5	3	5	3	1	3	5	5	3	1	3	4	4	3	4	5
A Burgher	1	1	5	4	1	3	4	2	2	3	4	4	4	4	5	3	1	2.5	4	3	3	5	5
Vicki King	5	3	5	5	1	5	5	5	5	5	3	4	3	5	5	3	2	5	4	2	2	5	5
W McFerran	5	4	3	3	1	4	4	5	5	3	5	3	3	5	5	3	2	4	4	1	2	4	5
Mike Cohen	3	5	1	3	2	5	5	5	2	5	5	5	3	5	3	5	3	5	5	1	3	5	5
Nick Holdcroft	1	3	1	4	3	1	2	3	2	1	1	0	1	5	3	4	4	1	3	1	3	4	5
Philma Victor	1	3	1	3.5	1	1	1	5	2	4	4	5	2	4	5	3	1	1	5	1	1	4	4
Eunice van Niekerk	3	2	3	4	4	2	5	4	2	3	4	4	4	5	4	5	2	2	3	4	2	4	3
Brian Tibbles																							
TOTAL	33	48	38	44.5	30	39	54	57	40	49	50	43	44	56	56	40	34	38	54	32	36	57	58
MEAN	2.538	3.692	2.923	3.423	2.308	3	4.154	4.385	3.077	3.769	3.846	3.308	3.385	4.308	4.308	3.077	2.615	2.923	4.154	2.462	2.769	4.385	4.462
Authorities																							
Dennis Laidler	3	4	4	4	3	2	5	4	2	4	2	5	3	4	4	3	3	4	4	2	4	5	4
S Mitha	4	3	3	5	3	4	5	5	1	4	1	5	3	5	5	5	5	1	4	5	5	3	5
L Bothma	4	1	4	4	2	3	1	3	1	5	1	5	4	3	4	5	1	5	3	5	5	4	3
A Struwig	2.5	3	3	3	3	2	4	4	2	3	2	2	4	5	4	1.5	4	3.5	3.5	3.5	2	4.5	4
S Allen	3	3	4	5	4	3	3	4	2	4	2	2	1	5	4	2	2	3	4	3	2	3	4
P Martin *	4	5	3	5	4	5	5	5	5	4	2	5	5	5	5	3	5	5	5	2	3	4	3
Eldon van Boom	2	4	3	3	4	3	4	4	3	2	2.5	4	4	5	3.5	4	4.5	3.5	4	3	4	5	5
TOTAL	22.5	23	24	29	23	22	27	29	16	26	12.5	28	24	32	29.5	23.5	24.5	25	27.5	23.5	25	28.5	28
MEAN	3.214	3.286	3.429	4.143	3.286	3.143	3.857	4.143	2.286	3.714	1.786	4	3.429	4.571	4.214	3.357	3.5	3.571	3.929	3.357	3.571	4.071	4
Env Groups																							
Mana Lakhani	4	4	5	5	5	5	5	5	5	5	4	4	4	5	5	3	5	4	5	4	5	4	5
Vanessa Black	4	2	3	5	5	5	5	5	5	2	4	4	3	5	5	3	5	4	5	4	5	4	5
Lynn Brown	2	2	4	5	4	3	1	3	5	5	3	3	3	5	5	3	2	4	5	4	5	5	5
Crystal Maze	3	3	3	4	5	2	5	5	4	1	4	3	5	4	5	4	3	3	5	5	3	4	5
Tony Dechart	4	2	3.5	4	2	4	3	5	5	2	2	2	2	5	5	3	4	3	3	2	4	4	5
Leila Mohamed	4	5	4	5	1	5	5	4	5	1	5	3	2	5	5	4	3	3	4	4	4	4	3
Liz Mc Daid	2	3	4	5	3	5	5	1	5	1	4	3	1	5	5	5	4	2	3	1	3	4	3
TOTAL	23	21	26.5	33	25	29	29	28	34	17	26	22	20	34	35	25	26	23	30	24	29	29	31
MEAN	3.286	3	3.786	4.714	3.571	4.143	4.143	4	4.857	2.429	3.714	3.143	2.857	4.857	5	3.571	3.714	3.286	4.286	3.429	4.143	4.143	4.429
GRAND TOTAL	78.5	92	88.5	106.5	78	90	110	114	90	92	88.5	93	88	122	120.5	88.5	84.5	86	111.5	79.5	90	114.5	117
GRAND MEAN	3.013	3.326	3.379	4.093	3.055	3.429	4.051	4.176	3.407	3.304	3.115	3.484	3.223	4.579	4.507	3.335	3.277	3.26	4.123	3.082	3.495	4.2	4.297

Note: The highlighted sections indicate the constraints for each of the respondent groups as well as the grand mean achieving a rating exceeding four (The rating of the minimum threshold of significance)

The public, I&AP's and other interested parties are not adequately informed and/or educated about the EIA process

The EIA process has not been properly marketed, advertised or explained in South Africa. The consequences of this are that the public and other I&AP's lack awareness and understanding of the EIA process.

There are a lack of specific review criteria from which the REA's can assess the impact of particular activities on a variety of receiving environments

The REA's currently lack any specific criteria from which to assess the impact that a particular project has on different receiving environments. For example, the review criteria for the construction of a Telecom tower in a pristine fynbos area should be different to those relating to the construction of the same tower in a built environment.

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Appendix 7: Results of the phase one study, containing the twenty three constraints that were rated by the respondent groups

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Appendix 8: Results of the phase two study, containing the twelve constraints that were ranked by the respondent groups

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RESULTS OF THE PHASE TWO QUESTIONNAIRE IN WHICH CONSTRAINTS WERE RANKED IN ORDER OF SIGNIFICANCE BY RESPONDENTS

Constraints numbered one to twelve and the rank applied to each constraint

Consultants	1	2	3	4	5	6	7	8	9	10	11	12
VKE	1	2	6	7	3	11	4	10	12	9	8	5
Ben Benade	6	5	9	8	2	4	3	12	11	7	1	10
Rudi Kruger	1	4	12	9	8	5	2	11	10	7	3	6
Brian Tibbles	2	1	10	6	5	7	8	9	12	11	4	3
Marianne Morris	5	9	11	2	7	6	12	4	12	1	3	8
M. Luter	1	4	9	6	6	2	7	12	11	8	10	3
A. Burger	5	6	8	2	3	12	4	11	10	9	1	7
Vicki King	6	1	6	3	11	1	3	10	6	2	9	10
W. Mofenan	1	4	9	8	7	6	3	11	12	2	5	10
Mike Cohen	1	8	9	6	5	2	3	10	11	12	7	4
Nick Holdcroft	3	2	9	4	1	6	11	5	8	12	10	7
Philma Victor	4	2	11	1	3	6	7	8	9	10	12	5
Eunice van Niekerk	2	9	10	11	1	8	7	4	5	12	3	6
Jonathan OD												
T. Barbour												
TOTAL	38	57	119	72	62	76	74	117	129	102	76	84
MEAN	2.923076923	4.384615385	9.153846154	5.538461538	4.769230769	5.846153846	5.092307692	9	9.923076923	7.846153846	5.846153846	6.461538462
	Rank 1	Rank 2		Rank 4	Rank 3		Rank 5					
Authorities												
Dennis Laidler	2	1	12	3	8	5	6	7	4	11	10	9
S. Mitha	4	11	6	1	2	7	3	9	8	10	12	5
L. Bothma	9	12	8	8	2	5	1	4	10	11	3	7
A. Struwig	1	5	11	2	4	3	7	10	9	12	8	6
S. Allen	12	8	11	3	2	7	5	10	9	8	4	1
P. Martin	1	2	6	4	3	7	5	10	11	8	12	9
Lucia Chauke	6	4	5	7	8	3	1	9	11	10	12	2
TOTAL	38	41	57	28	21	37	28	59	62	70	61	30
MEAN	3.447368421	6	7.666666667	4.333333333	4.166666667	5.866666667	1.5	8.166666667	8.833333333	9.666666667	8.833333333	5.5
	Rank 5			Rank 3	Rank 2	Rank 5	Rank 1					4
Env Groups												
Muna Lakhani	3	8	11	1	3	9	12	7	6	5	10	4
Vanessa Black	4	5	11	2	1	9	6	7	3	8	10	12
Kristal Maze	1	8	12	3	4	5	9	7	5	10	11	2
Tony Dechart	3	11	12	8	7	10	6	1	2	9	4	5
Liz Mc Daid	8	12	11	3	7	4	5	2	1	9	6	10
TOTAL	19	44	57	17	22	37	38	21	17	41	41	33
MEAN	3.8	8.8	11.4	3.4	4.4	7.4	7.6	4	3.4	8.2	8.2	8.6
	Rank 2			Rank 1	Rank 3	Rank 5		Rank 1				4
GRAND TOTAL	92	142	233	117	113	150	142	200	208	219	178	156
GRAND MEAN	3.83	5.68	9.32	4.09	4.52	6	5.4	8	8.32	8.52	7.12	6.24
	Rank 1	Rank 5		Rank 3	Rank 2		Rank 4					

Note: The highlighted sections indicate the top five ranked constraints for each of the respondent groups as well as the grand mean