"Environmental Impact Assessment, Integrated Development Planning and the Pursuit of Sustainable Development in South Africa: A Critical Reflection on the Consideration of Alternatives."

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Thesis presented in partial fulfilment of the requirements for the degree of Master of Philosophy in Sustainable Development Planning and Management at Stellenbosch University.

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Date: **March 2009**

DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, and that I am the owner of the copyright thereof (unless to the extent explicitly otherwise stated) and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

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ABSTRACT

Despite our best planning and Environmental Impact Assessment ("EIA") efforts we seem to be failing in our pursuit of Sustainable Development. In South Africa we find ourselves confronted with the harsh reality that after 14 years of democracy, more than a decade of compulsory EIA, and 12 years of legislated Integrated Development Planning ("IDP"), poverty remains widespread and persists alongside affluence, while inequalities are also growing. In addition South Africa's life-supporting ecosystems continue to deteriorate at an alarming rate. Critically reflecting on what is going wrong, it is clear that there is an emergent consensus in the discourse that points towards the inadequate consideration of alternatives.

A literature review of the historical development and social construction of the concept of "sustainable development"; a theoretical analysis of sustainable development, planning and EIA; as well as an analysis of the legislative and policy framework for EIA and IDP in South Africa, shows that the consideration of alternatives is the "heart" and "soul" of EIA and IDP, and therefore of the pursuit of sustainable development in South Africa. A content analysis of a sample of EIAs and IDPs undertaken and produced in the Western Cape Province of South Africa, however, indicates that alternatives are not being adequately considered during the current practice of EIA and IDP in South Africa – resulting in only slightly less unsustainable development and a perpetuation of the unsustainable and unjust "business-as-usual" development types and patterns of the past.

EIA and IDP can never be, and were never supposed to be completely separate processes. EIAs must be considered within the context to be provided by the sustainable development vision, goals and objectives to be formulated in, and the desired spatial form and pattern of land use to be reflected in an area's IDP and Spatial Development Frameworks ("SDF"). Properly informed Strategic Environmental Assessment based IDPs and SDFs, refined by Environmental Management Frameworks, should therefore provide the strategic context and decision-making framework for the consideration of need, desirability and alternatives; with the actual and potential socio-economic and ecological impacts of a specific proposal to be considered during the project-level EIA. Project-level EIAs in turn providing "feedback" to the planning processes to ensure reflexivity and continued improvement. The improved integration and convergence of IDP and EIA decision-making methodologies and practice are therefore paramount to the adequate consideration of alternatives and the pursuit of sustainable development in South Africa.

While the challenges to be addressed by EIA and IDP in South Africa are complex and 'wicked', and the pursuit of sustainable development solutions is therefore also a complex and ongoing process, the need for fundamental alternatives that will lead to drastic and urgent change for the better are, however, just as real. The urgency and importance of the sustainable development challenge for South Africa calls for bold decisions and the search for sustainable alternatives that will deliver urgent and fundamental change for all South Africans. The practice of EIA and IDP should be driven by these realities and reflect the need for urgent and fundamental change.

OPSOMMING

Ten spyte van ons beste pogings ten opsigte van beplanning en omgewingsimpakanalise ("OIA"), wil dit voorkom asof ons faal in ons soeke na 'volhoubare ontwikkeling'. In Suid-Afrika word ons gekonfronteer deur die realiteit dat na 14 jaar van demokrasie, meer as 'n dekade van verpligte OIA, en 12 jaar van Geïntegreerde Ontwikkelingsbeplanning ("GOB"), armoede nog steeds wydverspreid voorkom en voortbestaan saam met rykdom, terwyl ongelykhede groei. Terselfdertyd gaan Suid-Afrika se lewens-onderhoudende ekosisteme agteruit teen 'n skrikwekkende spoed. 'n Kritiese blik op wat verkeerd loop, dui op die begin van 'n konsensus wat wys na die onvoldoende inagneming van alternatiewe.

'n Literatuur studie van die historiese ontwikkeling en sosiale konstruksie van die konsep van "volhoubare ontwikkeling"; 'n teoretiese analise van volhoubare ontwikkeling, beplanning en OIA; asook 'n analise van die wetlike en beleidsraamwerk vir OIA en GOB in Suid-Afrika, toon aan dat die inagneming van alternatiewe die "hart" en "siel" van OIA en GOB, en daarom van die strewe na volhoubare ontwikkeling in Suid-Afrika is. 'n Inhoudsanalise van 'n steekproef van OIAs en Genïntegreerde Ontwikkelingsplanne (GOPe) onderneem en geproduseer in die Wes-Kaap Provinsie van Suid-Afrika, dui egter aan dat die inagneming van alternatiewe tydens die huidige praktyk van OIA en GOB in Suid-Afrika nie behoorlik aangespreek word nie – wat lei tot slegs geringe minder onvolhoubare ontwikkeling en die voortsetting van die onvolhoubare en onregverdige "besigheid-soos-gewoonlik" ontwikkelingstipes en patrone van die verlede.

OIA en GOB kan nooit, en was nooit veronderstel, om heeltemal afsonderlike prosesse te wees nie. OIAs moet oorweeg word binne die konteks wat geskep moet word deur die volhoubare visie, eindpunte en doelwitte wat geformuleer moet word tydens, en die gewensde ruimtelike vorm en patroon van grondgebruik soos wat gereflekteer moet word in, 'n area se GOP en Ruimtelike Ontwikkelings Raamwerk ("ROR"). Voldoende ingeligte Strategiese Omgewingsanalise gebaseerde GOPe en RORe, verfyn deur Omgewingsbestuursraamwerke, behoort daarom die strategiese konteks en besluitnemingsraamwerk te skep vir die inagneming van die behoefte, gewensdheid, en alternatiewe; met die werklike en potensiale sosio-ekonomiese en ekologiese impakte van 'n spesifieke voorstel wat bepaal moet word tydens die projek-vlak OIA. Met projek-vlak OIAs wat weer moet "terugvoering" gee aan beplanningsprosesse ten einde voordurende verbetering te verseker. Die verbeterde integrasie en saamkoms van GOB en OIA besluitnemingsmetodes en praktyke is daarom krities vir die voldoende inagneming van alternatiewe en die strewe na volhoubare ontwikkeling in Suid-Afrika.

Terwyl dit 'n realiteit is dat die uitdagings wat deur OIA en GOB in Suid-Afrka aangespreek moet word kompleks en "wicked" is, en die strewe na volhoubare oplossings daarom ook 'n komplekse en voortdurende proses is, is die behoefte vir fundamentele alternatiewe wat sal lei tot drastiese en dringende positiewe verandering net so waar. Die dringendheid en belangrikheid van die volhoubare ontwikkelings-uitdaging in Suid-Afrika, vra vir onbeskroomde besluite en die soek na volhoubare alternatiewe wat dringende en fundamentele verandering vir alle Suid-Afrikaners teweeg sal bring. Die praktyk van OIA en GOB behoort gedryf te word deur hierdie realiteite en behoort die behoefte vir dringende en fundamentele verandering te weerspieël.

ACKNOWLEDGEMENTS

The financial assistance of the Western Cape Department of Environmental Affairs and Development Planning towards this research is hereby acknowledged, and I wish to thank my colleagues at the Department for their advice and support. I specifically want to thank my colleague Bernard Niemand for his encouragement. Opinions expressed and conclusions arrived at, are those of the author and are not necessarily shared by the Department.

I wish to thank my supervisor, Anneke Muller, for her help and guidance in the completion of this thesis.

For their continued inspiration I want to thank all the staff, lecturers and my fellow students involved with the Master's Programme in Sustainable Development Planning and Management presented by the University of Stellenbosch and the Sustainability Institute located at the Lynedoch Eco-Village just outside Stellenbosch.

I must also thank my parents that led me down this path years ago and have been supporting me in my endeavours ever since.

Finally, a special thank you to my wife, Desireé, for her unwavering support and faith in me. Without her all my endeavours become insignificant and meaningless.

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LIST OF ACRONYMS

CSD	Commission on Sustainable Development
CSIR	South African Council for Scientific and Industrial Research
DDPTT	Decentralised Development Planning Task Team
DEA&DP	Western Cape Department of Environmental Affairs and Development Planning
DEAT	National Department of Environmental Affairs and Tourism
DFA	Development Facilitation Act (Act No. 67 of 1995)
DPLG	Department of Provincial and Local Government
ECA	Environment Conservation Act (Act No. 73 of 1989)
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
FEPD	Forum for Effective Planning and Development
GDP	Gross Domestic Product
GN	Government Notice
IAIAsa	International Association for Impact Assessment South Africa
IDP	Integrated Development Plan/ning
IEM	Integrated Environmental Management
MEC	Member of the Provincial Executive Council
MSA	Local Government: Municipal Systems Act (Act No. 32 of 2000)
NEMA	National Environmental Management Act (Act No. 107 of 1998)
SDF	Spatial Development Framework
SEA	Strategic Environmental Assessment
UNCED	United Nations Conference on the Environment and Development
UN-HABITAT	United Nations Human Settlements Programme
WCPDC	Western Cape Provincial Development Council

CHAPTER 1. INTRODUCTION: THE CONSIDERATION OF ALTERNATIVES AND THE PURSUIT OF "SUSTAINABLE DEVELOPMENT".

1.1. Introduction

"(…) *something has gone horribly wrong* (…)" (Stiglitz, 2002: 4)

Concern about the social and ecological consequences of bad decision-making resulted in the call for social and ecological factors to specifically be considered when deciding on development options, and eventually in the negotiated goal of sustainable development. Development planning and Environmental Impact Assessment ("EIA") methodologies, in turn, were specifically adopted as the means through which the state should intervene to address the imbalances of power and market failure in order to ensure democratic, well-informed and rational decision-making in the simultaneous pursuit of economic, social and ecological goals – in the pursuit of sustainable development.

Despite our best planning and EIA efforts we, however, seem to be failing in the above endeavour. An estimated one out of every five people in the world (approximately 1 billion people) is malnourished, do not have access to clean water, is a slum dweller and has to survive on less than US$ 1 a day, while an alarming two-thirds of the life-supporting ecosystems of the world are either degraded or are being unsustainably used (Cullinan, 2002: 20; UN-HABITAT, 2004: 6; The Worldwatch Institute, 2006: 171).

South Africa unfortunately is no exception. In South African we also find ourselves confronted with the harsh reality that after 14 years of democracy, more than a decade of compulsory EIA, and 12 years of legislated Integrated Development Planning ("IDP"), poverty remains widespread and persists alongside affluence, while inequalities are growing, and while South Africa's life-supporting ecosystems continue to deteriorate at an alarming rate (Van Schalkwyk, 1998: 2, Coetzee, 2002:

1; Mbeki, 2004; DEAT, 2006b; Fakir, 2007: 23; Theron, 2007: 191-192; The Presidency, 2008: 42) – "*something has gone horribly wrong*" (Stiglitz, 2002: 4).

1.2. Motivation and rationale for this dissertation.

Critically reflecting on what is going wrong, it is clear that there is an emergent consensus in the discourse that point towards the inadequate consideration of alternatives (IAIAsa, 2007). A number of reviews of the quality and performance of environmental assessment and development planning in developed and developing countries have since confirmed that one of the biggest shortcomings is the inadequate consideration of alternatives, with most project/policy modifications (if they are made at all) being of only minor environmental significance (Lund & Hvelplund, 1997: 366; Wesson, 1997: 198; Lance & Saulsbury, 1998: 32-33; Valve, 1998: 139-140; Lee & George, 2000: 140-141 & 256; Simpson, 2001: 91; Steinemann, 2001: 3; Bruhn-Tysk & Eklund, 2002: 131 & 138-139; Rossouw, Davies, Fortuin, Rapholo & de Wit, 2003: 214; Carmona & Sieh, 2004; Alshuwaikhat, 2005: 309; Dewar, 2007: 2; Hilding-Rydevik & Bjarnadóttir, 2007: 679; Nooteboom, 2007: 648 & 653; Smith, 2007: 127 & 131-133; Patel, 2008: 366 & 372; Sandham & Pretorius, 2008: 230 & 235-236).

In this regard Cashmore (2004: 404) also concluded that "*while there is a general consensus that EIA has led to enhanced consideration of environmental factors in decision-making, its achievements appear most favourable when compared with past neglect and failings, rather than when measured against sustainable development goals.*"

With the consideration of alternatives considered to be the "heart" and "soul" of EIA and development planning (Steinemann, 2001: 3; Tickner & Geiser, 2004: 814; Couclelis, 2005: 1354; Smith, 2007: 127), the inadequate consideration of alternatives explains the finding by Cashmore, Gwilliam, Morgan, Cobb and Bond (2004: 299-303) that, rather than altering the substantive outcomes of decisions, environmental assessment and development planning are mostly leading to only

modest “fine-tuning” of development projects and patterns. It is, therefore, not surprising that during the International Association for Impact Assessment South Africa (“IAIAsa”) regional southern African conference held in 2007, the consideration of alternatives was again identified as one of the key areas of practice that needs to be improved (IAIAsa, 2007).

A scan of the field of study (scanning previous research done and specifically research looking at the practice of EIA and IDP in South Africa), however, shows that the consideration of alternatives in EIA and IDP has not received enough attention in research. While some international research on the consideration of alternatives has been done, there is a need to deepen the research and specifically focus the spotlight on South Africa.

During early 1998, a few months after the promulgation of the first EIA Regulations in South Africa, I started working with the Western Cape Department (today known as the Department of Environmental Affairs and Development Planning’s (“DEA&DP”)) responsible for administering the EIA Regulations and for engaging with the drafting of the Municipal Integrated Developing Plans – where I still work. Critically reflecting back on more than ten years of experience in the EIA field, some experience with IDP, and based on the literature review undertaken over two years for the eight modules of a Bachelor’s of Philosophy Degree in Sustainable Development Planning and Management (University of Stellenbosch), the inadequate consideration of alternatives in the practice of EIA and IDP is of specific interest to me.

With 2007 marking the tenth year anniversary of legislated EIA in South Africa, and with the pending amendments to both the environmental management and land use management legislation in South Africa, it is considered an opportune time to critically reflect on the consideration of alternatives in the practice of EIA and IDP in South Africa. It is, however, more than just an opportune time. There is increasing pressure to scrap or erode what is perceived by some to be ineffective and inefficient “command-and-control regulations” that are hampering the urgent delivery of much

needed socio-economic development in South Africa (McDonald & Brown, 1995: 485 & 493; Kraft & Furlong, 2007: 331; Mbeki, 2008; Patel, 2008: 359-360). There is, therefore, also an urgent need to improve the practice of EIA and IDP in South Africa – in order to ensure that EIA and IDP practice more efficiently and effectively contribute to the pursuit of sustainable development in South Africa.

1.3. Research Aim and Objectives, Methodology and Outline of the Chapters.

1.3.1. Research Aim, Objectives and Methodology.

An analysis of the social and economic problems associated with the challenge of sustainable development, calls for the asking of fundamental questions and the root causes of the problems to be analysed and addressed, rather than just simply examining possible policy actions to ameliorate, but not prevent, the problems (Kraft & Furlong, 2007: 109).

To analyse the social and ecological problems associated with the challenge of sustainable development and the need for intervention, it is important to also explore the collective social construction of these problems through the representations, perceptions, values and interests of the social actors affected by the problems and those social actors whose behaviour may need to change to solve it (Neuendorf, 2002: 11; Knoepfel, Larrue, Varone & Hill, 2007: 126).

The historical development and social construction of the concept of "sustainable development" will therefore be critically analysed through the undertaking of a literature review. The analysis will broadly focus on the following dimensions of operational analysis proposed by Knoepfel *at al* (2007: 132-135): the intensity, the extent, the "newness", the urgency, and the social and political complexities of the sustainable development challenge.

While some of the classic texts will be considered, the literature review will also consider some of the more recent theory and discourse on EIA, planning and

sustainable development (Mouton, 2001: 90-91; Henning, Gravett & van Rensburg, 2005: 28-29). The literature review will critically consider the sustainable development theory and specifically focus on the importance that the consideration of alternatives (should) play during planning and EIA. The literature review will "*establish a bridge between* [this dissertation] *and the current state of knowledge*" (Blaikie, 2000: 71).

Against the background and context provided by the theoretical findings of the literature review (Moriarty, 1997: 96; Blaikie, 2000: 71), an analysis will then be undertaken of the legislative and policy framework for EIA and IDP in South Africa, again with a specific focus on the consideration of alternatives. According to Knoepfel *et al* (2007: 21) "[a]*ll policies aim to resolve a public problem that is identified as such on the governmental agenda"*, with policies being the "*response of the political administrative system to a social reality that is deemed politically unacceptable*."

Knoepfel *et al* (2007: 24) defines "public policy" as "*a series of intentionally coherent decisions or activities taken or carried out by different public – and sometimes – private actors, whose resources, institutional links and interests vary, with a view to resolving in a targeted manner a problem that is politically defined as collective in a more a less restrictive nature that are often aimed at modifying the behaviour of social groups presumed to be at the root of, or able to solve, the collective problem to be resolved (target groups) in the interest of the social groups who suffer the negative effects of the problem in question (final beneficiaries)*."

The object of the analysis of EIA and IDP in South Africa is, however, not political power in itself, but rather government intervention through the use of EIA and IDP processes for the purpose of addressing social and ecological concerns and pursuing sustainable development. Knoepfel *et al* (2007: 24) in this regard refer to public policy as "*decisions taken by public (and sometimes private) actors that are aimed at channelling the behaviour of a target population so that a collective problem that society is not in a position to manage on its own can be resolved by public effort*."

In addition, Knoepfel *et al* (2007: 9 & 33) highlights the need for policy analysis to also specifically analyse policy implementation, to evaluate the effects of the policy in terms of the changes in societal behaviour, and to specifically analyse the improvement in public management and decision-making. The findings of the literature review and theoretical analysis together with the findings of the analysis of EIA and IDP legislation and policies, will, therefore, be used to generate the research questions for the undertaking of a content analysis and survey of a sample of EIAs and IDPs undertaken and produced in the Western Cape Province of South Africa.

The analysis will critically analyse the policy implementation during the practice of EIA and IDP in South Africa; will specifically focus on the consideration of alternatives, and will be both quantitative-descriptive (considering the number of times certain alternatives and other aspects were considered) and qualitative-descriptive (considering the "depth" of consideration given to the types of alternatives and other aspects) (Neuendorf, 2002: 14). The research approach will be both empirical and non-empirical critical-analytical, with a focus on problem-solving (Mouton, 2001: 152-153, 158-166 & 175-176). Chapters 5 and 6 provide more details regarding the specific methodology used in the analysis of the EIAs and IDPs.

From the findings of the literature review, the analysis of policies and legislation and the analysis of the sample of EIA and IDPs, possible solutions to overcoming the constraints and shortcomings will, therefore, also be considered. The solutions and recommendations for addressing both the root causes of the inadequate consideration of alternatives, as well as pragmatic adjustments for immediate improvement of the consideration of alternatives during the practice of EIA and IDP in South Africa will be considered. The recommendations will therefore focus on both problem-prevention and problem-solving – in an effort to positively contribute to South Africa's pursuit of sustainable development.

1.3.2. Outline of the Chapters.

Chapter 2 will consist of a literature review of the historical development and social construction of the concept of "sustainable development". While some of the classic texts will be considered, the literature review will also consider some of the more recent theory and discourse on EIA, planning and sustainable development, with a specific focus on the important role that the consideration of alternatives (should) play during planning and EIA.

Against the background and context provided by the theoretical findings of the literature review in Chapter 2, Chapters 3 and 4 will consist of a policy analysis of the legislative and policy framework for EIA and IDP in South Africa, again with a specific focus on the consideration of alternatives.

The findings of the literature review, theoretical analysis and policy analysis will then be used to generate research questions for the undertaking of a content analysis, in Chapters 5 and 6, of a sample of EIAs and IDPs undertaken and produced in the Western Cape Province of South Africa, with a specific focus on the consideration of alternatives.

Chapter 7 will consider possible solutions to overcoming the constraints and shortcomings in the consideration of alternatives during the practice of EIA and IDP in South Africa.

CHAPTER 2. SUSTAINABLE DEVELOPMENT AND THE CONSIDERATION OF ALTERNATIVES

2.1. Introduction

To analyse the social and ecological problems associated with the challenge of sustainable development and the need for intervention, this Chapter considers, through a literature review, the historical development and social construction of the concept of "sustainable development", with a specific focus on the consideration of alternatives during planning and EIA. The review explores the origins of the concept of sustainable development, and draws attention to the different, and often conflicting, development agendas, all labelled "sustainable development", that have since dominated the discourse and contestations. The key role that the consideration of alternatives (is suppose to) play in the pursuit of sustainable development in general, and during planning and EIA in particular, are also highlighted.

2.2. "This planet is it."

"When Apollo II Mission reached the Moon's Sea of Tranquillity on 20 July 1969, the images that the spacecraft sent back to Earth captured the imagination of people everywhere. (…) *For what these images enabled us to see for the first time, was an exquisite blue and white sphere shimmering with radiance against the vast dense blackness of outer space.* (…) *What those images also unequivocally brought home to us was the vulnerability of our world as it spun in silent solitude through deep space. With this understanding came a perception about our own vulnerability, because we realized that* (…) *there is nowhere else to go. This planet is it."* (Knight, 2004: 111-112)

While the global ecosystems and resources of Earth are already unable to sustain even the current levels of the Industrial West's resource use, we are confronted with the realisation that the possible emulation of this unsustainable model of development by China and India (with their 2 billion people) would mean that two planet Earths would be required to sustain us (The Worldwatch Institute, 2006: 18). If the rest of the world over time also had to adopt North America's resource hungry lifestyle (with an ecological footprint of 4.5ha/person, i.e. 4.5ha of ecological

productive land and water are required to provide the energy/material resources consumed and to absorb the waste produced per person per annum) (Wackernagel & Rees, 2004: 53) then by 2050 (with an estimated population that will probably stabilize at 10 to 11 billion people) we would need six planet Earths (Rees, 1996: 17).

Considering the state of the world, and that "*we do not inherit the Earth from our ancestors, we borrow it from our children*" (David Brower quoted in Keyes, 2006: 98), one cannot help but ask: How did we get here? What did our ancestors do? What are we doing? What will our children say? Is it through ignorance or denial? Is it greed, selfishness or short-sightedness? How come after repeated calls for change, it still seems to be business-as-usual? How is it possible that we still continue to make bad decisions when it comes to sustainable development considerations?

2.3. Collapse

> *"How could a society that was once so mighty end up collapsing?* (…) *unintended ecological suicide – ecocide* (…) *processes through which past societies have undermined themselves by damaging their environments* (…) *The risk of such collapses today is now a matter of increasing concern; indeed, collapses have already materialized* (…)*"* (Diamond, 2006: 3-7)

Some people argue that the reason why we make decisions that are resulting in environmental degradation and that are taking us further away from sustainable development, is our "*ecological illiteracy*" (Dr. George B. Schaller quoted in Knight, 2004: 142). With our "*ecological illiteracy*", in turn, being the result of us having lost touch with nature (Cock, 2007: 9). They argue that we should return to the more simple and sustainable ways of life that was practiced by many earlier societies who (supposedly) lived in harmony with nature.

Evidence have, however, since been found of a number of occasions in human history where societies have degraded their environmental support systems to the level where their resource demands exceeded the reduced carrying capacity of their environment, leading to the eventual collapse of that society (Clayton & Radcliffe,

1996: 3-4; Diamond, 2006: 6). In his book *Collapse: How Societies Choose to Fail or Survive* Jared Diamond (2006: 3) mentions that while some past societies suffered minor declines, all over the world other societies were victims of total collapse, for example the Easter Island society (Pacific Ocean), Harappan Indus Valley and Angkor Wat (Asia), Moche and Tiwanaku (South America), Mayan society (Central America), Anasazi and Cahokia (North America), Minoan Crete and Mycenean Greece (Europe), and Great Zimbabwe (Africa).

Bad environmental decision-making is therefore not a new phenomenon. For a long-time we could however "escape" our bad decisions by adopting a frontier mentality (Veitch & Arkkelin, 1995: 392-393). We could for a long time simply pick up and move from the area we degraded, and that was busy collapsing, to a new, yet to be degraded, area. The harsh reality we are confronted with in the 21st Century is that we can no longer escape from the environmental deterioration that we have caused, and are still causing.

The reality is that concern about the impacts of human activities on the environment have been highlighted as early as nearly 3000 years ago, with the Greek poet Homer writing about ancient cities being destroyed by flooding and soil erosion caused by excessive deforestation (Arms, 1994: 9). Whereas past environmental degradation might have resulted in collapse in small pockets spread out across the Earth, the frequency, scale and intensity of human degradation of the environment have resulted in the assimilative and restorative capabilities and thresholds of the global ecological commons having been exceeded – resulting in a threat of global collapse and ecological crisis.

2.4. Limits to Growth

> *"Necessity, that imperious all pervading law of nature, restrains them within the prescribed bounds. The race of plants, and race of animals shrink under this great restrictive law. And the race of man cannot, by any efforts of reason, escape from it."* (Malthus 1803, quoted in VanDeVeer & Pierce 2003: 398)

In the year 1803, as the negative environmental consequences of the industrial revolution started to become apparent, Thomas Robert Malthus, who is acknowledged to be the first economist to predict the limits to growth caused by finite resources and resource scarcity, published what is today know as the Malthusian perspective on unsustainable human action and the consequences of this unsustainable path for humans and the environment (Mebratu, 1998: 498).

Malthus argued that due to unchecked population growth occurring geometrically and food (and resource) production (subsistence) only increasing arithmetically, human demands for resources will eventually exceed supply – leading to environmental degradation, starvation, misery and ultimately collapse of the human population (Malthus 1803, quoted in VanDeVeer & Pierce 2003: 397-401). Malthus, however, failed to highlight that while the growth in the number of people are to be addressed, the growth in levels of consumption by individuals must also be addressed. The Worldwatch Institute (2006: 16) for example estimates that the United States, which only has 4.5% of the world's population, is consuming an estimated 25% of the Earth's resources. According to Mebratu (1998: 499) Malthus' theory of "environmental limits" and his argument to limit human impact to maintain the environmental balance are, however, considered the origin of the concept of "sustainable development".

A century and a half later, in the year 1972, the Club of Rome published *Limits to Growth* (Meadows, Meadows, Randers & Behrens, 1974: 92) which echoed Malthus when it concluded that if the same unsustainable growth patterns and trends were to continue, the limits to growth will eventually be reached and exceeded, leading to sudden and uncontrollable collapse. While the Club of Rome did not use the term "sustainable development" their consideration of limits, needs and balance, contributed to the laying of the foundation for and strengthened the development of the concept.

2.5. The Tragedy of the Commons

> *"Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in the commons brings ruin to all.* (…) *natural selection favors the forces of psychological denial. The individual benefits as an individual from his ability to deny the truth even though society as a whole, of which he is a part, suffers."* (Hardin 1968, quoted in VanDeVeer & Pierce, 2003: 367)

In order to prevent collapse (or "ruin" as he referred to it), and strongly influenced by the work of Malthus, Garrett Hardin (1968: 361 & 367) called for the restriction of individual actions and freedoms ("eco-authoritarianism") in order to prevent a "first-come, first-served" scenario that will eventually lead to ruin. He argued, in his now famous *The Tragedy of the Commons* that individuals, knowingly or unknowingly to themselves, tend to pursue their own short-term self-interest, often at a cost to the environment, to society at large, and to themselves in the long-term. Hardin therefore called for governance and a long-term approach to decision-making in order to ensure that limits are not exceeded.

I, however, differ from the view that Hardin was proposing privatization of the commons (VanDeVeer & Pierce, 2003: 361). I share Monbiot's (1994: 374) view in his *The Tragedy of Enclosure* when he argues that the privatization of common property leads to the displacement of people and further environmental problems caused by failures of the market. While the commons therefore results in overuse, on the other hand, privatization (or the "Tragedy of the Anticommons") can result in the underuse of resources (Heller 1998, quoted in Mukhija, 2005: 978).

Although not explicit in his argument, Hardin's call for governance was, therefore, in my opinion, not a call for privatization but rather a call for democracy, when he identified the need for the proposed actions of individuals to be governed and measured against the long-term public interest. Although he did not refer to it as "sustainable development", Hardin's argument for the advantages and disadvantages of a proposal to be considered in order to explore the alternative that will result in the biggest benefit for the most people over the longest period of time, can be seen as a

call for sustainable development. With the growing realisation that many human impacts are now global in extent, that we are all sharing the global commons and living on a finite planet, Hardin's argument is now more relevant than ever before.

2.6. Appropriate Technology

> *"If that which has been shaped by technology, and continues to be so shaped, looks sick, it might be wise to have a look at technology itself.* (…) *making use of the best of modern knowledge and experience, is conducive to decentralisation, compatible with the laws of ecology, gentle in its use of scarce resources, and designed to serve the human person instead of making him the servant of machines."* (Schumacher, 1974: 128)

In an attempt to prevent collapse and the ruin of the commons, and cognisant of the limits to growth and the need for the impacts of development on the environment to be limited, EIA was introduced in the United States of America in the 1970s as a tool to aid with decision-making, from where it soon spread to be adopted by many countries all over the world (Morrison-Saunders & Fisher, 2006: 20).

Originating from the need to limit the impacts of industrial development, the initial focus was, however, on finding the most appropriate technology ("*intermediate technology*") (Schumacher, 1974: 150), with efficiency considerations and impact mitigation being the main focus. Schumacher argued that, with "*great masses of people live in abject misery*" (Schumacher, 1974: 197), there is a need for substantial economic growth, but that there are choices between alternative techologies. While alternatives was therefore explored, the main focus was on finding alternative technologies, better methods and alternative materials – "doing things right" (doing the same things, but doing them better).

From my reading of *Small is Beautiful* I agree with Mebratu's (1998: 500) argument that Schumacher's (1974: 150) focus on the need to find the most appropriate technology for a given system, based on ecological, economic and social considerations, shifted the debate from the original consideration of limits, further towards the origins of the concept of sustainable development.

2.7. "Growth as Everything" and Impact Mitigation.

> "*The balance of nature is* (…) *a complex, precise, and highly integrated system of relationships between living things which cannot safely be ignored any more than the law of gravity can be defied with impunity by a man perched on the edge of a cliff. The balance of nature is not a status quo; it is fluid, ever shifting, in a constant state of adjustment. Man, too, is part of this balance. Sometimes the balance is in his favour; sometimes – and all too often through his own activities – it is shifted to his disadvantage."* (Carson, 1970: 215)

It, however, took another century and a half of environmental degradation for concerns over environmental degradation to assume international prominence, and for an appropriate response to Malthus' call for human impact on the environment to be limited. In reaction to widespread and increasing pollution and degradation of the environment caused by unsustainable development, and spurred on by the increasingly loud calls for action by ground-breaking publications in the 1960s and 1970s like *Silent Spring* (Rachel Carson, 1962), *The Tragedy of the Commons* (Garrett Hardin, 1968), *The Population Bomb (*Paul Ehrlich, 1970), *Limits to Growth* (Meadows, Meadows, Randers & Behrens for the Club of Rome, 1972), *Blueprint for Survival* (Goldsmith, Allen, Allaby, Davoll & Lawrence, 1972) and *Small is Beautiful* (Fritz Schumacher, 1973), "sustainable development" was adopted as a global aspiration in the 1980s. In 1987 *Our Common Future*, a report produced by the World Commission on Environment and Development (also known as the "Brundtland Commission"), formulated the globally recognised definition of "sustainable development" namely "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*" (quoted in Pezzoli, 1996: 1).

With "sustainable development" being a compromise position between the economists, social scientists and ecologists, the need for improved integration of development and environmental consideration became the main focus. It is for this reason that the Integration Model (shown in **Figure 1** below) became the dominant model of sustainable development used at that time. According to Mebratu (1998:

513) this model is, however, based on the (false) assumption that the ecological, social and economic systems occur as separate systems, which are independent from each other and can be treated as such. According to the model, therefore, the zone where the three systems interact, the interactive zone, is where sustainable development occurs (Mebratu, 1998: 513). Better integration of the (supposedly) independent systems is therefore required in order to ensure more sustainable development.

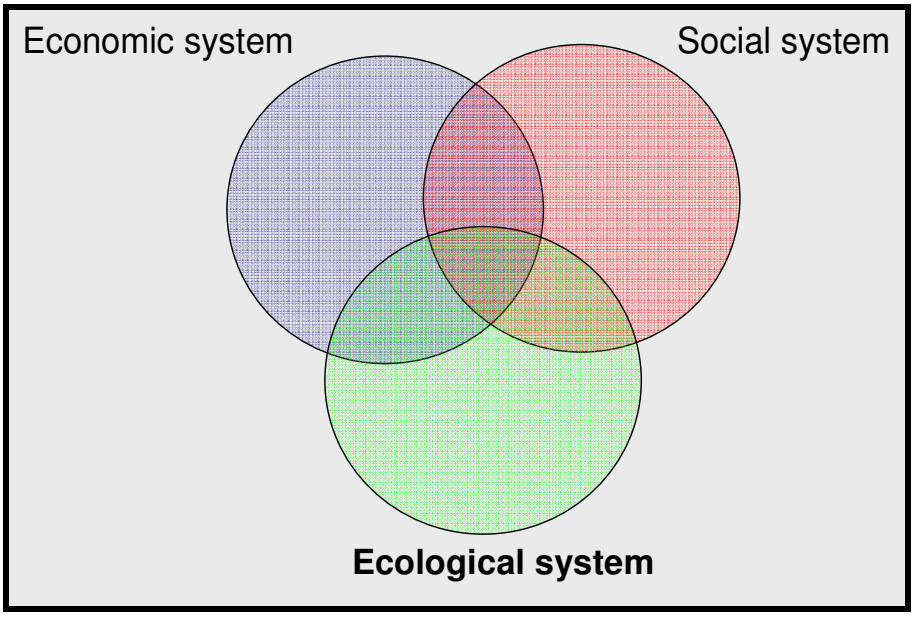

Figure 1. The Integration Model of Sustainable Development (Mebratu, 1998: 513)

The use of this model, therefore, primarily resulted in a focus on the mitigation of impacts on the ecological system ("doing things right" or rather "doing things better"), while developing the social and economic systems. "Business-as-usual" – doing the same things but just doing them a little better – was therefore the approach adopted, with mitigation seen as enough of a move into the interactive zone. According to this approach, "development as growth" (Sachs & Agrawal, 2002: 14; Patel, 2008: 262) and therefore "growth as everything" (Kanbur, 2001: 12-13) was, therefore, advocated. Those who adopted this model, also referred to as "environmentalism" or "ecological modernization", were of the opinion that the capitalist system and environment were not fundamentally opposed, and that all that was required is for the

capitalist institutions to transform themselves through the use of more environmentally friendly technologies (King & McCarthy, 2005).

After the failure of the "communist economic model" and the realisation that the "free development of each" does not necessarily result in the "free development of all" (Marx & Engels 1848, quoted in Monbiot, 2004: 29), the "capitalist economic model", with its strong push for trade, economic and market liberalisation – with (free) market forces (supposedly) driving efficiencies, was seen by many as the only economic model that worked (Keegan, 1993: 175 & 190; Sachs, 2007: 34). Mainstream economic and growth theory were dominated by the idea that the solution for a better world lies in improvements in the general economy which will (eventually) benefit all participants in the economy through the "trickle-down effect" (Mkandawire, 2001: 10-11; Legum, 2002: 8, 17 & 76; Adelzadeh, 2007: 5-6; Meth, 2007: 72-73) – also described as "the rising tide lifting all boats" (Lemass, n.d.).

Using this model, Gross Domestic Product ("GDP") was seen as the indicator of (economic) "prosperity" with the ultimate aim being to maximise the rate and efficiency of economic growth in order to increase the GDP (Brown, Flavin & Postel, 1991: 121; Porritt, 2005: 58). According to this model, economic growth therefore must be maximised in order to address the Malthusian problem of population growth exceeding material growth (Malthus 1803, quoted in VanDeVeer & Pierce 2003: 397-401). I, however, agree with Brown *et al* (1991: 23 & 29) and Porrit (2005: 57) that this model is based on the flawed assumption that the economic system is a closed system within which different forms of capital (natural, human, social, manufactured and financial) can be substituted in order to maintain economic efficiencies and rates of return.

2.8. Poverty, Inequality and Quality of Life.

> *"*[I]*t was increasingly realized that growth was accompanied by poverty and inequality, and that in the absence of deliberate policies to shape the patterns of growth, there is no guarantee that growth would trickle down in amounts sufficient to begin to address poverty, let alone equity*." (Mkandawire, 2001: 11)

> "*It is clear to almost everyone that something has gone horribly wrong.* (…) *If, in too many instances, the benefits* (…) *have been less* (…)*, the price paid has been greater, as the environment has been destroyed, as political processes have been corrupted, and as the rapid pace of change has not allowed countries time for cultural adaptation*." (Stiglitz, 2002: 4-8)

Despite sustained economic growth, poverty, however, persists in many areas amongst certain communities, while inequalities are growing – the rich getting richer, while the poor is staying poor or getting poorer (Edney, 2005: 3; Fakir, 2007: 23). The rising tide was not lifting all the boats. While social exclusion and associated powerlessness, together with environmental and social externalities, have contributed to this state of affairs, it is proposed that "adverse incorporation" in the form of "economic exclusion" and unequal power relationships played a major role in sustaining poverty (Du Toit, 2004: 5). The invincible hand of the free market seemed to for the most part be lining the pockets of the rich and powerful, while its benefits to the poor and vulnerable remains… invisible.

While the world (supposedly) have been pursuing the achievement of sustainable development for almost four decades, the most recent evidence about the state of the world indicates that not much progress have, however, been made. As mentioned, an estimated one out of every five people in the world is a slum dweller, is malnourished, does not have access to clean water, has to survive on less than US$ 1 a day, while an alarming two-thirds of the life-supporting ecosystems of the world are either degraded or are being unsustainably used (Cullinan, 2002: 20; UN-HABITAT, 2004: 6). In South Africa poverty remains widespread and persists alongside affluence, while inequalities are increasing and South Africa's life-supporting ecosystems continues to be deterioration at an alarming rate (Van Schalkwyk, 1998: 2, Coetzee, 2002: 1; Mbeki, 2004; DEAT, 2006b; Fakir, 2007: 23; The Presidency, 2008: 42).

While the "development as growth" model has at times resulted in economic efficiencies and growing economies, this have mainly resulted in unequal

distributional consequences with the rich and powerful not simply benefiting more than the poor (the rich getting richer, while the poor are not benefiting), but that the benefits to the rich have come at a cost to the poor (the poor getting poorer) and the environment (Ocampo, 2002: 394). The poor, with their lack of economic resources, are often directly dependent on the (free) ecological resources provided by the ecological commons, and are therefore the most vulnerable when the ecological commons are deteriorated due to overconsumption. Poverty and overconsumption must, therefore, both be addressed.

The belief in "growth as everything" is, however, so strong that some (those that stand to benefit) even argue that some inequality in the short-term might have to be tolerated (by others) in order to allow the economy to growth to such an extend that in the long-term trickle-down will eventually lead to some benefits also reaching the poor (Mkandawire, 2001: 10-11). In this regard the "growth as everything" paradigm shares the reasoning associated with the theory of demographic transition and the "environmental Kuznets curve" hypothesis that both argue that while initially an increase in per capita income will lead to worsening environmental and social conditions, a standard of living will eventually be attained that leads to increased concern for the environment and reduced fertility rates, that in the end (should) result in an improvement in environmental quality (Hussen, 2000: 145).

Internationally, and in South Africa, the harsh reality of endemic and widespread poverty and growing inequalities has resulted in the realisation that something has indeed "*gone horribly wrong*" (Stiglitz, 2002: 4). While the tide might have risen, it did not lift all the boats. Many authors have shown that trickle-down is not working (Mkandawire, 2001: 10-11; Legum, 2002: 8, 17 & 76; Bhorat & Kanbur, 2006: 13; Adelzadeh, 2007: 5-6; Meth, 2007: 72-73). The reality is that intense globalisation have at times resulted in the competitive pursuit of largely (export) market-driven economic development strategies with the main focus on the attraction of foreign investment, often leading to the progressive lowering of environmental standards (a "race to the bottom") and to "smokestack chasing", which according to Bond (2002: 1

& 6-7) is ultimately resulting in "*under*development". In spite of this, business-as-usual persists, with "development experts" promoting a development and growth path that supposedly will result in sustainable development, whereas the truth is that the path being proposed usually will result, at best, in maldevelopment and, at worst, in underdevelopment (Chang, 2002: 4; Jomo, 2005: 3-4 & 8).

Dresner (2002: 73-74) and Easterbrook (2004) have found that the average level of happiness in a country rises as the average level of income increases, only up to a certain level of economic growth, whereafter happiness levels drop. In this regard, Gallopin (2003: 25-36) has distinguished five kinds of development:

a) "underdevelopment" occurs when neither quality of life increases nor economic growth takes place;
b) "maldevelopment" occurs when material economic growth takes place but quality of life does not increase;
c) "overdevelopment" takes place when material economic growth takes place but quality of life decrease;
d) "development" takes place when both quality of life increases (non-material growth) and the material economy grows; and
e) "sustainable development" occurs when the quality of life increases through non-material growth (but no net material growth occurs) or through zero-growth economies (no economic growth at all) – it does not imply cessation of economic growth ("anti-growth'), but rather a zero-growth material economy with a positively-growing non-material economy (i.e. the total material required by the economy is reduced). In order to achieve sustainable development, resource use (consumption) must be decoupled from quality of life (dematerialization) (DEAT, 2007b; Swilling, 2008: 100).

Gallopin (2003: 28) argues that the only path realistically appropriate for developing countries, is one that goes from underdevelopment to maldevelopment, and then to sustainable development. Faced with the situation where "something has gone horribly wrong" (Stiglitz, 2002, p.4) and with trickle-down not working (Mkandawire,

2001: 10-11; Legum, 2002: 8, 17 & 76; Adelzadeh, 2007: 5-6; Meth, 2007: 72-73), I disagree with Gallopin and rather support the call by The Worldwatch Institute (2006: 19-21) for the developing countries to "leapfrog" from underdevelopment straight to sustainable development.

The "*triumph of theory over fact*" (Alan S. Blinder quoted in Cohen, 2007: 1) must therefore end and it must be realised that while the mainstream economic theory argues that all development is good, some "development" costs more than it is worth (Brown *et al*, 1991: 118). The actual consequences of development and the actual state of the world are therefore to be considered when deciding on the development pattern and path to pursue. The fact that sustainable development must lead to the achievement of the desired aim/goal for an area and an improvement in the quality of life for all, is therefore the ultimate consideration (Sainath, 2006).

In this regard, the definition of sustainable development proposed in the 1991 report *Caring for the Earth*, produced by the World Conservation Union, together with the United Nations Environment Program, and the World Wide Fund for Nature, which defines sustainable development as "*improving the quality of human life while living within the carrying capacity of supporting ecosystems*" (quoted in George, 1999: 176) is seen as very appropriate.

2.9. Interdependence and Embeddedness, Ecological Footprint and Resource Flow.

In reconsidering how the economic, social and ecological systems interact, Complexity Theory and Systems Thinking led to the realisation that the economic, social and ecological systems are imbedded and interdependent open systems (Kast & Rosenzweig, 1972; Clayton & Radcliffe, 1996: 12-13 & 16-20; Mebratu, 1998: 514; Cilliers, 1998: 119-123; Cilliers, 2000a: 24; Cilliers, 2000b: 9-10; Noble, 2000: 98; Jessop, 2001: 5). The economic, social and ecological systems never have been and never will be separate – and being interdependent, these systems continuously interact and influence each other.

Looking at the Interdependence Model of sustainable development (also sometimes referred to as the Nested Systems Model) (shown in **Figure 2** below) it, therefore, becomes apparent that the ecological system is the finite resource base on which the social and economic systems depend for their continued survival.

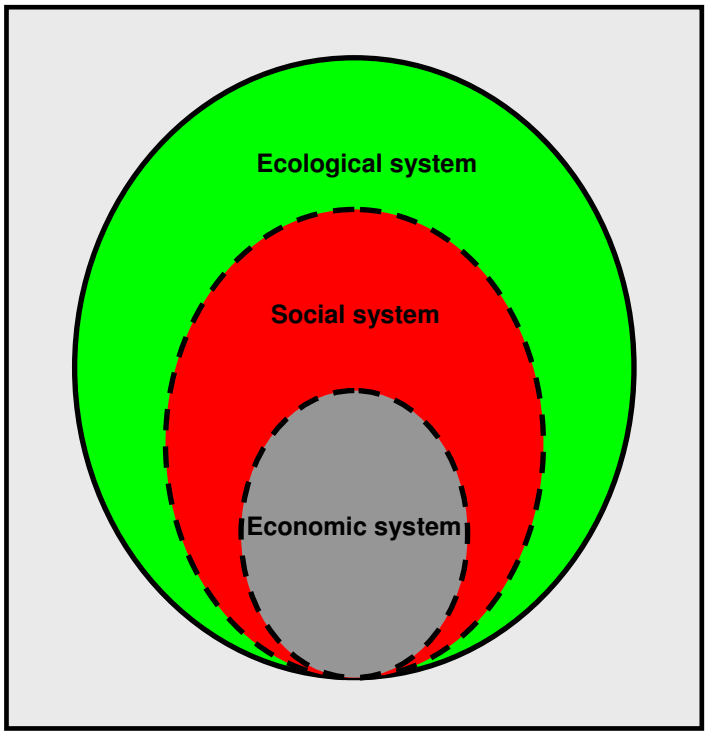

Figure 2. The Interdependence Model of Sustainable Development (adapted from Mebratu, 1998: 513).

The economic system is, therefore, dependent on, and essentially a product of, the social system, which in turn is dependent on, and a product of, the ecological system (Gallopin, 2003: 13-16; Blignaut & de Wit, 2004: 54 & 62; Tisdell, 2004; DEA&DP & WCPDC, 2005). The achievement of sustainability development therefore requires the integrated and simultaneous achievement of economic sustainability, social sustainability, and ecological sustainability (the "Triple Bottom Line") (Visser & Sunter, 2002: 15; Elkington, 2004).

More recently the realisation that the interdependent systems require an integrated governance approach has resulted in the adoption of the Embedded Model (shown in

Figure 3 below) (DEA&DP & WCPDC, 2005). With regards to the need for integrated governance, EIA and development planning are the main governance tools adopted in South Africa to achieve sustainable development.

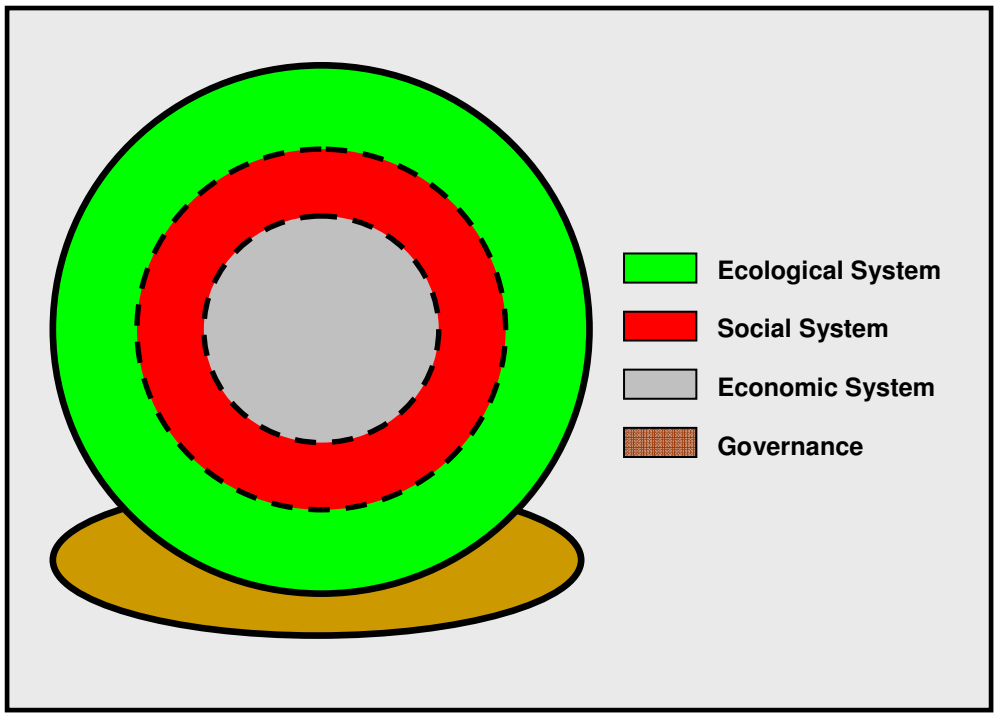

Figure 3. The Embedded Model of Sustainable Development (DEA&DP & WCPDC, 2005).

Systems thinking also resulted in the consideration of resource flow into, within, through and between systems. Rees (1996: 4) estimated that 1996 saw the world's population consuming 40% of the net terrestrial production and between 25 and 35% of coastal shelf production, with some of the world's waste sinks already full or overflowing. In 1994 it was estimated that if the world's population all had to live a North American lifestyle (with an estimated ecological footprint of 4.5 ha/person) then we would need three planet Earths, and by 2050 (with an estimated population that will stabilize at 10 to 11 billion people) six planet Earths (Rees, 1996: 17).

It has been estimated that buildings consume 40% of the Earth's materials and 30% of its energy, with their construction annually using up 3 million tons of raw materials and generating 20% of the global solid waste stream (Graham, 2003: 41, 59, 61 &

69). Considering resource use, Girardet (1999: 415) estimated that at the turn of the last Century cities already used over 75% of the earth's resources. One of the main reasons why cities consume so much of the world's resources is due to the fact that most cities have an "*open linear metabolic system*" (Girardet, 1999: 417) with resources from outside the city flowing into the urban system and wastes flowing out of cities. This is profoundly different from nature's closed circular metabolic system, where every output is also an input, and resources are circulated within the system.

It can however not be denied that public investments in infrastructure development can have an important impact on economic growth and poverty alleviation, if such infrastructure is used to trigger and stimulate economic investments by the private sector, as well as providing the foundation for social development (Swilling, 2006: 1). The question, however, is not whether or not to provide infrastructure and services, but rather the type of infrastructure to be developed and services to be provided. In order to reduce the ecological footprint and change linear resource flow into a circular resource flow, sustainable development calls for alternative and appropriate technologies, designs, methods and processes to be developed and used in order to achieve a reduction in the total consumption of inputs, increases in the efficiency of throughputs, and transformation of all waste outputs into productive inputs (Graham, 2003: 205; Swilling, Davids, Ward, Wetmore, Jackson, Paschke, Moosa & Khan, 2005: 4 & 44-48; Swilling, 2008: 100-101).

It is therefore recommended that alternative and appropriate technologies, designs, methods and processes be developed and used in order to "leapfrog" to a more sustainable society (White, 1994: 3-5; Portney, 2001: 5, 17 & 21; Graham, 2003: 205; Swilling *et al*, 2005: 44-48; The Worldwatch Institute, 2006: 19-21; Swilling, 2008: 100-101), for example:

- *Land and space*: through the demarcation of urban edges and the implementation of land use management systems, prevent urban sprawl and where appropriate promote densification, mixed land-use, and provide for urban agriculture.

- *Biodiversity and recreational space*: increase conservation areas and recreational parks, landscape using indigenous flora, and use expanding urban agricultural areas as recreational spaces.
- *Water*: recognize the need for an ecological reserve while reducing total consumption (e.g. through water restrictions, appropriate water pricing, relevant municipal by-laws); increase efficiencies; improve capture and harvesting of on-site rainwater; provide the poor with a minimum basic supply; and increase the use of recycled water.
- *Food*: increase food supplies from (organic) urban farms that use composted urban wastes, through the buying policies of urban food markets provide incentives to rural farmers to convert to organic farming, and build local retail food markets, and use school yards for food production.
- *Energy*: increase efficiencies (e.g. through appropriate pricing), reduce (and eventually eliminate) the use of fossil fuel-based energy, and adopt a renewable energy system (e.g. by making use of solar roof panel technology).
- *Sanitation*: change to a system where sewerage is treated and re-used as a productive input and as a supplementary water source.
- *Solid waste*: separate at source, link collection systems to recycling businesses (other than toxic waste) and zero transfers to landfill.
- *Transport*: through transportation planning and the use of incentives reduce the use of the private vehicle; increase the use of public transport; reduce the use of fossil fuels; reduce journey lengths between home, work and amenities; and mix transport modes.
- *Building materials and design*: introduce new building regulations that are based on strong sustainability criteria.
- *Air pollution and greenhouse gas emissions*: use regulations and incentives to reduce air pollution and greenhouse gas emissions.

2.10. The Developmental State – Intervention, Promotion and Facilitation.

Jessop (2001: 1), Pillay (2007: 86) and Sachs (2007: 39-40) highlight that the important role of the state is too often neglected. In order to address the imbalances of power and market failure, Bowles and Gintis (2008: 4 & 12) believe there is a need for the state to intervene. While there is a need to change the "business-as-usual" paradigm and to intervene (Porritt, 2005: 281), the call by many authors is nevertheless not for revolution with the democratic capitalist system to be toppled and the invisible hand to be chopped off and replaced by a socialist government controlled system. The call is rather for the state to take the invisible hand of the free market and guide it to ensure a democratic capitalist system which serves economic as well as social and ecological needs equitably (Schumacher, 1974: 150; Ray, 1995: 302; Monbiot, 2004: 41 & 181; Porritt, 2005: 69 & 281). In South Africa the role of the state becomes even more important considering the need for the state to direct a process of economic development with the joint objectives of growth and redistribution (Mkandawire, 2001: 18 & 23-24).

Considering the important role the state has to play in the achievement of the developmental aspirations of all its citizens, there has been increasing calls for states to be come more "developmental", with Leftwich (2000: 155) defining the "developmental state" as:

> "[T]*hose states whose politics have concentrated sufficient power, autonomy, capacity and legitimacy at the centre to shape, pursue and encourage the achievement of explicit development objectives, whether by establishing and promoting the conditions of economic growth (in the capitalist development state), by organizing it directly (in the 'socialist' variants), or a varying combination of both*".

Evans (1995: 59 & 71-73) when considering "developmental states" highlights the fact that a state must be both strong and have strong ties with civil society in order to be effective in driving a process of development and transformation, with the "embeddedness" of the developmental states defined as "*a concrete set of*

connections that link the state intimately and aggressively to particular social groups with whom the state shared a joint project of transformation".

Considering the risk that ties with *particular* social groups will only result in the interests of those particular groups being served, rather than broader societal interests, authors like Monbiot (2004: 28) are quick to add that it must be ensured that "*those who exercise power over society do so in its best interests*". The call is, therefore, for a strong democratic developmental state held accountable by a strong civil society and strong democratic institutions (Edigheji, 2005: 9; Pillay, 2007: 89-91). A *democratic* developmental state is, therefore, characterised by "*inclusive* embeddeness", meaning that "*the social basis and range of accountability goes beyond a narrow band of elites to embrace broader sections of society*" (White 1998, quoted in Edigheji, 2005: 14).

Considering the type of development that the state, in partnership with civil society, must drive, facilitate and promote, too often there is a misconception about the seemingly opposing aims of building a globally competitive economy (capitalist aim), having to reduce poverty and address inequalities (socialist aim), and having to maintain ecological integrity (ecological aim) (Khan, n.d.; Marriot, 2004: 6 & 13; Bodibe, 2007: 77 & 80; Edigheji, 2007: 15). While Marriot (2004: 6 & 13) states that poverty reduction programmes are often believed to be for the poor while global competitiveness projects are for the non-poor, ecological programmes and projects are often seen as a luxury that cannot be afforded until such time as the economic and social problems have been solved (Hussen, 2000: 145).

Considering the reality of our shared global commons and the imbeddedness and interdependence of the economic, social and ecological systems, according to Ocampo (2002: 404-405) the challenge is, however, to ensure an alternative development path that considers all three systems and aims to address the economic, social and ecological goals at the same time. I agree with Ocampo (2002: 404-405) that an integrated development path, that specifically takes the crucial

linkages between economic, social and ecological factors into consideration, is therefore needed.

Concern about the social and ecological consequences of bad decision-making lead to the call for social and ecological factors to specifically be considered when deciding on development options, and eventually lead to the negotiated goal of sustainable development. Planning and Environmental Impact Assessment ("EIA") methodologies were specifically adopted as the means through which the state intervenes to address the imbalances of power and market failure in order to ensure democratic, well-informed and rational decision-making in our simultaneous pursuit of economic, social and ecological goals – in our pursuit of sustainable development.

It must, however, be realised that, even with adequate information, decision-making is also a political process and therefore not always strictly rational (Rittel and Webber, 1973: 169; Caldwell, 1988; Cashmore *et al*, 2004: 298; Connelly & Richardson, 2005: 393, 395, 401 & 406; Craythorne, 2006: 307). The political and strategic context of the development under consideration and within which the decision is to be made (Evans, 2007: 56), together with the predicted associated impacts and the contribution that the development will and should make to the achievement of sustainable development – and the adequate consideration of alternatives – are therefore paramount.

2.11. Doing the right things to change from a worse state to a better state.

In an analysis of the role of environmental assessment in development planning, Claassen (2002: 4) defines "*development*" as "*a change from a worse state to a better state*", "*planning*" as "*the process of determining a course of action to achieve a desired aim*", and therefore defines "*development planning*" as "*the processes to determine courses of action aimed at changing from a worse state to a better state*".

Not only does the wrong course of action and pattern/path of development result in further negative impacts, lost opportunities and wasted resources ("opportunity

costs") (Hussen, 2000: 7 & 11-12), it also takes us further away from the sustainable development goals we are trying to achieve. Rather than simply "doing (the same) things right", it is therefore necessary to explore alternatives and "do the right things". It must also be stressed that "doing things right" and "doing the right things" do not refer to a "compliance exercise" in terms of simply ensuring that the legislated procedural steps have been satisfied (Patel, 2008: 366), but rather to the substantive outcomes that should be achieved (Jaffe, 2004: 4-5).

I agree with Claassen's (2002: 4) definition of development planning mentioned above. Sustainable development and development planning should not be about the production of a static plan or indicating what must not happen, but rather about the production and implementation of a programme of action to achieve a desired aim and to improve the quality of life for all – therefore, a programme of action to achieve sustainable development.

2.12. "Crisis" and the need for (radical) change (for the better).

Cognisant of the state of the world and South Africa, as well as the magnitude of the sustainable development challenge, one is reminded of the Chinese word for "*crisis*" (*wēijī*), which is composed of elements that signify "danger" (*wēi*) and "opportunity" (*jī*). It is, however, important to realise that the "*jī*", in fact, means something like "*incipient moment; crucial point (when something begins or changes)*" (Mair, n.d.). My argument therefore is that EIA and IDP must result in the urgent change for the better – not just that there is an opportunity ("a nice to have"), but that urgent action is needed in order for the crisis (challenge) to be addressed. "Business-as-usual" and the current way of doing things are not working; we have to explore alternatives and change our unsustainable ways in order to prevent the long-term deterioration of our quality of life and eventual ecological collapse.

Already faced with a crisis, planning and EIA must not only ensure that further crisis are prevented, but must also plot the course to turn the boat around and lead to anticipatory positive change (Johnson, n.d.: 13). In South Africa the need for change

is even more important and urgent, with planning and EIA also having to contribute to the social, economic and even environmental redress of the Apartheid wrongs (Davids, Theron & Maphunye, 2005). Considering that we are confronted with a crisis and the magnitude of the sustainable development challenge (Moffatt, 2004), EIA and IDP must lead to change for the better and result in "business-unusual" (Mbeki, 2008) – doing the right (and different) things. In this regard Cashmore (2004: 405) calls for "*radical improvements*" as opposed to inadequate "*small, incremental advances*".

> "*What are the choices that we must make if we are now to succeed, and not to fail? (…) Two types of choices seem to me to have been crucial in tipping their outcomes towards success or failure: long-term planning and a willingness to reconsider core values. (…) the courage to practice long-term thinking, and to make bold, courageous, anticipatory decisions at a time when problems have become perceptible but before they have reached crisis proportions.*" (Diamond, 2006: 522)

"Crisis management" and an *ad hoc* reactive approach to decision-making about our actions will however only lead to wasted resources, wasted time and lost opportunities. The sustainable development challenge calls for pro-active long-term planning, objective-led decision-making approach (Diamond, 2006: 522-523; IAIAsa, 2007).

2.13. "Wicked Problems"

It must be realised that the problems associated with the sustainable development challenge in general, and in South Africa in particular, are "wicked". Rittel and Webber (1973) identified the following properties of "wicked problems" associated with pluralistic open social systems:

- "The formulation of a wicked problem *is* the problem*!*" (1973: 161): A "wicked problem" is complex and dynamic and therefore is not clearly definable in terms of specifying exactly what the nature of the problem is as well as what the root causes are.
- The search for solutions never stops: There are "*no ends to the causal chains that link interacting open systems*" (1973: 162). As causal chains are explored

in the search for solutions, implemented "solutions" cause new problems, and as the problem changes; there is a need to continuously find further and alternative solutions.

- "*There are no true or false answers*" (1973: 163): With differing interests and and values, different groups all view the "solutions" in different ways, with alternative "solutions" being judged as "good" or "bad", "better" or "worse" depending on how the specific group perceives the problem and is affected by the "solution".
- "*The full consequences cannot be appraised*" (1973: 163): With non-linear cause and effect relationships and no end to the causal chains that link interacting open systems, "solutions" might result in unintended consequences and more and new "wicked problems".
- Every solution to a wicked problem is a "*one-shot operation*" (1973: 163): With the implementation of a "solution" potentially resulting in unintended, long-term and even irreversible bigger "wicked problems", every attempt at solving the problem should be seen as the one and only "shot" at solving the problem.
- A host of potential solutions – "*anything goes*" (1973: 164): Not being able to clearly define a "wicked problem", and with the search for solutions never ending, there are a host of potential solutions for every "wicked problem". A judgement is therefore called for in terms of whether or not adequate consideration has been given to all the possible alternative solutions.
- "Every wicked problem is *essentially unique*" (1973: 164) – "one size does not fit all": While current problems might initially seem to show some similarities with previous or other current problems, the complex and dynamic nature of "wicked problems" means that most "wicked problems" have unique properties. Each "wicked problem" should therefore be approached differently. A solution should therefore not be identified too early; allowing time for alternative solutions to be explored as the unique properties of the "wicked problem" emerges.

- "Every wicked problem is a symptom of another wicked problem" (1973: 165): "*Marginal improvement does not guarantee overall improvement*" (1973: 165) and therefore to "solve" a "wicked problem" it is necessary to not only consider solutions to the "symptoms", but also possible solutions to the causes.
- "The modes of reasoning are much richer" (1973: 166): With "wicked problems" not being clearly definable, and each "wicked problem" being "essentially unique", the choice of explanation is arbitrary in the logical sense. Most often the attitudinal criteria (a person's world view) guide the choice between alternative explanations, with the explanations chosen which are considered most plausible, best fit the person's intention and which conforms to the options that are reasonably available. Different stakeholders have different differently interests, values and views. The problem, solutions and explanations will therefore be disputed.
- "No right to be wrong" (1973: 167): With the implementation of "solutions" to "wicken problems" potentially resulting in unintended, irreversible bigger "wicked problems", problem solvers and decision-makers are to be held accountable for their decisions.

Confronted with the complexity and uncertainty associated with the "wicked problem" of sustainable development, a reflective, reflexive and adaptive management approach (De Bono, 1985: 141; Voß & Kemp, 2006: 3-6) to decision-making is required. A wide range of alternative problem formulations as well as a wide range of alternative solutions should be considered, in order to continuously move towards the dynamic goal of sustainable development (Richardson, 2004).

2.14. Alternatives: The quality of the decision depends on the quality of the alternatives from which to choose.

> "*Decision-making is the process of evaluating the alternatives and choosing a course of action in order to solve a problem*." (Cowlard, 2002: 1)
>
> "*The quality of a decision depends on the quality of alternatives from which to choose*." (Steinemann, 2001: 3)

The achievement of sustainable development, therefore, calls for the search for alternatives, with the complexity, uncertainties and gaps in knowledge, often hidden trade-offs, carrying capacity restrictions, opportunity costs and distributional consequences to be adequately considered (Rittel & Webber, 1973: 161-167; Hussen, 2000: 7 & 11-12; Mkandawire, 2001: 23-24; Connelly & Richardson, 2005: 405-406). Sustainable development is about the search for the alternatives that will result in the achievement (or at least contribute most to the achievement) of the desired aim/goal for the specific area, the maximum positive impact, the smallest negative impact, equitable impact distribution, environmental justice and the maintenance of ecological integrity and environmental quality (Lee & George, 2000: 1 & 6; Pieterse, 2004). In this regard it is, however, crucial to understand that while specific sustainable development goals and objectives might be set, sustainable development is not simply another issue to be addressed or goal to be achieved, but rather the process (the means) through which to explore alternative ways to achieve all our goals and objectives now and in the future (Callway, 2005: 13).

Sustainable development is, therefore, a specific mental model that should influence, and be influenced by, every step of the decision-making and planning process. It determines not only what is defined as a "problem" or "goal" in the first place, but also the perspectives adopted, the questions to be answered, information to be gathered, goals and objectives to be achieved, and alternative strategies and programmes to be explored (Rittel & Webber, 1973: 161-167). The pursuit of sustainable development, therefore, is a process of exploring alternatives in order to gain insight and learn (Courtney, Richardson & Paradice, 2004: 274). An integrated search for the alternative that will best address the ecological, social and economic issues and goals, is therefore needed in order to make an integrated decision and achieve a "win-win-win" in terms of achieving ecological sustainability, economic sustainability and social sustainability (the "Triple Bottom Line") (Visser & Sunter, 2002: 15; Elkington, 2004; Haughton & Counsell, 2004: 51 & 53).

Authors like O'Brien (2000: xiii-xiv & 78) feel so strong about the failure of conventional impact assessment and planning practice, which tend to only ask the (wrong) questions regarding how much negative impact can be made "safe" and "acceptable", that they are proposing "Alternatives Assessment" as an alternative approach to planning and decision-making. O'Brien convincingly argues that the questions should rather be how little impact is possible and what are the benefits that could be realised, with the most important question being "What are the alternatives?" In this regard O'Brien's argument shares similarities with the argument by Rittel and Webber (1973: 161-167) that both the alternative means as well as alternative goals are to be considered as broadly as possible.

> "*If you don't know where you are going, you will probably end up somewhere else*." (L.J. Peter quoted in: Cowlard, 2002: 2)

All decision-making, specifically project-level EIA decision-making, requires the consideration of the strategic context of the decision (Rittel and Webber, 1973: 162; Patel, 2008: 365). Whose interests and needs must the decision serve? To whom is the decision-maker accountable? What will the consequences of the decision be? What determines if something is desirable or not? These questions bring one back to the very definition of "sustainable development" – "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*". Broader societal needs and the public interest must, therefore, be served (Patel, 2008: 363). Government decision-makers, together with the environmental practitioners and planners, are therefore accountable to the public and must serve their social, economic and ecological needs equitably. Hardin's (1968) call, 40 years ago, for governance and a long-term approach to decision-making to ensure that limits are not exceeded and that the proposed actions of individuals are measured against the long-term public interest, is therefore now even more relevant than ever before.

Considering the Malthusian challenge, the need to prevent the 'Tragedy of the Commons', and the complexity of the challenge of sustainable development, the

pursuit of sustainable development, and therefore the practice of planning and EIA, calls for an adaptive management approach. Consequently, what is required is a continuous search for better alternatives in order to ensure continuous improvement in the face of uncertainty, increasing challenges and possible future scenarios (Malthus 1803, quoted in VanDeVeer & Pierce 2003: 397-401; Hardin 1968, quoted in VanDeVeer & Pierce, 2003: 361 & 367; Rittel & Webber, 1973: 161-167; Clayton & Radcliffe, 1996: 12-13 & 16-20; Rees, 1996: 4 & 17; Noble, 2000: 97-98 & 109; Steinemann, 2001: 3; Xiangô & Clarke, 2003: 886 & 889-890; Couclelis, 2005: 1354 & 1362-1363; Shearer, 2005: 68-70; Duinker & Greig, 2007: 207-208).

With regard to the need for an adaptive management approach, de Bono (1985: 141) state that:

> "*In a fast-moving world plans are almost always wrong because they have to be based on the present state and the extrapolation of present trends. This fallibility of plans is not a reason to ignore them but a warning that they should not be made inflexible. One should plan to be in a position to change just as much as one should plan to be in a certain position. Planning for flexibility and uncertainty is important*."

Planning and EIA therefore are supposed to both ultimately aim to determine and direct a process of positive change (Lélé, 1991: 141; Claassen, 2002: 4) through the selection of the most sustainable development option or path. Both EIA and IDP should therefore be about informed decision-making. Fundamental to the process of decision-making and the achievement of the most desirable outcome, is the proper consideration and evaluation of alternatives in order to determine the alternative that will result in the most progress towards the achievement of the desired goal/objective or toward the solving of a particular problem (de Bono, 1985: 21, 27-28, 117; Tillman, 2000: 120; Cowlard, 2002: 1-4). The quality and the outcome of the decision, and the pursuit of sustainable development, depend on the quality of the alternatives from which to choose (Steinemann, 2001: 3).

2.15. Conclusion: Alternatives – the "heart" and "soul" of EIA, planning and sustainable development.

> "*(...) the consideration of alternative courses of action and their implications lies at the heart of all planning (...).* (Couclelis, 2005: 1354)

The consideration of alternatives is, therefore, seen as the "heart" and "soul" of EIA and development planning, and therefore the pursuit of sustainable development. The consideration of alternatives shifts the focus from problems to solutions. The consideration of alternatives should not be about ensuring mere compliance with the procedural requirements and assessing the "acceptability" of the negative impacts associated with a predetermined development option (O'Brien, 2000: xiii-xiv & 78; Steinemann, 2001: 3; Tickner & Geiser, 2004: 803-808; Jaffe, 2004: 4-5; Couclelis, 2005: 1354 & 1362-1363; Smith, 2007: 127; Patel, 2008: 366), that might not be taking us any closer to (and in fact might be taking us further away from) the desired aim/goal for the area. On the contrary, the consideration of alternatives should be about the consideration of the nature of the problem as well as what could and should be done to achieve (or at least contribute most to the achievement of) the desired aim/goal for a specific area.

Against the background and context provided by the theoretical findings of this Chapter, a policy analysis will be undertaken in Chapter 3, which follows, of the legislative and policy framework for EIA in South Africa; again with a specific focus on the consideration of alternatives.

CHAPTER 3. SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL IMPACT ASSESSMENT IN SOUTH AFRICA

3.1. Introduction

With the consideration of alternatives seen as the "heart" and "soul" of EIA, this Chapter considers the theory of EIA and consists of a policy analysis of the legislative and policy framework for sustainable development in South Africa, with a specific focus on the consideration of alternatives.

The analysis explores the adoption of the Integrated Environmental Management approach in South Africa, the legislation that governs EIA in South Africa, the need for government intervention through the use of EIA, and specifically highlights the importance given to the consideration of alternatives during EIA. The analysis also touches on the linkages and integration that are suppose to exist between EIAs, Environmental Management Frameworks, IDPs and Spatial Development Frameworks. With regard to the need for improved integration, it is argued that the legislated requirement to consider "need and desirability" during EIA, together with the formulation of Environmental Management Frameworks, will result in improved integration of planning and EIA decision-making processes and methodologies – which will in turn result in the improved consideration of alternatives.

3.2. Integrated Environmental Management

The publication of the Council for the Environment's *Integrated Environmental Management in South Africa* in 1989 marked the formal introduction of the concept of Integrated Environmental Management ("IEM") in South Africa. In reaction to environmental degradation, IEM was perceived as having a mainly environmental advocacy objective of ensuring that "green" environmental considerations are also considered when decisions are to be made that could result in negative environmental impacts.

Since then IEM has evolved into a way of thinking – a philosophy – and set of principles about sustainable development, with IEM being supported by a range of environmental assessment tools aimed at the achievement of sustainable development (DEAT, 2004a). In South Africa IEM is defined as:

> "*A philosophy that prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development and decision-making process. The IEM philosophy (and principles) is interpreted as applying to the planning, assessment, implementation and management of any proposal (project, plan, programme or policy) or activity - at local, national and international level - that has a potentially significant effect on the environment*." (DEAT, 2004a: 18).

IEM gives effect to the Brundtland Commission's (1987), and later Agenda 21's, call for integration of environmental considerations in planning and policy development. IEM is therefore a form of Environmental Policy Integration ("EPI"), with environmental objectives pursued more pro-actively through the integration of environmental objectives into the design and implementation of economic growth and development policies (Gouldson & Roberts, 2000).

The objectives of IEM are to be given effect to during the implementation of a range of environmental assessment tools aimed at the achievement of sustainable development. In South Africa EIA and Strategic Environmental Assessment ("SEA") are the main tools used to give effect to the objectives of IEM, although, up to now, SEAs have been rarely used in South Africa. Environmental Management Plans are also used as part of EIAs to give effect to the objectives of IEM. More recently Environmental Management Frameworks ("EMFs") have been introduced as a new tool that provides a strategic framework within which to make EIA decisions. (More on EMFs in section 3.7 below.) The use of environmental norms and standards is also currently being considered as part of the legislative reform process underway in South Africa. Adherence to a prescribed norms or standards would allow a person to commence with a specific activity without having to undertake an EIA.

3.3. Ecologically sustainable development and justifiable economic and social development.

> *"In our country, we have come to realise that the process of democratisation and establishing good governance can only be guaranteed if it is based on a sound economic and socio-economic framework that is environmentally sustainable.* (…) *Conservation and sustainable use of these environmental resources and their protection depends on changed behaviour by all individuals, households, and private and public institutions. These changes must affect processes of resource extraction, spatial development, appropriate and clean production, waste minimisation and pollution control strategies in order to guarantee a higher quality of life for all."* (DEAT, 1997)

The Brundtland Commission's definition of sustainable development was also adopted by South Africa, with section 24 of the South African Constitution (Republic of South Africa, 1996b) providing for the following Environmental Right:

> *"Everyone has the right – (a) to an environment that is not harmful to their health or well-being; and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that- (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."*

In 1997 South Africa gave its first step towards giving effect to the above mentioned right to sustainable development when it published the *White Paper on Environmental Management Policy* (DEAT, 1997). The White Paper clearly placed people at the forefront of environmental sustainability concerns when it defined "environment" as:

> *"*[T]*he conditions and influences under which any individual or thing exists, lives or develops. These conditions and influences include:*
>
> - *the natural environment including renewable and non-renewable natural resources such as air, water, land and all forms of life*
> - *the social, political, cultural, economic, working and other factors that determine people's place in and influence on the environment*
> - *natural and constructed spatial surroundings, including urban and rural landscapes and places of cultural*

> *significance, ecosystems and the qualities that contribute to their value.*
>
> *Culture, economic considerations, social systems, politics and value systems determine the interaction between people and the environment, the use of natural resources, and the values and meanings that people attach to life forms, ecological systems, physical and cultural landscapes and places. People are part of the environment and are at the centre of concerns for its sustainability."*

The White Paper also defined what it referred to as the "*essential nature of sustainable development*" as "*the combination of social, economic and environmental factors*" and stated that "*sustainable development*" requires the "*integration of economic development, social justice and environmental sustainability*". While the Constitution's notion of "well-being" was seen by some as being somewhat vague and open to subjective interpretation (Devenish, 1999: 334), the White Paper's new vision for environmental policy in South Africa shed some light on this notion, when it stated that it aimed to address people's quality of life and their daily working and living environments and seeked to:

> *"*[U]*nite the people of South Africa in working towards a society where all people have sufficient food, clean air and water, decent homes and green spaces in their neighbourhoods that will enable them to live in spiritual, cultural and physical harmony with their natural surroundings."*

Very importantly the White Paper also provided the following definition of "development":

> *"*[A] *process for improving human well-being through a reallocation of resources that involves some modification of the environment. It addresses basic needs, equity and the redistribution of wealth. Its focus is on the quality of life rather than the quantity of economic activity."*

While the democratic South African government therefore have green, brown and red agendas, the White Paper also acknowledged the interdependence of the economic and social development and environmental protection, and clearly highlighted the need for carrying capacity restrictions and ecological limits to not be exceeded in order to maintain ecological integrity and the natural life sustaining processes necessary to ensure our future well-being. The need for integrated decision-making

with a focus on constraints and opportunities and the search for innovation were therefore highlighted.

Very importantly the White Paper established National Environmental Management Principles as the framework for environmental management in South Africa, *inter alia*, calling for prevention and demand management, adoption of a risk averse and cautious approach, cradle to grave thinking and full cost accounting, underpinned by good governance and its associated call for responsible, transparent and accountable governance and the fulfilment of government's Constitutional, legislative and executive obligations to the people of South Africa.

3.4. ECA EIA Regulations

Later that same year EIA was for the first time formally legislated in South Africa with the promulgation of the EIA Regulations in terms of sections 21, 22 and 26 of the Environment Conservation Act ("ECA"), 1989 (Act No. 73 of 1989) (Government Notice ("GN") No. R. 1182 and R. 1183 refer) on 5 September 1997. Section 21 identified activities ("listed activities") which may have a substantial detrimental effect on the environment. In terms of section 22 of the ECA written approval from the competent authority had to be obtained prior to the undertaking of listed activities. Application for approval had to be made in accordance with the process stipulated in section 26 of the ECA. **Figure 4** below shows the ECA EIA process.

Internationally and in South Africa EIA was adopted as the main tool, in the IEM tool shed, to achieve sustainable development. With EIA initially adopted in reaction to widespread environmental degradation, the aim of EIA was therefore to ensure that the negative impacts on the biophysical environment are assessed and integrated into the planning and decision-making processes, with EIA defines as:

> "*A public process that is used to identify, predict and assess the potential environmental impacts of a proposed project on the environment. The EIA is used to inform decision-making.*" (DEAT, 2002a: 10)

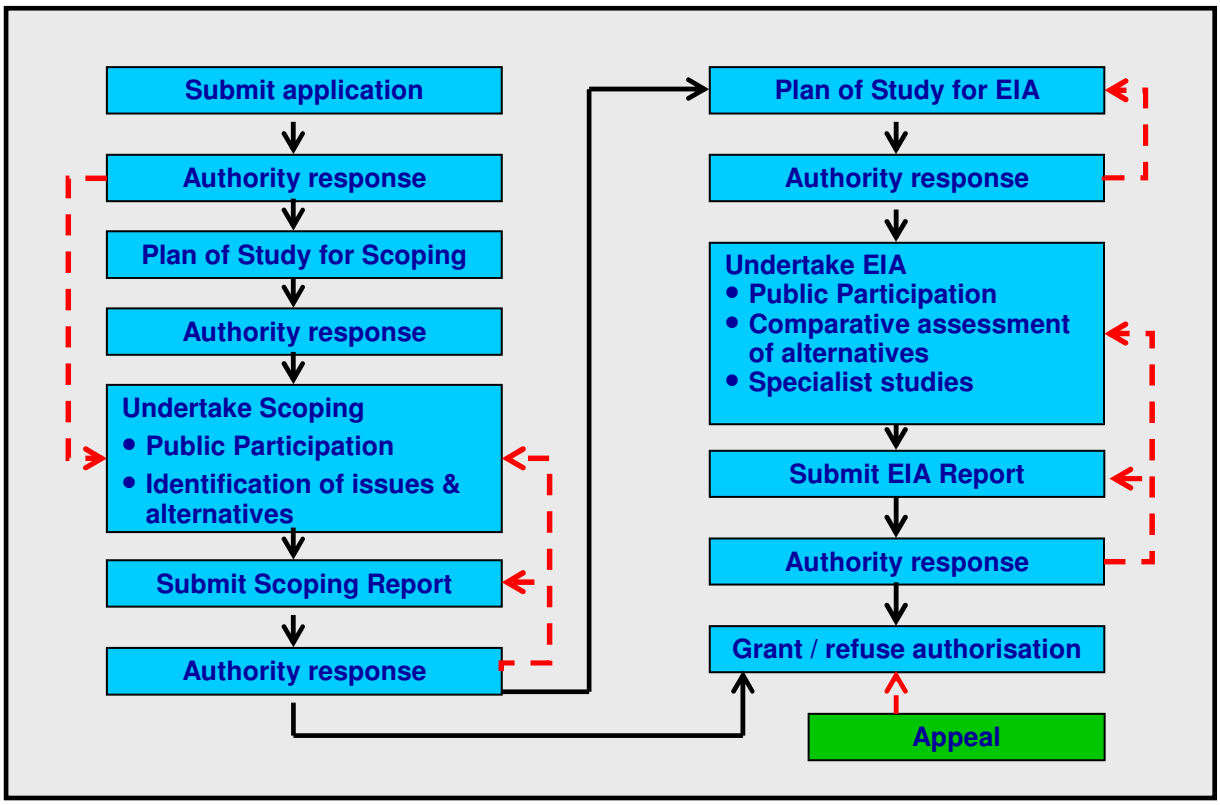

Figure 4. The EIA Process in terms of ECA.

The historical approach to decision-making and planning processes was primarily based on the notion of "rationality" with its assumption of perfect comprehensive information and predictable and knowable outcomes, leading to rational decision-making and comprehensive planning (Sandercock, 1998: 87-89; Maxwell & Conway, 2000; Cashmore, 2004: 418). With EIA adopted as a tool to reactively inform the rational process of decision-making and planning, EIA practice and theory have mainly developed in parallel to the rational decision-making and planning processes, and therefore EIA share many of the characteristics of the belief in rationality (Lawrence, 2000: 610).

Cashmore (2004: 408-414) describes EIA as both an applied and civic science, with scientific method seen as the foundation for EIA theory and practice, with the EIA process therefore seen as a rational process of objective scientific enquiry that must be based on accepted scientific principles and scientific procedures.

In the applied science paradigm EIA was seen as a process in which scientific knowledge and expertise is put to practical application, with EIA perceived as an analytical science and as environmental design. EIA should adhere to the same norms and rules that are applicable to scientific research, with a clear differentiation to be made between the areas of scientific pursuit and decision-making (with facts to be clearly differentiated from value judgements), EIA to be based on published research, reports to be peer reviewed and with results to be published. EIA was therefore seen as a way for science and scientific method (with its objectivity and rationality) to "correct" and inform policy- and decision-making. As a process of environmental design, EIA was seen as a component that must be fully integrated into policy formulation and project design, as opposed to EIA only being limited to reactively informing end-of-pipe mitigation.

As a civic science, EIA was perceived as involving both science and art, with the social and political nature of policy- and decision-making specifically acknowledged. Cashmore (2004: 411-414) distinguished three models within the civic science paradigm of EIA: information provision, participation, and environmental governance.

The information provision model acknowledges the practical realities that EIA, as a short-term decision tool, is confronted with. Considering the resource and time constraints and the reality of public and political controversy that often surround EIA decision-making, 'real-world' decision-making calls for EIA to use 'best practicable' scientific procedures and techniques to holistically assess a reasonable range of alternatives and impacts. On the other hand, considering the political and social nature of policy- and decision-making, "[r]*ather than seeking to minimise value judgements, a fundamental principle in many philosophies of science, EIA must confront (but not embrace) the subjective nature of development planning*" (Cashmore, 2004: 412). As with the applied science paradigm, a clear differentiation must, however, be made between facts and value judgements, with a strict

demarcation to be maintained between the processes of impact assessment and significance rating.

Cognisant of the social and political nature of policy- and decision-making (Evans, 2007: 56), the participation model call for an even more pragmatic approach to EIA. According to this model, the main goal of EIA is sound environmental management. The focus of the EIA process should, therefore, be on substantive outcomes, rather than perfect predictions, perfect scientific method and simply meeting the minimum legislated procedural requirements (Patel, 2008: 366). Considering the role that value judgements play and the social and political nature of policy- and decision-making, deliberate, inclusive and substantial stakeholder participation is seen as an integral part of the EIA process to ensure that participants engage with and inform the outcome of the EIA process. EIA must therefore be transparent and responsive and embrace the plurality of societal values and priorities. Within this model the demarcation between fact and value judgement can become somewhat blurred, with discourse encouraged about both the objective facts as well as the subjective value judgements.

The environmental governance model acknowledges that, while EIA have to be deliberate, inclusive and participatory, EIA as a decision-making process is also a political and moral process and must promote equality and social justice and ensure transparency and accountability. According to this model EIA, like all political processes, provide a framework for stakeholder negotiation and compromise (Cashmore, 2004: 413). While scientific method must therefore be used to predict the possible impacts of societally defined alternatives, the EIA process must embrace the plurality of perspectives and acknowledge that value and meaning are socially constructed and historically and locally embedded. On the need for *societally* defined alternatives to be pursued, Cashmore (2004: 414) states that it is important that *"*[s]*cience is employed in EIA not by the (technical) elite, for the (political) elite, but to empower all stakeholders; that is, to ensure all stakeholders are treated respectfully and sincerely in a process of purposeful deliberation*".

The ECA EIA Regulations defined "alternative" as "*in relation to an activity, means any other possible course of action, including the option not to act*" and called for all possible alternatives to the proposed development to be identified and for a "*comparative assessment of all the alternatives*" to be done. One of the aspects the Plan of Study for Scoping had to specifically provide was a description of the method that was being proposed to identify the environmental issues associated with the proposed development as well as to identify alternatives (in other words to indentify any other possible course of action, including the option not to act).

During the Scoping phase of the EIA process the public was also specifically provided with the opportunity to contribute to the identification and consideration of reasonable and feasible alternatives, with one of the content requirements of the Scoping Report being to provide a description of "*all the alternatives identified*". In 2002 the Department of Environmental Affairs and Tourism ("DEAT") published a guideline document on Scoping (DEAT, 2002a). According to this guideline one of the desired outcomes of scoping was described as "*Alternatives for achieving the objectives of the proposed activity have been given due consideration*".

While the Regulations provided for the authority to decide on an application following the Scoping process, if the information contained in the Scoping Report was considered sufficient for an informed decision on the application, the Regulations also provided for the authority to request, if the information contained in the Scoping Report was not considered sufficient, that the Scoping Report be supplemented by an EIA. Importantly the Regulations specifically stated that the EIA had to focus on the feasible alternatives and environmental issues identified during the Scoping process. The Regulations specified that the EIA Report had to provide "*a description of each alternative*", providing information on the extent, significance and possibility of mitigation of the environmental impacts associated with each alternative, and "*a comparative assessment of all the alternatives*".

Shortly after the promulgation of the ECA EIA Regulations, DEAT in 1998 published the *Guideline Document: EIA Regulations – Implementation of Section 21, 22 and 26 of the Environment Conservation Act* (DEAT, 1998). This *Guideline Document* defined "alternatives" as:

> *"A possible course of action, in place of another, that would meet the same purpose and need (of proposal). Alternatives can refer to any of the following but are not limited hereto: alternative sites for development, alternative site layouts, alternative designs, alternative processes and materials. In Integrated Environmental Management the so-called 'no action' alternative may also require investigation in certain circumstances."*

This shift in focus from the identification, assessment and consideration of "all possible alternatives" to the identification, assessment and consideration of only those alternatives that "would meet the same purpose and need" of the proposed development, presented a significant challenge to EIA's pursuit of sustainable development in South Africa. This same shift in the EIA legislation in United States of America have resulted in the inadequate consideration of alternatives as a result of the "purpose and need" being too narrowly defined (Smith, 2007: 128).

The above definition and approach to the consideration of alternatives was also echoed by the 2004 guideline on *Criteria for determining Alternatives in EIA* published by DEAT (2004c). This 2004 guideline specifically stated that the elements of "purpose and need" must specifically be considered and that it is critical that the alternatives to be considered relates to both purpose and need. It was therefore highlighted that the purpose and need of the development should be clearly described and used as the starting point for the identification and consideration of alternatives. This guideline further stressed that the purpose of and need for a proposed development should be evaluated against the principles of sustainable development and the priorities identified at the local, regional and national level.

The 1998 guideline indicated that in order to properly identify and select alternatives, a number of different methods should be considered, highlighting the need for alternatives to be discussed between the developer, his consultants, the interested

and affected parties, and the authorities during the planning and scoping phases early in the process. The use of socio-economic and environmental overlay maps, creative design processes, Delphi techniques, nominal groups, and brainstorming was also mentioned as possible methods for the identification and selection of alternatives.

In defining the range of alternatives that should be identified and considered, the 1998 guideline specifically referred to the fact that the alternatives must be "*reasonable*", "*practicable*", "*feasible*" and "*viable*", with the following categories of alternatives to be considered:

- *Demand alternatives e.g. using energy more efficiently rather that building more generating capacity;*
- *Activity alternatives e.g. providing public transport rather than increasing the road capacity;*
- *Location alternatives e.g. either for the entire proposal of for components of the proposal e.g. the location of a processing plant for a mine;*
- *Process alternatives e.g. the re-use of process water in an industrial plant, waste-minimising or energy efficient technology, different mining methods;*
- *Scheduling alternatives - where a number of measures might play a part in an overall programme, but the order in which they are scheduled will contribute to the overall effectiveness of the end result; and*
- *Input alternatives e.g. use of alternative raw materials or energy sources.*

The 2004 guideline expanded on the above categories and identified the following categories or types of alternatives:

1. *Activity alternatives*
2. *Location alternatives*
3. *Process alternatives*
4. *Demand alternatives*
5. *Scheduling alternatives*
6. *Input alternatives*
7. *Routing alternatives*
8. *Site layout alternatives*
9. *Scale alternatives*
10. *Design alternatives*

The 2004 guideline also distinguished between "*discrete"* and "*incremental"* alternatives, defining "*discrete alternatives*" as "*options which are generally identified during the pre-feasibility, feasibility and or scoping phases of the EIA*" and "*incremental alternatives*" as options which "*arise during the assessment process in order to address the negative impacts that have been identified*" that "*are usually developed to reduce adverse impacts and or enhance benefits*" and "*are often included with a discussion of mitigation measures or are incorporated into the final project proposal*".

Over and above the categories of alternatives highlighted above, both the 1998 and the 2004 guideline specified that the option not to act (the "no-go/no-action" alternative) should be used, and taken forward into the EIA phase as an alternative in its own right, as the baseline against which the relative impacts and performance of the other identified alternatives should be comparatively assessed. The importance of describing, assessing and evaluating the "no-go option" (the baseline) to the same level of detail and at the same scale as all the other feasible alternatives was also stressed (McCold & Saulsbury, 1998: 32). The 2004 guideline also highlighted that it should not be simply assumed that the "no-go option" necessarily is the best option; because the benefits associated with the proposed development proceeding might result in a significant improvement in the *status quo* and therefore be more desirable than the option of not proceeding with the proposed development.

The 1998 guideline highlighted that not all the alternatives identified during the scoping phase should, however, be investigated to the same level of detail. Measured against specified criteria, the suitability or acceptability of the different alternatives must be considered. While some indentified alternatives will be found to be unsuitable or unacceptable, and therefore "scoped out" of the process, those alternatives found to be "*reasonable*", "*practicable*", "*feasible*" and "*viable*" should be taken forward to be comparatively assessed during the EIA phase. The 2004 guideline, however, stressed the importance of ensuring that the evaluation and elimination process be substantiated and well documented; providing an explanation

of why certain alternatives are considered feasible and others not. This guideline also called for the criteria that were used to identify and evaluate alternatives, as well as the method of determining the most appropriate level of investigation to be applied to every alternative, to be specifically discussed.

With the Plan of Study for Scoping to specifically provide a description of the method that was being proposed to identify the environmental issues associated with the proposed development as well as to identify alternatives, the *Guideline Document* further specified that the authority's review of the Scoping Report had to include a specific review of the alternatives considered. In particular, the *Guideline Document* specified that the authority had to determine whether "*adequate attention has been given to the reasonable range of alternatives and credible methods have been used in the identification of these*".

The *1998* guideline stressed the need to define adequate criteria against which to consider the suitability or acceptability of the different alternatives. As already stated, the 2004 guideline provided additional guidance in this regard. The 2004 guideline stated that the role of alternatives in EIA is "*to find the most effective way of meeting the need and purpose of the proposal, either through enhancing the environmental benefits of the proposed activity, and or through reducing or avoiding potentially significant negative impacts*"; with the consideration of alternatives seen as the "heart" of EIA.

The 2004 guideline, therefore, stated that the "purpose and need" of the development must specifically be considered, with the alternatives to relate to both the purpose of and need for the development. The 2004 guideline, however, stressed that the purpose of and need for a proposed development should be evaluated against the principles of sustainable development and the priorities identified at the local, regional and national level; with the purpose of and need for the development to only be used as the starting point for the identification and consideration of alternatives.

According to the 1998 guideline the authority's review of the Plan of Study for EIA further also had to include a determination of whether or not adequate consideration was given to the consideration and comparison of *"all feasible alternatives, positive and negative impacts and scenarios with or without the proposed activity*". The 1998 guideline highlighted that the EIA Report had to provide a description of each of the feasible alternatives identified during the Scoping phase, including a description of the mitigation options of the environmental impact associated with each alternative. With regards to the mitigation options to be considered for each alternative, the 1998 guideline stated that mitigation options to be considered should include "*alternative ways of meeting the need*" and "*changes in planning and design*", with the review criteria to be used by the authority to include specific criteria to review the "*assessments of alternatives*".

The need to use the same evaluation criteria for all the alternatives, and for a systematic, participatory and comparative assessment of all the feasible alternatives, together with well documented reasons for the determination of the preferred alternative(s) and a full motivation for the rejection of other alternatives, was also specifically highlighted in the 2004 guideline.

The ECA EIA Regulations assigned such importance to the consideration of alternatives, that the Regulations required the main body of the EIA Report to be entirely framed within the context of "*a description of each alternative*" (including information on the extent, significance and possibility of mitigation of the environmental impacts associated with the alternative) and "*a comparative assessment of all the alternatives*", with the rest of the information to be attached as appendices to the EIA Report.

3.5. NEMA

The year 1998 also saw the promulgation of the National Environmental Management Act (Act No. 107 of 1998) ("NEMA") (Republic of South Africa, 1998). NEMA defined "sustainable development" as "*the integration of social, economic and*

environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations".

NEMA also formally adopted the principles proposed in the *White Paper on Environmental Management Policy*, specifying that the National Environmental Management Principles apply to the actions of all organs of state that may significantly affect the environment and must serve as a guide for the interpretation, administration and implementation of NEMA as well as any other legislation governing the management or protection of the environment.

One of the National Environmental Management Principle sometimes referred to as the "Mitigation Hierarchy Principle" (Ten Kate, Bishop & Bayon, 2004: 9) states that "*negative impacts on the environment and on people's environmental rights*", "*the disturbance of ecosystems and loss of biological diversity*", "*pollution and degradation of the environment*", "*the disturbance of landscapes and sites that constitute the nation's cultural heritage*", must be "*anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied*". This principle therefore calls for the consideration of alternatives to prevent, minimise and remedy impacts. The "Mitigation Hierarchy Principle" was also given effect to by section 28 of NEMA which placed a general duty of care and duty to remediate environmental damage on every person, when it states that "*every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment*". In my opinion, at the heart of the duty to take reasonable measures to prevent pollution or degradation from occurring, continuing or recurring or to minimise and rectify unavoidable pollution or degradation of the environment, lays the duty to consider alternatives.

The National Environmental Management Principles, however, highlight the fact that sustainable development is not just about the consideration and prevention, mitigation or remediation of negative impacts, but also the consideration of positive impacts and benefits, with one of the National Environmental Management Principles stating that "*The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment*".

With regards to the need for both negative and positive impacts to be considered in the pursuit of sustainable development, one of the other National Environmental Management Principles further specifically calls for environmental management to be "*integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option*", with the "*best practicable environmental option*" defined as "*the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term*".

The need to consider alternatives to address both positive and negative impacts are further highlighted in section 23 of NEMA when it states that one of the general objectives of IEM is "*to identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with*" the National Environmental Management Principles. Considering the abovementioned objective and within the context of the notion of "*pursuing the selection of the best practicable environmental option*", it is therefore clear that in terms of the South African legislative framework, the identification and assessment of alternatives, lies at the "heart" of environmental management, EIA and the pursuit of sustainable development.

3.6. NEMA EIA Regulations

On 21 April 2006 EIA Regulations was promulgated in terms of Chapter 5 of NEMA (GN No. R. 385, R. 386, and R. 387 in Government Gazette No. 28753 of 21 April 2006 refer), replacing the EIA Regulations that were originally promulgated in terms of ECA and also introduced new provisions regarding EIAs. The NEMA EIA Regulations came into effect on 3 July 2006 (GN No. R. 612, R. 613, R. 614, R. 615, and R. 616 in Government Gazette No. 28938 of 23 June 2006 refer). All activities ("listed activities") identified in GN No. R. 386 and R. 387 which had not commenced by the date of effect of the NEMA EIA Regulations (3 July 2006) may not commence without prior environmental authorisation from the competent authority. GN No. R. 385 stipulates the procedures to be followed in applying for environmental authorisation.

The NEMA EIA Regulations defined "alternative" as "*in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to - (a) the property on which or location where it is proposed to undertake the activity; (b) the type of activity to be undertaken; (c) the design or layout of the activity; (d) the technology to be used in the activity; and (e) the operational aspects of the activity*".

As with the ECA EIA Regulations, the NEMA EIA Regulations' definition of "alternative" does not refer to "all possible alternatives", but again to only those alternatives that would meet "*the general purpose and requirements <u>of the activity</u>*" (emphasis added). As with the ECA EIA process, a very narrowly defined "general purpose and requirement" presents a challenge to the adequate consideration of alternatives (Smith, 2007: 128).

With regard to the consideration of alternatives, section 24(4) of NEMA specifically specifies that the "*procedures for the investigation, assessment and communication of the potential impact of activities must ensure, as a minimum, with respect to every*

application for an environmental authorisation" that "*the environment likely to be significantly affected by the proposed activity and alternatives thereto*", together with the "*potential impact of the activity and its alternatives on the environment*" and the "*mitigation measures to keep adverse impacts to a minimum, as well as the option of not implementing the activity*" (in others words the "no-go" alternative) are investigated and must report on "*gaps in knowledge, the adequacy of predictive methods and underlying assumptions, and uncertainties encountered in compiling the required information*".

For activities listed in GN No. R. 386 a Basic Assessment process (shown in **Figure 5** below) must be followed.

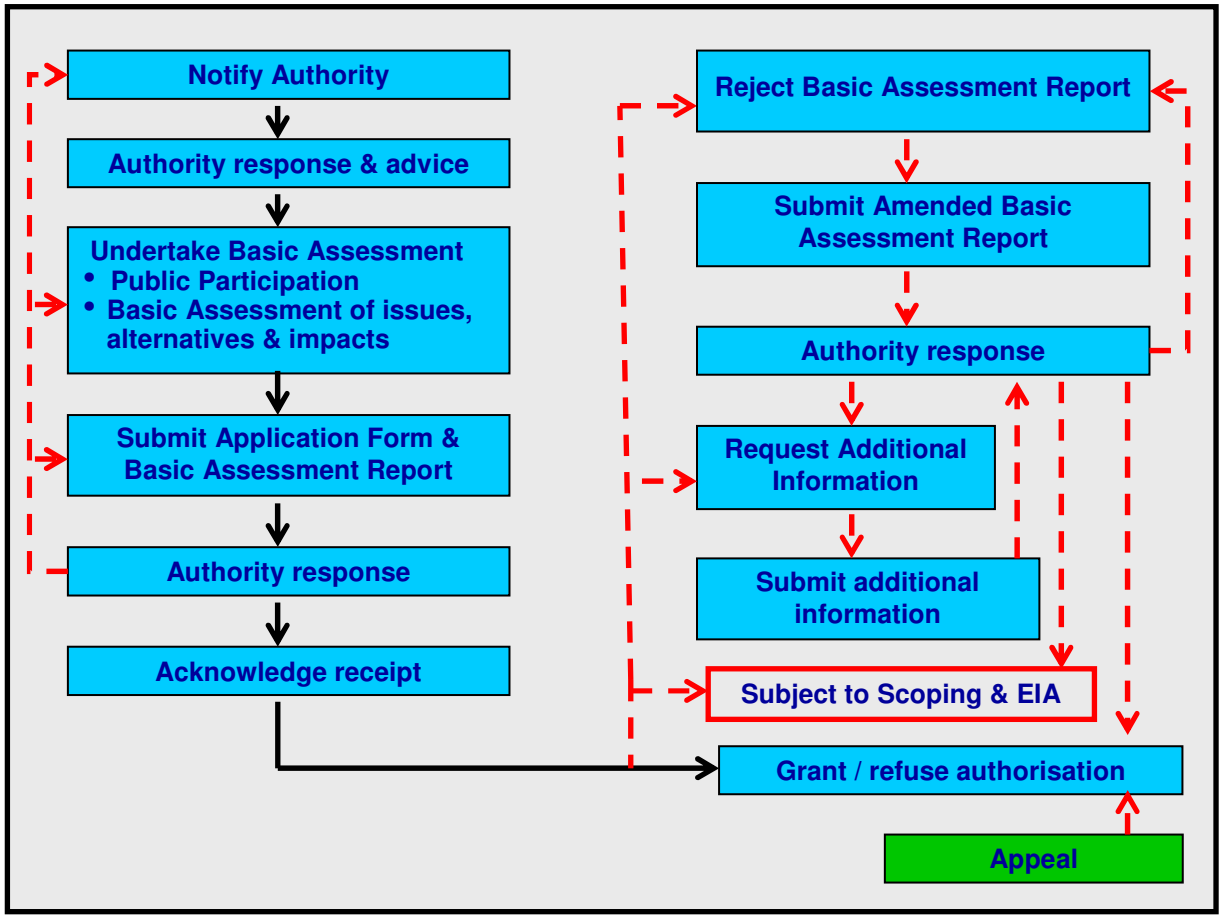

Figure 5. The Basic Assessment Process in terms of NEMA.

In terms of the Regulations the specific content requirements of a Basic Assessment Report include "*a description of the need and desirability of the proposed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives will have on the environment and on the community that may be affected by the activity*" as well as "*a description and assessment of the significance of any environmental impacts, including cumulative impacts, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the activity*".

The Regulations also specifically provided for the authority, when it is unable to decide the application on the Basic Assessment Report alone, to request the environmental assessment practitioner to, over and above the submission of "*such additional information as the competent authority may require*", to specifically "*suggest, consider or comment on feasible and reasonable alternatives*".

As part of the Basic Assessment process, public participation must also be undertaken with potential interested and affected parties to be afforded a reasonable opportunity to participate in the process. Interested and affected parties are specifically afforded an opportunity to identify issues to be addressed and alternatives to be considered, and to comment on alternatives proposed by the applicant, environmental assessment practitioner and other interested and affected parties.

For activities listed in GN No. R. 387 a Scoping and EIA process must be followed (shown in **Figure 6** below). In terms of the Regulations the environmental assessment practitioner must "*subject the application to scoping by identifying*" "*issues that will be relevant for consideration of the application*", "*the potential environmental impacts of the proposed activity*" and "*alternatives to the proposed activity that are feasible and reasonable*".

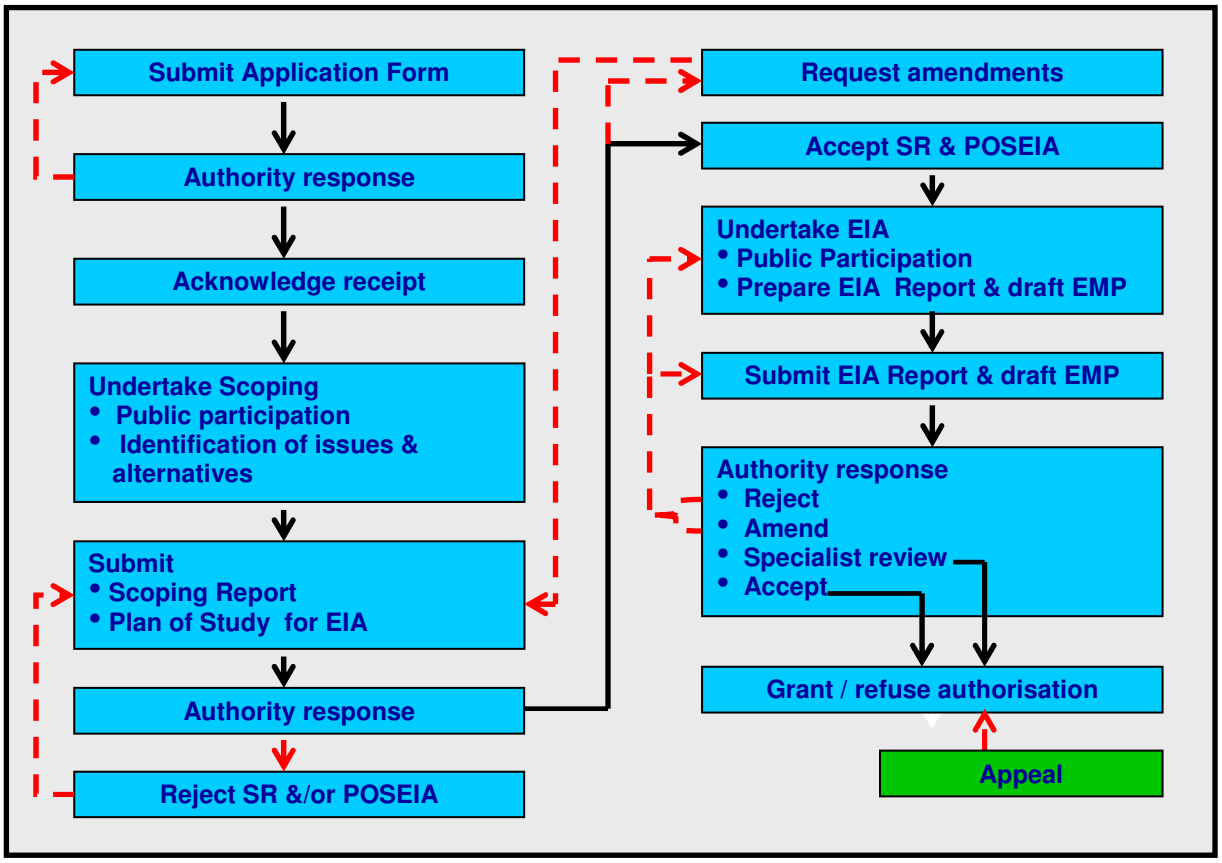

Figure 6. The Scoping and EIA Process in terms of NEMA.

In terms of the Regulations the specific content requirements of a Scoping Report include "*a description of the proposed activity and of any feasible and reasonable alternatives that have been identified*", as well as "*a plan of study for environmental impact assessment which sets out the proposed approach to the environmental impact assessment of the application, which must include*" "*a description of the proposed method of assessing the environmental issues and alternatives, including the option of not proceeding with the activity*".

In terms of the Regulations the specific content requirements of an EIA Report include "*a description of the need and desirability of the proposed activity and identified potential alternatives to the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and the community that may be affected by the activity*", "*a description*

and comparative assessment of all alternatives identified during the environmental impact assessment process" and "*an environmental impact statement which contains*" "*a summary of the key findings of the environmental impact assessment*" and "*a comparative assessment of the positive and negative implications of the proposed activity and identified alternatives*".

As part of both the Scoping and EIA phases, public participation must also be undertaken with potential interested and affected parties to be afforded a reasonable opportunity to participate in the process. Interested and affected parties are specifically afforded an opportunity to identify issues to be addressed and alternatives to be considered, and to comment on alternatives proposed by the applicant, environmental assessment practitioner and other interested and affected parties.

Significantly, the Regulations specify the criteria that must be taken into account by the authority when considering all applications, and specify, in Regulation 8, that when deciding on an application the authority "*must take into account all relevant factors, including* (…) *any feasible and reasonable alternatives to the activity which is the subject of the application and any feasible and reasonable modifications or changes to the activity that may minimise harm to the environment*". In this regard it is further significant to note that for both Basic Assessment and Scoping and EIA applications, the Regulations provide for the authority to "*grant authorisation in respect of all or part of the activity applied for*" and specifies that "*to the extent that authorisation is granted for an alternative, such alternative must* (…) *be regarded as having been applied for*".

In 2006 the DEAT also published a further guideline that specifically dealt with the "*Assessment of Alternatives and Impacts in support of the Environmental Impact Assessment Regulations, 2006*" (DEAT, 2006a). This guideline briefly highlighted the importance of developing a clear definition of the need and desirability of the proposed activity in order to ensure an appropriate assessment of alternatives. It also

reiterated that the alternatives to be considered must be reasonable and feasible with the "no-go alternative" to be considered as the baseline scenario. It further stated that interested and affected parties must be provided with an opportunity to provide inputs into the process of formulating alternatives, and that the process of selecting alternatives should be clearly documented. This guideline, however, did little more than state the obvious (repeating the requirements of the Regulations) – failing to provide clear guidance.

Considering the specific requirements of NEMA and the NEMA EIA Regulations it is, however, clear that, as with the ECA EIA Regulations, the proper identification and consideration of alternatives is a prerequisite for informed decision-making about sustainable development, and justifiably can be seen as the "heart" and "soul" of EIA.

3.7. Exemptions

While the sections above dealt with the requirements for addressing alternatives within EIA processes in terms of ECA, NEMA and the applicable guidelines, it must be noted that both ECA and NEMA provide for the application for and granting of exemption from any provision of the Regulations. An analysis of the legislative framework must therefore include an analysis of the exemption provisions and how these provisions (might) influence the consideration of alternatives.

3.7.1. Exemption in terms of ECA

Section 28A of ECA provides that any person "*may in writing apply*" "*with the furnishing of reasons, for exemption from the application of any provision of any regulation, notice or direction which has been promulgated or issued in terms of*" ECA. Section 28A further states that the authority considering the exemption application may "*refuse to grant exemption*" or "*in writing grant exemption from compliance with any of or all the provisions of any regulation, notice or direction, subject to such conditions as he may deem fit*". Section 35 in turn provides for any person who feels aggrieved at an exemption decision, to appeal such decision.

With ECA itself providing for the granting of exemptions from the provisions of the notices and Regulations, a person could therefore apply for exemption from one or more of the procedural and content requirements in terms of the ECA EIA Regulations or apply for exemption from all of the provisions and therefore from having to obtain "*written authorization*".

3.7.2. Exemptions in terms of NEMA

While section 24(5) of NEMA makes provision for the authority to make regulations that specifies the institutional arrangements and that lays down the procedure to be followed when applying for exemption from "*the provisions of any regulation in respect of a specific activity*", the actual enabling provisions for applying for and granting exemptions appear in the NEMA EIA Regulations themselves. Regulation 51 provides that "*any person to whom a provision of these regulations applies may apply*" in writing with "*an explanation of the reasons for the application*" "*for an exemption from such provision in respect of a specific activity*".

No provision was, however, made in NEMA or the NEMA EIA Regulations for applying for and granting of exemption from any provision of the Act itself. NEMA itself, in section 24, provides that listed activities "*may not commence without environmental authorisation*" and that the "*procedures for the investigation, assessment and communication of the potential impact of activities must ensure, as a minimum, with respect to every application for an environmental authorisation*" that "*the environment likely to be significantly affected by the proposed activity and alternatives thereto*", together with the "*potential impact of the activity and its alternatives on the environment*" and the "*mitigation measures to keep adverse impacts to a minimum, as well as the option of not implementing the activity*" (in others words the "no-go" alternative) must, as a minimum, together with the other minimum requirements in terms of section 24(4), be investigated.

A person also cannot apply to the authority to exempt itself from the requirements that the authority must adhered to in terms of NEMA or the NEMA EIA Regulations.

As already stated the Regulations specifies the criteria that must be taken into account by the authority when considering all applications, and specifies that when deciding on an application the authority "*must take into account all relevant factors, including*" "*any feasible and reasonable alternatives to the activity which is the subject of the application and any feasible and reasonable modifications or changes to the activity that may minimise harm to the environment*". While a person can therefore apply for exemption from one or more of the procedural and content requirements in terms of the NEMA EIA Regulations, a person cannot apply for exemption from having to obtain "*environmental authorisation*" and must at least ensure that the minimum requirements in terms of section 24(4) are adhered to.

In light of the above, the granting of exemption in terms of the NEMA EIA Regulations from the requirement to provide a description of the proposed activity and any identified reasonable and feasible alternatives, and or from the requirement to provide a description of the need and desirability of the proposed activity and potential reasonable and feasible alternatives; and or from the requirement to provide a description and comparative assessment of the significance of the positive and negative implications of the proposed activity and identified alternatives, is therefore not permissible in terms of the minimum requirements in terms of section 24(4) and in terms of the criteria, in terms of Regulation 8, that must be taken into account by the authority when considering all applications.

3.7.3. Exemptions and the NEM Principles

With the promulgation of NEMA it, however, became a requirement to consider the National Environmental Management Principles when deciding on an exemption application. As mentioned earlier the Mitigation Hierarchy Principle calls for the consideration of alternatives in order to prevent, minimise and remedy impacts on the environment; while the need for environmental management to pursue the best practicable environmental option, calls for EIA to pursue the option that provides the most benefit and or causes the least damage to the environment.

Considering these principles, together with the general objectives of IEM, and the general duty of care in terms of NEMA, it is clear that the consideration of alternatives is the fundamental consideration in EIA. As such, the granting of exemption in terms of ECA from having to provide a description of the method that was being proposed to identify alternatives and from the requirement to provide a description of each alternative and a comparative assessment of all the alternatives, will therefore only be justified in exceptional cases (e.g. the upgrading of an existing facility using the best available and known technology, for which the impacts and mitigation measures are well known).

3.8. Need and desirability, and the consideration of alternatives.

While EIAs have up until now been criticised for not having a big enough impact on the type, location and scale of development – in other words on the consideration and generation of fundamental alternatives – the inclusion of the requirement in terms of the NEMA EIA Regulations of 2006 to specifically consider "need and desirability" is set to change this. The requirement to consider need and desirability will also improve the consideration of alternatives where "the general purpose and requirements of the activity" are very narrowly defined.

In terms of the NEMA EIA Regulations it is required that, as part of the Basic Assessment and Scoping and EIA application processes, the environmental assessment practitioner provide a description of the need and desirability of the proposed activity and identified potential alternatives to the proposed activity. The NEMA EIA Regulations specifically states that the following must be provided:

> "(…) *a description of the need and desirability of the proposed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives will have on the environment and on the community that may be affected by the activity*" (Regulations 23(2)(g) and 32(2)(f) of GN No. R. 385 refers).

While the 2006 guideline on the "*Assessment of Alternatives and Impacts in support of the Environmental Impact Assessment Regulations, 2006*" highlighted the

importance of developing a clear definition of the need and desirability of the proposed activity in order to ensure an appropriate assessment of alternatives, and briefly mentioned that alternatives must be assessed in the context of the risks and benefits of the proposed activity, the 2006 guideline failed to provide any further guidance on the issue of "need and desirability".

While the prescribed consideration of "need and desirability" might be a recent legislated addition to EIA in South Africa, the consideration of "need and desirability" had its origins in planning land use management systems. In this regard Dewar (2007:3-4) states:

> "*Some two to three decades ago, the dominant philosophy giving direction to conventional planning land management systems was the system of need and desirability. In terms of this, the system was strongly public-good orientated. For any owner of land to obtain enhanced land development rights, the owner had to prove 'need and desirability': 'need' required evidence that there was a demand for change; 'desirability' required evidence that the proposed change enhanced the public interest more than the continuation of the status quo. If the response to either of these criteria was negative, enhanced rights were refused. In this system, the onus of proof was unambiguously on the developer."*

Dewar (2007: 4), however, highlights that with time the considerations changed and states that:

> *"Firstly, the criterion of 'need' disappeared: the fact that a developer was prepared to invest was taken as evidence of 'need'. Over time, the concept of desirability was also modified. Whereas in the earlier system, increased rights were refused unless the developer could prove a public benefit, increasingly rights were approved unless the public agency could provide evidence of negative impacts. In short, increasingly ownership of land has been interpreted as implying a right to enhanced rights, unless there is strong evidence of negative impacts (that is, strong reasons not to allow this). The onus of proof now rests with the public-authority, not the developer."*

The NEMA EIA Regulations, however, are clear that both and "need" and "desirability" must be considered, and shifts the "onus of proof" back to the developer and his/her independent environmental assessment practitioner and independent specialists.

While I agree with Dewar's (2007) argument that the issue of need and desirability together with fundamental alternatives are better considered at the more strategic level of planning (if properly done) (see my argument below) and that the inadequate consideration of alternatives are a result of bad practice, I, however, differ from Dewar's opinion that, more than just bad practice, the primary reason for the inadequate consideration of need, desirability and alternatives, is the methodological differences between planning and impact assessment.

Dewar (2007: 6) argues that the scientific method used in EIA is a linear process that can only validate or refute a proposal, but does not (usually) result in the generation of alternatives. He argues that impact assessment is about the maximisation of the environmental informant, and that the maximisation of any single layer, no matter how important the layer may be, does not produce alternatives, and ignores the "*truth*" "*that for complex systems to work well, no part is maximised, for compromised are required*". He therefore concludes that EIA must simply be an informant to spatial planning, which uses design methods and follows a cyclical process in which "*ideas are continuously being refined or replaced by alternatives ideas, as more issues and information are introduced into the design process*". He therefore sees planning as "*a continual process of compromise between parts and elements in order to ensure the best overall solution*", with alternatives "*considered and accepted or discarded throughout the process*", and that EIA is simply one informant of the planning process.

It would seem as if Dewar (2007) mistakenly equates "environment" with "biophysical", hence his arguments about the environment only being one element, only one layer, that must inform the planning process. It is, however, clear that Dewar's terms of reference was the EIA Regulations promulgated in terms of ECA. He should rather have considered the provisions of NEMA and the EIA Regulations promulgated in terms of NEMA, as well as the provisions dealing with the identification of sensitive geographical areas and the formulation of EMFs. While I

agree with many of Dewar's arguments, and specifically his call for a more pro-active and integrated approach, I differ from Dewar's view on the theoretical and methodological foundations and the substantive purpose of EIA. From my discussions on EIA above (and from my reading of Cashmore, Lawrence, Sandercock, Maxwell and Conway, and others) it is becoming increasingly clear that there is great (and ever increasing) convergence between the theoretical and methodological approaches to planning and EIA. Authors like McDonald and Brown (1995: 493) have for years been arguing that EIA is evolving as a "planning tool" and that with time EIA will become more than the stand alone process, which it was never meant to be. My argument is the same as Dewar's original argument that the problem rather lies with poor and irresponsible practice.

It is specifically the legislated requirement to consider "need and desirability" during EIA that will result in the realisation (or rather reconfirmation) that EIA can never be, and was never supposed to be, a stand alone process. The consideration of "need and desirability" will result in the improved integration of planning and EIA decision-making processes and methodologies (with EMFs having a specific role to play in this regard), with proper planning to provide the strategic context within which to make project-level EIA decisions, and project-level EIAs providing "feedback" to the planning processes to ensure reflexivity and continued improvement.

In order to properly interpret the NEMA EIA Regulations' requirement to consider "need and desirability", it is, however, necessary to turn to the National Environmental Management Principles in term of NEMA which serve as a guide for the interpretation, administration and implementation of NEMA and the NEMA EIA Regulations. With regards to the issue of "need", it is important to note that this "need" is not the same as the "general purpose and requirements" of the activity. While the "general purpose and requirements" of the activity might to some extent relate to the specific requirements, intentions and reasons that the applicant has for proposing the specific activity, the "need" relates to the interests and needs of the broader public.

In this regard the National Environmental Management Principles specifically require that environmental management must*: "place people and their needs at the forefront of its concern*" and equitably serve their interests; "*be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option*; pursue environmental justice "*so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person*"; ensure that decisions take "*into account the interests, needs and values of all interested and affected parties*"; with the environment to be "*held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage*".

The consideration of "need and desirability" in EIA decision-making therefore requires the consideration of the strategic context of the decision and the broader societal needs and the public interest (Rittel and Webber, 1973: 162; Patel, 2008: 363). The government decision-makers, together with the environmental assessment practitioners and planners, are therefore accountable to the public and must serve their social, economic and ecological needs equitably. This brings us back to the discussion in Chapter 2 about Hardin's (1968) call for governance and a long-term approach to decision-making in order to ensure that limits are not exceeded and that the proposed actions of individuals are measured against the long-term public interest.

In this regard, I am reminded of the following that Gandhi is believed to have said: "*The Earth provides enough for everyone's needs, but not for everyone's greed*" (quoted in Porritt 1984: 124). Edney (2005: 6) defines "*greed*" as "*the acquisition* [consumption] *of a desirable good by one person or a group beyond need, resulting in unequal distribution to the point* [where] *others are deprived* [negatively impacted on]" and argues that "*you cannot have both unrestrained greed and equality*".

EIA decision-making and the achievement of sustainable development, and specifically the consideration of "need and desirability", therefore, calls for the adequate consideration and assessment of the often hidden distributional consequences and trade-offs, carrying capacity restrictions and ecological limits, opportunity costs, and the search for the alternative that will result in the achievement (or at least contribute most to the achievement) of the desired aim/goal for the specific area, the maximum positive impact, the smallest negative impact, equitable impact (negative and positive) distribution, environmental justice and the maintenance of ecological integrity and environmental quality.

The consideration of "need and desirability", when deciding on alternatives, are therefore about shifting the focus from problems to solutions. The consideration of alternatives is about focusing on what could and should be done to achieve (or at least contribute most to the achievement of) the desired aim/goal for a specific area, rather than trying to avoid collapse, ruin and an ecological crisis by simply assessing the "acceptability" of the negative impacts associated with a predetermined development option, that might not be taking us any closer to (and in fact might be taking us further away from) the desired aim/goal for the area. The consideration of need and desirability, and alternatives, must therefore be objectives led (IAIAsa, 2007).

What is desired by a specific community for a specific area must however be strategically and democratically determined (Patel, 2008: 370). Requiring time for prolonged, active and democratic engagement, it, however, becomes clear that the *ad hoc* reactive nature of project-level EIA decision-making, with its mostly one or two "events" of public participation, and the reality of time and resource constraints (Cashmore, 2004: 411-412), poses a significant obstacle to the proper consideration of need and desirability. Need and desirability, and the consideration of fundamental alternatives, are therefore potentially best addressed and determined during the formulation of the sustainable development vision, goals and objectives of IDPs and

its required Spatial Development Framework ("SDF") (Republic of South Africa, 2000), during which collaborative and participative processes (should) play an integral part, and should be given effect to (Edigheji, 2005: 9), in the democratic processes at local government level.

In this regard the SDF, that in terms of the IDP Regulations should form an integral part of each IDP, must specifically "*set out objectives that reflect the desired spatial form of the municipality* (…) *contain strategies and policies regarding the manner in which to achieve the objectives (…) which strategies and policies must (…) indicate desired patterns of land use within the municipality (…) provide strategic guidance in respect of the location and nature of development within the municipality (…) provide a visual representation of the desired spatial form of the municipality, which representation (…) must indicate desired or undesired utilisation of space in a particular area"* (Republic of South Africa, 2001).

Due to a lack of integration between IDP and EIA as well as inadequate attention being given to environmental factors during IDP; EIA and IDP, as currently practiced, are, however, based on different considerations. In this regard Judge Ngcobo in his ruling in the Constitutional Court case of **Fuel Retailers Association of Southern Africa v. Director-General Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province & others (Case CCT 67/06) (2007)** states that:

> "*Need and desirability are factors that must be considered by the local authority in terms of the Ordinance. The local authority considers need and desirability from the perspective of town-planning and an environmental authority considers whether a town-planning scheme is environmentally justifiable. A proposed development may satisfy the need and desirability criteria from a town-planning perspective and yet fail from an environmental perspective."*

It must, however, be noted that the decision before Judge Ngcobo was issued in terms of the ECA EIA Regulations and that the Judge considered the provisions of the Town-Planning and Townships Ordinance, 1986 (Ordinance No. 15 of 1986), ECA, the ECA EIA Regulations and NEMA. Cognisant of the need to consider

the strategic context of a decision, the broader societal needs and the public interest, and in an effort to better address cumulative impacts, the legislative provisions related to the consideration of need and desirability have, however, since evolved.

The Local Government: Municipal Systems Act (Act No. 32 of 2000) (MSA) (Republic of South Africa, 2000) as well as the Local Government: Municipal Planning and Performance Management Regulations (Republic of South Africa, 2001) now specifically provide for the determination of what is desirable and to "*indicate desired or undesired utilisation of space"* based on the "*needs of the local community*", "*environmental impact*" and the duty to "*promote a safe and healthy environment*" – in order to ensure the "*overall social and economic upliftment of communities in harmony with their local natural environment*".

As already stated, the NEMA EIA Regulations that have since been promulgated also specifically calls for the consideration of "*need and desirability*". The NEMA EIA Regulations also provide for the compilation of EMFs that must "*specify the attributes of the environment in the area, including the sensitivity, extent, interrelationship and significance of those attributes (…) state the environmental management priorities of the area (…) indicate the kind of activities that would have a significant impact on those attributes and those that would not (…) indicate the kind of activities that would be undesirable in the area or in specific parts of the area*".

These legislative changes to the IDP and EIA legislation will result in the improved integration and convergence of planning and EIA practice. Properly informed SEA-based IDPs and SDFs, refined by EMFs, should therefore provide the strategic context and decision-making framework for the consideration of need, desirability and alternatives; with the actual and potential socio-economic and ecological impacts of a specific proposal to be considered during the project-level EIA.

Financial viability, previously often the only or at least the main consideration, must therefore in terms of NEMA and the NEMA EIA Regulations be considered within the context of "justifiable" economic development, and be measured against the broader

societal short-term and long-term needs and ecological impacts. While the financial viability considerations of the private developer might therefore provide an indication of the "do-ability" of the development, the "need and desirability" will be determined by consideration of the broader community's needs and interests as reflected in the IDP, SDF and EMF for the area, and as determined by the EIA. While the importance of job creation and economic growth for South Africa cannot be denied (The Presidency, 2005), the Constitution specifically calls for *justifiable* economic development.

Devenish (1999: 335) when interpreting and commenting on the Constitutional duty to "*secure ecological sustainable development and the use of natural resources while promoting justifiable economic and social development*", highlights that these considerations must be "*construed as an integrated whole*", with the emphasis to fall on the "*cardinal concept of sustainability*". Considering the Constitutional requirement that social and economic development to be *justifiable* Judge Ngcobo in his ruling in the Constitutional Court case of **Fuel Retailers Association of Southern Africa v. Director-General Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province & others (Case CCT 67/06) (2007)** states that:

> "*What section 24 requires, and what NEMA gives effect to, is that socio-economic development must be justifiable in the light of the need to protect the environment. The Constitution and environmental legislation introduce a new criterion for considering future developments. Pure economic factors are no longer decisive. The need for development must now be determined by its impact on the environment, sustainable development and social and economic interests. The duty of environmental authorities is to integrate these factors into decision-making and make decisions that are informed by these considerations. This process requires a decision-maker to consider the impact of the proposed development on the environment and socio-economic conditions*."

The specific needs of the broader community must therefore be considered together with the distributional consequences in order to determine whether or not the development is "justified", will contribute to environmental and social justice, and will

result in the "best practicable environmental option" – in other words to ensure that the development will be socially, economically and environmentally sustainable.

The arguments above were presented at a workshop held by DEAT and the provincial departments responsible for environmental affairs during June 2008, which resulted in the following questions being formulated by the workshop attendees as questions to be addressed when the need and desirability of a development are to be considered in terms of the NEMA EIA Regulations:

NEED ('timing'):

Question 1: *Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved Spatial Development Framework (SDF) agreed to by the relevant environmental authority? (i.e. is the proposed development in line with the projects and programmes identified as priorities within the IDP).*

Question 2: *Should development, or, if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur here at this point in time?*

Explanation: Questions 1 and 2 *seeks to find clarity as to whether the proposed land use is catered for in the current planning framework of the SDF and is intended for at that specific point in time. In this context the term land use should not only be broadly defined as agriculture, residential or industrial use, etcetera, but where relevant, it must be further qualified, for example, stating specifically whether a housing development is for social or high income purposes, or whether the industrial use is for service industries, or heavy industry, or whether the development is a high-rise as opposed to low-rise development, etcetera. Furthermore, if the land use is to occur in the proximity of an urban area, clarity must also be provided regarding its location in relation to the urban area.*

Note*: "Urban areas" is defined in the proposed amended NEMA EIA Regulations as "areas situated within the urban edge (as defined or adopted by the competent authority, or in instances where no urban edge or boundary has been defined or adopted, it refers to areas situated with the edge of built-up areas". "Competent authority", refers to the organ of state charged by the NEMA with evaluating the environmental impact of that activity and, where appropriate, granting or refusing an environmental authorisation in respect of listed activities).*

Question 3: *Does the community/area need the activity and the associated land use concerned (is it a societal priority)? This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate).*

Explanation: Question 3 *relates to the type of development and land use and not just its associated benefits or costs (i.e. the specific needs of the community at that specific time, e.g. small business rather than shopping centres, low-cost housing rather than luxury housing, etcetera, must be considered).*

Question 4: *Are the necessary services with appropriate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?*

Question 5: *Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services)?*

Explanation: Question 4 and 5 *- According to the NEMA EIA Regulations an EIA must contain "a description and assessment of the significance of any environmental impacts, including cumulative impacts, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the activity". An associated activity/component essential for the undertaking of a proposed development (i.e. any associated component of the development which cannot be separated from the development itself; e.g. residential development that cannot exist without the essential municipal infrastructure to serve it in terms of water and electricity provision, waste removal, treatment of sewage and management of stormwater) must be considered together with the proposed development, before the environmental authority decides on the development application. The environmental authority must (be able to) apply its mind to all the impacts (of the development and all its associated activities/components) prior to decision-making. Deferring decision-making on associated components to a future date constitutes conditional and piecemeal (incremental) decision-making, which result in the environmental authority not applying its mind to all the impacts and the pre-empting of decisions on the associated components – resulting in unsustainable development and legally impermissible administrative action.*

Question 6: *Is this project part of a national programme to address an issue of national concern or importance?*

Explanation: Question 6 *- It is acknowledged that there will be certain strategically important developments (e.g. the construction of a nuclear power station) that are part of strategic programmes that are not always catered for in current planning framework of the SDFs. In these instances the strategic need and desirability considerations must be measured against the needs and desires of the area in question when determining the need and desirability of the development under consideration.*

DESIRABILITY ('placing'):

Question 1: *Is the development the best practicable environmental option (BPEO) for this land/site?*

Explanation: Question 1 *- According to NEMA the "best practicable environmental option" means the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term" and must include the option of not upgrading land use rights among the alternatives chosen from.*

Question 2: *Would the approval of this application compromise the integrity of the existing approved municipal IDP and SDF as agreed to by the relevant authorities.*

Question 3: *Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in EMFs), and if so, can it be justified from in terms of sustainability considerations?*

Explanation: Question 2 and 3 *– If the development is to occur in the proximity of an urban area, clarity must also provided whether or not it will be situated within or outside of the urban area, with the impacts associated with its location in relation to the urban area to be discussed.*

Question 4*: Do location factors favour this land use (associated with the activity applied for) at this place? (this relates to the contextualisation of the proposed land use on this site within its broader context).*

Question 5*: How will the activity or the land use associated with the activity applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?*

Question 6*: How will the development impact on people's health and wellbeing (e.g. i.t.o. noise, odours, visual character and sense of place, etc)?*

Question 7*: Will the proposed activity or the land use associated with the activity applied for, result in unacceptable opportunity costs?*

Explanation: Question 7 *- Opportunity costs can be defined as the net benefit that would have been yielded by the next best alternative (for example, if farming is the next best alternative for a piece of land, then the foregone benefit of losing the farming option will be the opportunity cost of any other land use, or if not upgrading use rights is the next best alternative for a piece of land, then the foregone benefit of forfeiting the non-upgrading option will be the opportunity cost of the proposed land use). The concept of opportunity costs is applicable to project alternatives as well as policy selection. It is vital information if decision makers are to understand the implications associated with specific development proposals.*

A key part of considering opportunity costs is commonly to highlight the benefits and/or disadvantages (if any) of not upgrading the land use rights. Opportunity cost is a concept that often need not involve monetary values, though where these values can be given, they allow for a more detailed comparison than would otherwise be possible.

Question 8*: Will the proposed land use result in unacceptable cumulative impacts?*

Explanation: Question 8 *- Cumulative impacts can be defined as:*

- *Additive: the simple sum of all the impacts (e.g. the accumulation of ground water pollution from various developments over time leading to a decrease in the economic potential of the resource).*
- *Synergistic effects occur where impacts interact with each other to produce a total effect greater than the sum of individual effects. These effects often happen as habitats or resources approach capacity (e.g. the accumulation of water, air and land degradation over time leading to a decrease in the economic potential of an area).*
- *Time crowding effects occur when frequent, repetitive impacts occur on a particular resource at the same time (e.g. boreholes decreasing the value of water resources).*
- *Neutralizing effects occur where impacts may counteract each other to reduce the overall effect (e.g. infilling of a wetland for road construction, and creation of new wetlands for water treatment).*
- *Space crowding effects occur where we have a high spatial density of impacts on a particular ecosystem (e.g. rapid informal settlement).*
- *Externalisation of disadvantages occurs when there is no or insufficient consideration given to the associated social costs that will be borne by the public.*

3.8. Conclusion

The theory of EIA as well as the policy and legislative framework for EIA in South Africa therefore also see the consideration of alternatives as the "heart" and "soul" of EIA. To overcome the "*tyranny of small decisions*" (Bill Odum quoted in Beatley & Manning, 1997: 7), "*steady erosion through incremental changes*" (Dewar, 2007: 3) and avoid "*death by a thousand cuts*" (ancient Chinese saying), the strategic context of the development and decision must be considered in order to better consider cumulative impacts and the strategic consequences of project-level alternatives.

The need and desirability of a development and its possible alternatives must therefore be measured against the EMF, IDP and SDF for the area. While project-level EIA decision-making therefore must help us stay the course by finding the alternative that will take us closer to our desired aim/goal, it is through IDP and strategic spatial planning (such as SDFs), that fundamental alternatives are to be considered, the desired destination is to be decided and the map drawn of how to get there.

In Chapter 4, which follows, a policy analysis will, therefore, be undertaken of the legislative and policy framework for IDP in South Africa; again with a specific focus on the consideration of alternatives. The Chapter will also looks in more detail at Strategic Environmental Assessment and the fact that a broader range of alternatives, and specifically fundamental alternatives and development scenarios, are better considered at a strategic level than in project-level EIA.

CHAPTER 4. INTEGRATED DEVELOPMENT PLANNING IN SOUTH AFRICA

4.1. Introduction

This Chapter consists of a policy analysis of the legislative and policy framework for IDP in South Africa; again with a specific focus on the consideration of alternatives. The analysis first highlights the different interpretations of the meanings and objectives of "development", "planning" and "development planning" and then turns to the specific objectives of IDP in South Africa.

Strategic Environmental Assessment will also be looked at in more detail and the fact that a broader range of alternatives, and specifically fundamental alternatives and development scenarios, are better considered at a strategic level than in project-level EIA will also be highlighted. The different stages of the IDP process is also considered and attention drawn to the important role that the consideration of alternatives (should) play during the different stages.

It is argued that IDP should not be about the production of a static "business-as-usual" plan, but rather about the exploration of alternatives and the formulation and implementation of a programme of action to achieve reconstruction, redistribution, reconciliation, and sustainable development in South Africa.

4.2. What is meant by "development", "planning" and "development planning"?

> "*The capacity to imagine a better world, one more just or harmonious or liberating, and the capacity to continually re-envision problems and solutions are qualities that make us human and give us a fighting chance at improving our lot. For all the trouble caused by vague goals, imprecise problem definitions, and unruly policy instruments, we would be fools to trade them in for a calculator*." (Stone, 2002: xiii)

> "*(…) planning is about delivering change for the better through pro-active, action-oriented processes that aim to harness the skills and resources of the range of stakeholders (public and private) to deliver the preconceived vision*." (Carmona & Sieh, 2004: 36)

While Campbell and Fainstein (1996: 6) defines "planning" as "*intervention with an intention to alter the existing course of events*", Carmona and Sieh (2004: 35-36) argue that "planning" is an attempt to manage processes of change through deliberate and positive actions, with planning having to be holistic and integrative, with the planner having to synthesise and recognise the core issues within multi-faceted complex problems and find focussed, effective and creative problem-solving solutions. Planning is therefore about the allocation of limited resources and determining the quality of the relationships between people and space, in an effort to build sustainable communities.

Planning therefore call for foresight in order to construct and qualitatively explore a range of alternative paths of future development, with foresight defined as "*not a process of forecasting the future but rather an attempt to explore the space for* [alternative] *human actions and interventions to shape the future*" (Renn 2002, quoted in Voß, Truffer & Konrad, 2006: 166). The alternative future scenarios constructed through foresight allows for self-reflection, with the diversity of alternative future scenarios sensitising planners, decision-makers and communities about the alternative courses of action that could be considered, in the process preventing premature "lock-in" to specific "tried-and-tested" (and often unsustainable) development trajectories (Voß, Truffer & Konrad, 2006: 166).

Claassen (2002: 4) defines "development" as "*a change from a worse state to a better state*", "planning" as "*the process of determining a course of action to achieve a desired aim*", and therefore defines "development planning" as "*the processes to determine courses of action aimed at changing from a worse state to a better state*". He therefore concludes, and I agree with his view, that development planning should not be about the production of a static plan, but rather about the production and implementation of a programme of action to achieve sustainable development.

Craythorne's (2006: 306) view of "planning" shares similarities with Claassen's (2002: 4), when he argues that the compiling of a static plan should not be the end result,

but rather only a step towards the achievement of specific goals and objectives, with planning seen as a circular, as opposed to a linear process. Craythorne (2006: 139) further also considers the meaning of "development" and argues that while the Oxford Compact English Dictionary defines "development" as both a process and a stage of growth, it is important to also specifically consider for whom the development is intended, the location of the development being considered, and the subject community.

Considering the Constitutional obligation to promote "sustainable development" Judge Ngcobo in his ruling in the Constitutional Court case of **Fuel Retailers Association of Southern Africa v. Director-General Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province & others (Case CCT 67/06) (2007)** refers the *Declaration on the Rights to Development* adopted by the United Nations' General Assembly Resolution 41/128 of 4 December 1986, which defines "development" as "*a comprehensive economic, social, cultural and political process, which aims at the constant improvement of the well-being of the entire population*" [emphasis added].

Lélé (1991: 141) defines "development" as "*a process of directed change*" and highlights that both the objectives of the process and the means of achieving the objectives must be considered. Planning is therefore a process of imagining alternative futures, determining a long-term vision of the desired future, setting goals and objectives, exploring alternatives, determining strategies and programmes to move towards the achievement of the vision, goals and objectives, and monitoring and evaluation in order to make adjustments over time (van Niekerk, van der Waldt & Jonker, 2001: 92-92; Stone, 2002; Carmona & Sieh, 2004: 35-36; Craythorne, 2006: 139 & 306).

To broadly define "development" and "planning" is therefore not good enough. Rather the specific South African context must be considered when the vision, goals, objectives, strategies and programmes for IDP are to be determined. In this regard, the following definition of "development" from the *White Paper on Environmental*

Management Policy (DEAT, 1997) needs attention: "[A] *process for improving human well-being through a reallocation of resources that involves some modification of the environment. It addresses basic needs, equity and the redistribution of wealth. Its focus is on the quality of life rather than the quantity of economic activity."*

4.3. Integrated Development Planning – A new approach to planning

Despite the miracle of political transformation in South Africa, with the first democratic elections held in 1994 and the subsequent establishment of a constitutional democracy, the majority of South Africans' quality of life remains poor; with joblessness, poverty, and unhealthy living conditions being a daily reality for many people (Coetzee, 2002: 1). The purpose of an IDP should therefore be to define and operationalise the "*objectives of non-racial democracy enshrined in the Constitution and the goal of entrenching equal opportunities for all*" (Parnell & Pieterse, 1998: 12) and therefore addressing the legacy of Apartheid, at the Local Government level.

With the growing realisation that sustainable development requires the holistic and integrated consideration of the biophysical, economic and social aspects of development (UNCED, 1992; CSD, 1995), integrated planning methodologies were increasing seen as a way of achieving sustainable development. In South Africa, Municipalities are seen as key agents in the development and transformation process in South Africa, with the Constitution giving Local Government a high level of legislative and executive autonomy, at least in theory (DPLG, 2002).

According to various authors, local level planning before IDP was mostly characterized by (Coetzee, 2002: 8; Oranje, Harrison, van Huyssteen & Meyer, 2000: 12):

- mainly serving the (perceived) needs of the privileged (white) members of society;
- primarily concerned with control of land use in order to ensure the desired spatial pattern of development;

- a top-down process with little opportunity for broad stakeholder and public participation ;
- a highly technical process undertaken by specialists;
- fragmented sector based planning with limited integration;
- a focus on infrastructural delivery programmes by the government with hardly any focus trying to facilitate private sector investment in development;
- a weak focus on implementation; and
- little regard for environmental, social and economic concerns.

From the above, it is clear that before the introduction of IDP, planning was strongly influenced by *Rational Comprehensive Planning* theory (Sandercock, 1998: 87-89). In the 1990s the transition to a democratic government together with the international call for (more) sustainable and a holistic approach to development following the first World Summit on Sustainable Development, resulted in extreme criticism against the planning undertaken during the Apartheid era, and the search for alternative ways of planning (Oranje *et al*, 2000: 12-13).

Shortly after the first democratic elections in South Africa in 1994, IDP therefore emerged as South Africa's new approach to planning, with IDP defined in 1995 as:

> *"a participatory planning process aimed at integrating sectoral strategies, in order to support the optimal allocation of scarce resources between sectors and geographic areas and across the population in a manner that promotes sustainable growth, equity and the empowerment of the poor and the marginalised"* (FEPD quoted in Coetzee, 2002: 8).

From this early definition of IDP and with the philosophy and strategy of IDP seen as the "*most ambitious process of positive social engineering in the history of South Africa*" (Davids, Theron & Maphunge, 2005: 133), it is clear that the original concept of IDP was strongly influenced by the *Political-economic Mobilization* approach to planning and more specifically *Advocacy Planning* (Sandercock, 1998: 89-94; Lawrence, 2000: 614-615). The *Political-economic Mobilization*, as with IDP, adopts a bottom-up approach and calls for direct and active political action by communities

in response to a critique of the past, with a particular focus on the need for structural change, community empowerment, and social, environmental and economic justice. *Advocacy Planning,* as a form of *Political-economic Mobilization,* and IDP both has a particular focus on the poor and the historical disenfranchised, and consequently on the need for socio-economic reform.

Through the process of IDP, Municipalities as the "hands and feet" of the reconstruction and development programme, had to integrate and align the efforts of government and its social partners to address the challenge of reconstruction, redistribution, reconciliation and sustainable growth, in order to address the legacy of Apartheid, and fundamentally transform the South African society (Cameron, 1999; The Presidency, 2005).

It is also significant to note that from the start it was made clear that the "developmental" path for which IDP had to plan for, had to be a "sustainable development" path, with the 1998 IDP Manual adopting the following definition of "sustainable development":

> *"Sustainable development is development that delivers basic social and economic services to all, without threatening the viability of the ecological and community systems upon which these services depend."*

It is also significant to note that the Planning Profession Act (Act No. 36 of 2002) (Republic of South Africa, 2002) defined "planner" as "*a person who exercises skills and competencies in initiating and managing change in the built and natural environment in order to further human development and environmental sustainability*" and established planning profession principles which included principles that state that planning must "*further human development and environmental sustainability*", must "*pursue and serve the interests of the public to benefit the present and future generations*", that the planner must be independent and act in an objective manner, and that the planning profession must "*promote environmentally responsible planning which will ensure sustainable development*".

According to the IDP Guide Pack (DPLG, 2001) one of the first steps in the IDP process is the formulation of a common vision for the municipality by all the residents and stakeholders. This vision must indicate the ideal situation the municipality would like to achieve; the vision being the desired future against which to evaluate and measure alternative courses of action. In this regard IDP can also be described as adopting a *Socio-ecological Idealism* approach, in that it utilises a holistic integrated socio-ecological vision of the municipality's desired future against which to explore alternative paths to take towards the desired future, while promoting a sense of community, collective action, and the public interest (Lawrence, 2000: 612-614).

One of the major criticisms against the *Rational Comprehensive* form of planning undertaken in South Africa before IDP, is that it did not integrate social, ecological and economic factors into planning, and failed to adequately consider the substantive objectives and context for planning. In response to this shortcoming, a "*Socio-ecological Idealism*" approach to planning promotes the reintegration of social and ecological factors into the planning process. The persuasive power of ideas is used to transform individuals, organisations and society, with holistic visions of a desired future against which to evaluate and measure the alternative courses of action (Lawrence, 2000: 612-614).

One of the other main reasons for the adoption of a *Socio-ecological Idealism* approach to planning was the need to address the communication gap between government and their planners on the one hand, and the communities on the other hand. Adopting a *Social-ecological Idealism* approach (Lawrence, 2000: 612-614) to IDP, planning is seen as a learning process where the different role players (government, planners and communities) all learn from each other through a process of dialogue.

According to Oranje *et al* (2000: 14-17) and the Decentralized Development Planning Task Team ("DDPTT") (2001) the approach taken by IDP methodology should be consultative and participatory, strategic, integrated, and implementation-oriented:

4.3.1 Consultative and Participatory Planning

The processes of empowerment, improved integration and democratisation of planning (deep and deliberate democracy) are fundamental themes in the new approach to planning adopted post-Apartheid (Van Huyssteen, 2000: 4-5 & 10). With the foundations of a democracy based on the ability of democratically elected office-bearers to deliberate and consult with the electorate on the issues that affect their daily lives, deliberation and consultation is vital to ensure that the true needs, wants, and desires or the people are identified and correctly prioritised (van Niekerk, van der Waldt & Jonker, 2001: 65-66 & 119).

The approach to IDP was therefore strongly influenced by the Reconstruction and Development Programme of South Africa and specifically its participatory and consultative approach of working with local communities to try and find sustainable solutions to addressing their needs and improving their quality of life (Visser, n.d.: 11-13; Davids, Theron & Maphunge, 2005), with IDP having to follow participative and collaborative processes of "making connections" (Muller, 2006: 1027, 1032-1033 & 1046).

In theory, a consultative and participatory approach to planning is therefore followed based on the principle of "*inclusive and representative consultation and/or participation*" (DDPTT, 2001). During the planning process all the residents and stakeholders within a municipal area, together with representatives of the National and Provincial sphere of government should be consulted with. Due to the large number of people to be consulted with in certain municipal areas, the IDP Guide Pack (DPLG, 2001) proposes a participatory approach based on institutionalised participation where residents and stakeholders elect representatives to serve on a Representative Forum. Through this structured participation as well as specific

opportunities for participation created during the planning process, public consultation happens during all the phases of the IDP process.

With its focus on collaborative visioning, communication and consensus building, with the public interest to be "jointly discovered and willed" (Lawrence, 2000: 617), it is therefore clear that the theory of the IDP methodology has also been influenced by the *Communications and Collaboration* approach to planning (Lawrence, 2000: 616-617). As such, IDP also share the risk associated with *Communicative and Collaborative Planning* in that too much focus on process and consensus building could result in too little substance and inadequate outcomes. Considering the South African context of a young democracy and the associated urgent need for socio-economic reform, the following "warning" from Lawrence (2000: 617) needs specific attention:

> "*The consensus of process participants is not always conducive to the achievement of social, economic, and ecological objectives or even minimum standards. Sometimes difficult decisions must be made - decisions that will not be supported by all stakeholders. The CC theory does not appear well adapted to overcoming resistance to change, to rectifying structural inequities, to addressing highly complex issues (the lowest common denominator may not be an appropriate response), or to considering large scale and long-term choices where not all affected parties (e.g., future generations) may be available*."

4.3.2 Strategic Planning

With strategic planning methodology increasingly being used by the public sector to evaluate internal and external factors affecting their future, to determine the best use of limited resources, and to identify specific strategies for dealing with change (Rouse, Chandler & Arason, 1999: 3), IDP also adopt a strategic planning approach (DPLG, 2001). As a management tool, municipalities are supposed to use a strategic planning approach to obtain a broad view of its needs in order to develop a holistic and integrated plan for addressing these needs (Davids, Theron & Maphunge, 2005).

The strategic planning approach to be followed, consists of (Oranje *et al*, 2000: 14-16; DPLG, 2001; DDPTT, 2001):

- Prioritisation – rather than trying to address all the issues identified in a comprehensive manner, the most important and urgent issues, that will have maximum impact, are identified and focussed on.
- Focussed analysis – rather than collecting comprehensive information, analysis is focussed on the most crucial information.
- Relief and release – rather than simply addressing symptoms (relief), root causes are also addressed (release), with an action-oriented and outcomes-focussed planning approach adopted.
- Constraints, resources and opportunities – the status quo is analysed taking into account the constraints, existing resources and opportunities.
- Alternative strategic options – rather than replicating preconceived options based on historic approaches adopted, new and innovative options are identified and analysed.
- Performance management – a system is put in place to monitor outcomes against the targets and indicators set.

4.3.3 Integrated Planning

NEMA and Agenda 21 (UNCED, 1992) both define sustainable development as "*development that requires the integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations*". With regards to the need for an integrated approach to planning and the coordination of sectoral planning Agenda 21 (UNCED, 1992, section 10.1) specifically state:

> "*If, in the future, human requirements are to be met in a sustainable manner, it is now essential to resolve these conflicts and move towards more effective and efficient use of land and its natural resources. Integrated physical and land-use planning and management is an eminently practical way to achieve this. By examining all uses of land in an integrated manner, it makes it possible to minimize conflicts, to make the most efficient trade-offs and to link social and economic development with environmental protection and enhancement, thus helping to achieve the objectives of sustainable development*."

Addressing the need for an integrated approach to the planning and management of land resources, a report of the Commission on Sustainable Development (CSD, 1995: 11) states that:

> "*The necessary holistic integrated approach to the optimization of sustainable land use can be briefly defined as an operational programme covering a defined area of land and its population which methodically identifies human and environmental needs, identifies the potential and options for change and improvement, lists and evaluates all relevant physical, social, economic and policy factors, and develops, in consultation with all stakeholders, the series of actions necessary to permit and facilitate agreed changes*."

In light of the above it is therefore encouraging that IDP adopts an integrated approach to planning, calling for holistic inter-sectoral engagement, alignment and integration on cross-cutting issues (DDPTT, 2001). Within the local sphere of government the IDP process requires local and district-level planning to inform each and be aligned. The process however also specifically requires the national and provincial spheres of government to engage with the municipalities on matters of mutual interest and align their intervention strategies and actions (DPLG, 2001).

4.3.4 Implementation Oriented Planning

Too often the production of a plan tend to be considered as the end result, instead of realising that the production of the plan was just one of the steps necessary to achieve specific goals and objectives for an area (Craythorne, 2006: 306). In order for Municipalities to deliver on their developmental and service delivery mandates, IDP adopts an implementation oriented approach to planning, specifically providing for projects to be developed that are specific with regards to their qualitative and quantitative targets, time of implementation, location (linked to the SDF), budgetary needs and funding sources, and assignment of implementation tasks (DDPTT, 2001). An implementation oriented approach to planning also means that those agencies that will be responsible for implementation must actively participate during the planning process, in order to ensure that strategies, plans and programmes are realistic and will be timeously implemented (DPLG, 2001).

In theory, the integration and alignment of the initiatives and programmes of the Municipality with the other social partners, and even the private sector, should result in all the different implementation instruments and mechanism being mobilised in a concerted effort to achieve the developmental targets for the area. In this regard the administration of the different regulatory instruments by all the organs of state should be guided by the applicable Municipal IDP (Claassen, 2002: 34 & 72) for the area under consideration. Implementation Oriented Planning also call for a developmental and land use management approach, as opposed to land use control approach, to be adopted in order to incentivise, facilitate and promote the desired development for a specific area (MALA, 2001; Craythorne, 2006: 184-185).

4.4. Local Government Transition Act Second Amendment Act

In 1996 the Local Government Transition Act (Act No. 203 of 1993) was amended with the promulgation of the Local Government Transition Act Second Amendment Act (Act No. 97 of 1996), which for the first time formally introduced "Integrated Development Planning" (Craythorne, 2006: 145). The Act defined an "Integrated Development Plan" as "*a plan aimed at the integrated development and management of the area of jurisdiction of the municipality concerned in terms of its powers and duties, and which has been compiled having regard to the general principles contained in Chapter 1 of the Development Facilitation Act, 1995 (Act No. 67 of 1995), and, where applicable, having regard to the subject matter of a land development objective contemplated in Chapter 4 of that Act*" (Republic of South Africa, 1996a).

The Act, however, only provided a very broad indication of what was required in terms of the substantive purpose and content requirements of an IDP, with very little detail also provided about the IDP process to be followed. Oranje *et al* (2000: 3), however, are of the opinion that the lack of a clear indication and detail in terms of what was required, was not a mistake, but rather a conscious decision to not be overly prescriptive and, thereby, allow for flexibility and innovation.

4.5. Municipal Systems Act

It was, however, with the promulgation of the Local Government: Municipal Systems Act (Act No. 32 of 2000) ("MSA") on 20 November 2000 (GN No. R. 1187 in Government Gazette No. 21776 of 20 November 2000 refer) (Republic of South Africa, 2000) that the role of IDP was expanded and clarified, with IDP to be used as a framework to provide municipalities with an integrated, holistic, participatory and strategic plan to guide their work and their new developmental role (DEAT, 2002c). The Act made it clear that the intention was to "*build local government into an efficient, frontline development agency capable of integrating the activities of all spheres of government for the overall social and economic upliftment of communities in harmony with their local natural environment*".

Of significance is the fact that the MSA defined "development" as "*sustainable development and includes integrated social, economic, environmental, spatial, infrastructural, institutional, organisational and human resources upliftment of a community aimed at- (a) improving the quality of life of its members with specific reference to the poor and other disadvantaged sections of the community; and (b) ensuring that development serves present and future generations*". This definition largely mirrors the definition of sustainable development adopted in the Constitution and in NEMA, but more significantly, in terms of the MSA all development must therefore be sustainable development.

In terms of the MSA the council of a municipality has the duty to "*exercise the municipality's executive and legislative authority and use the resources of the municipality in the best interests of the local community*", with the municipal administrators to respond "*to the needs of the local community*". Significantly the municipality also has the duty to promote and undertake sustainable development in the municipality. Coupled with this duty are a further duty to "*promote a safe and healthy environment in the municipality*" and the duty to contribute to the progressive

realisation of the fundamental rights contained in the Constitution including the Environmental Right contained in section 24 of the Constitution.

In terms of the MSA the council of a municipality also has the duty to "*strive to ensure that municipal services are provided to the local community in a financially and environmentally sustainable manner*", with the MSA defining "environmentally sustainable" as "*in relation to the provision of a municipal service, means the provision of a municipal service in a manner aimed at ensuring that- (a) the risk of harm to the environment and to human health and safety is minimised to the extent reasonably possible under the circumstances; (b) the potential benefits to the environment and to human health and safety are maximised to the extent reasonably possible under the circumstances; and (c) legislation intended to protect the environment and human health and safety is complied with*". In this regard the need for demand management, sufficiency, conservation, sustainable alternative technologies and circular resource flow to be addressed by municipalities in terms of the provision of municipal services and the development of municipal infrastructure are crucial.

The MSA also makes it clear that "*a fundamental aspect of the new local government system is the active engagement of communities in the affairs of municipalities of which they are an integral part, and in particular in planning, service delivery and performance management*", with municipalities tasked with the duty to develop a "*culture of municipal governance that complements formal representative government with a system of participatory governance*" and to encourage the local community to "*participate in the preparation, implementation and review*" of the Municipal IDP.

The MSA also specifies that municipal planning must be "developmentally oriented" to ensure that municipalities achieve the objectives of local government, give effect to the developmental duties of municipalities and contribute to the progressive realisation of the fundamental rights contained in the Constitution. In the description

of the objectives of "developmentally oriented" municipal planning the MSA also refers to the principles contained in the Development Facilitation Act (Act No. 67 of 1995) ("DFA"), which include the need to promote "*the establishment of viable communities*", the "*sustained protection of the environment*" and development that "*meet the basic needs of all citizens*", while discouraging urban sprawl, contributing to more compact towns and cities and the correction of the "*historically distorted spatial patterns of settlement*", and encouraging "*environmentally sustainable land development practices and processes*".

According to the MSA an IDP adopted by the municipal council is "*the principal strategic planning instrument which guides and informs all planning and development, and all decisions with regard to planning, management and development, in the municipality*", with the plan to consist of "*a single, inclusive, strategic plan for the* [sustainable] *development of the municipality*" which "*links, integrates and co-ordinates plans and takes into account proposals for the development of the municipality*", "*aligns the resources and capacity of the municipality with the implementation of the plan*" and "*is compatible with national and provincial development plans and planning requirements binding on the municipality*".

The MSA also specifies that a Municipality's IDP must reflect the municipality's "*vision for the long term* [sustainable] *development of the municipality*", [sustainable] "*development priorities and objectives*" and must include "*an assessment of the existing level of development in the municipality*", the municipality's "*local economic development aims*", "development strategies", "*a spatial development framework which must include the provision of basic guidelines for a land use management system for the municipality*" and "*key performance indicators and performance targets*".

4.6. IDP Regulations

On 24 August 2001 the Local Government: Municipal Planning and Performance Management Regulations ("IDP Regulations") were promulgated in terms of Chapter

12 of the MSA (GN No. R. 796 in Government Gazette No. 22605 of 24 August 2001 refer) (Republic of South Africa, 2001). The IDP Regulations provide further detail on what must be included in a municipality's IDP, with Regulation 2(4) specifying that:

> *"A spatial development framework reflected in a municipality's integrated development plan must –*
> *(a) give effect to the principles contained in Chapter 1 of the Development Facilitation Act, 1995 (Act No. 67 of 1995);*
> *(b) set out objectives that reflect the desired spatial form of the municipality;*
> *(c) contain strategies and policies regarding the manner in which to achieve the objectives referred to in paragraph (b), which strategies and policies must –*
> *(i) indicate desired patterns of land use within the municipality;*
> *(ii) address the spatial reconstruction of the municipality; and*
> *(iii) provide strategic guidance in respect of the location and nature of development within the municipality;*
> *(d) set out basic guidelines for a land use management system in the municipality;*
> *(e) set out a capital investment framework for the municipality's development programs;*
> *(f) contain a strategic assessment of the environmental impact of the spatial development framework;*
> *(g) identify programs and projects for the development of land within the municipality;*
> *(h) be aligned with the spatial development frameworks reflected in the integrated development plans of neighbouring municipalities; and*
> *(i) provide a visual representation of the desired spatial form of the municipality, which representation -*
> *(i) must indicate where public and private land development and infrastructure investment should take place;*
> *(ii) must indicate desired or undesired utilisation of space in a particular area;*
> *(iii) may delineate the urban edge;*
> *(iv) must identify areas where strategic intervention is required; and*
> *(v) must indicate areas where priority spending is required.*"

Of significance is the requirement in terms of the IDP Regulations that the SDF, which forms an integral part of a Municipality's IDP, must contain a SEA, set out objectives that reflect the desired spatial form of and the desired patters of land use

within the municipality, and contain strategies, policies, programmes, actions plans and projects to achieve the objectives and implement the strategies. The IDP Regulations, however, fails to provide any further clarity on the exact requirements of the SEA or for the setting of the objectives that reflect the desired spatial form of and the desired patters of land use within the municipality, or the development of the strategies, policies, programmes, actions plans and projects to achieve the objectives and implement the strategies.

The principles contained in the earlier DFA (Republic of South Africa, 1995) do however provide some clarity when it highlights that some of the specific issues to address include the need to promote "*the establishment of viable communities*", the "*sustained protection of the environment*" and development that "*meet the basic needs of all citizens*", while discouraging urban sprawl, contributing to more compact towns and cities and the correction of the "*historically distorted spatial patterns of settlement*", and encouraging "*environmentally sustainable land development practices and processes*".

For further guidance on how to interpret and implement these specific requirements for SDFs, we again turn to the National Environmental Management Principles in term of NEMA, which serve as a "*guide for the interpretation, administration and implementation*" of NEMA, the NEMA EIA Regulations "*and any other law concerned with the protection or management of the environment*":

- Development planning must place people and their needs at the forefront of its concerns, and equitably serve their interests (section 2(2)).
- The desirable form and pattern of land use, is that form and pattern that are socially, environmentally and economically sustainable (section 2(3)).
- The development objectives, strategies, policies, programmes, actions plans and projects must "*anticipate and prevent, and where they cannot altogether prevent, minimise and remedy*" (section 2(4)(a)):
    - "*negative impacts on the environment and on people's environmental rights*",

- "*the disturbance of ecosystems and loss of biological diversity*", "*pollution and degradation of the environment*", and
- "*the disturbance of landscapes and sites that constitute the nation's cultural heritage*".

- The development objectives, strategies, policies, programmes, actions plans and projects must also be "*integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account" "the interests, needs and values of all interested and affected parties*" *"the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of"* "*the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term*" (section 2(4)(b)) with the environment to be "*held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage*" (section 2(4)(o)).

With regard to the requirement that IDPs and SDFs must adhere to the National Environmental Management Principles it is also significant to note that section 16(4) of NEMA states that:

> *"Each provincial government must ensure that-*
> *(a) the relevant provincial environmental implementation plan is complied with by each municipality within its province and for this purpose the provisions of subsections (2) and (3) must apply with the necessary changes; and*
> *(b) municipalities adhere to the relevant environmental implementation and management plans, and the principles contained in section 2 in the preparation of any policy, programme or plan, including the establishment of integrated development plans and land development objectives."*

4.7. SEA

With a SEA being seen as both a key component and informant of a municipal IDP and SDF, and with the MSA and IDP Regulations not providing much clarity on the specific requirements for a SEA, this aspect requires additional attention.

While the wording in the IDP Regulations state that the SDF reflected in a Municipality's IDP must "*contain a strategic assessment of the environmental impact of the spatial development framework*", and might create the impression that the assessment is reactively done at the end of the SDF process as opposed to the assessment having to inform the SDF process, the requirement that the SDF must also, *inter alia*, "*give effect to the principles contained in Chapter 1 of the Development Facilitation Act, 1995 (Act No. 67 of 1995)*" and "*provide strategic guidance in respect of the location and nature of* [sustainable] *development within the municipality*" must also be considered.

As mentioned earlier, the principles contained in the DFA highlights that some of the specific issues to address include the need to promote "*the establishment of viable communities*", the "*sustained protection of the environment*" and encouraging "*environmentally sustainable land development practices and processes*". Without an SEA done early in the process to inform the SDF and its strategies, it will also be impossible for the SDF to "*provide strategic guidance in respect of the location and nature of* [sustainable] *development within the municipality*".

SEA was specifically developed in response to the shortcomings of reactive project-level EIA, as a more strategic approach to environmental assessment (Vanclay, 2004: 271-272; Patel, 2008: 371). Although South Africa has yet to legislate specific procedures for undertaking SEA, South Africa has adopted SEA as a complementary IEM assessment tool to EIA (DEAT, 2004b), with SEA being defined as:

> "*as a process of integrating the concept of sustainability into strategic decision-making*" (DEAT, 2000: 9) and
>
> "*a structured, proactive process to strengthen the role of environmental issues in strategic decision making*" (Tonk & Verheen (1998) quoted in DEAT, 2000: 9).

SEA calls for the consideration of both the environmental constraints and opportunities, with the policy/programme/plan/decision's impact on the environment

and the environment's impact on the policy/programme/plan/decision to both be considered (DEAT, 2000). With SEA being better suited to address strategic issues, cumulative impacts, continues improvement, and fundamental alternatives; SEA provides a framework within which to formulate policies, programmes and plans, and make project-level EIA decisions (DEAT, 2004b; Retief, 2007: 86 & 89).

While in the year 2000 DEAT together with the Council for Science and Industrial Research ("CSIR") introduced the concept of and principles for SEA in South Africa with the publication of a *Guideline Document: Strategic Environmental Assessment in South Africa*, DEAT decided to provide further guidance on key elements of the SEA process and in 2007 published a *Strategic Environmental Assessment Guideline* (DEAT, 2007c). The 2007 guideline concluded that the fundamental elements of an effective SEA includes the formulation of a clear sustainable development vision, the defining of specific sustainability objectives and targets, and determining and applying limits of acceptable change against which to assess and evaluate strategic alternatives and possible outcomes. With the key elements of a SEA therefore to a large extent mirroring the elements of a SDF, it is clear why a SEA is a crucial component and vital informant of a SDF and an IDP.

The 2007 guideline distinguishes between three broad SEA approaches, namely an EIA-based model (which mimics project-level EIA), an integrated model (which aims to integrate SEA into policy or planning formulation processes) and a sustainability framework model (which is developed within a sustainability vision and objectives). While the guideline indicates that the integration model is seen as the most relevant model for use during the SDF and IDP process, I differ from this view. While I agree that the integration model might be the most readily accepted because it can easily be incorporated into the existing planning process, the integration model does not go far enough. The sustainability framework approach with its formulation of a sustainability vision, objectives, targets and indicators against which to assess the sustainability of different alternatives, is seen as the most appropriate SEA approach for use in a SDF and IDP process. The sustainability framework approach not only

integrates sustainability into the planning process as one of the aspects to consider, but establishes sustainability as the main consideration, with sustainability considerations fundamentally influencing the very vision and objectives – and therefore the outcomes – of the planning process.

Whereas the focus of project-level EIA too often is mainly on the constraints, problems and negative impacts to be overcome, solved and mitigated, the focus of SEA and IDP, while also focused on carrying-capacity restrictions, constraints, limits of acceptable change and solutions, are also on opportunities and alternative development paths and alternative programmes of action to achieve desired outcomes. Therefore, while EIA often only focus on that which is acceptable in order to survive, SEA and IDP are suppose to focus on that which is desirable in order to thrive.

4.8. IDP Process

While the MSA and the IDP Regulations are prescriptive with regards to the content requirements of an IDP and a SDF, the legislation is not very prescriptive on the actual IDP process to be followed. Section 29 of the MSA do, however, broadly provide for the process to allow for "*the local community to be consulted on its development needs and priorities*", for "*the local community to participate in*" and the "*organs of state*" and "*other role players*" to be "*consulted on*" "*the drafting of the integrated development plan*", and for alignment and consistency with the relevant District Municipality's Framework for IDP and "*all plans and planning requirements binding on the municipality in terms of national and provincial legislation*".

In 2001 the Department of Provincial and Local Government ("DPLG") published the *IDP Guideline Pack* (DPLG, 2001) consisting of an *General Overview* guide as well as the following 6 guides: *Guide I – General IDP guidelines*; *Guide II – Preparing for the IDP process*; *Guide III – IDP methodology*; *Guide IV – IDP Toolbox*; *Guide V – Sectoral and cross-cutting policy issues*; and *Guide VI – Implementation and Monitoring*.

In terms of the IDP process to be followed the following phases have been proposed as part of the IDP methodology (DPLG, 2001; DEAT, 2007c; Venter, 2007):

4.8.1. Phase 0 - Preparation

During this phase the different roles and responsibilities must be clarified and a process plan designed that must include stakeholder participation procedures. The relevant policies and legislation must also be identified and national and provincial stakeholders and departments engaged with in order to ensure alignment. During this phase a budget is also developed for the planning process. A SEA will be able to provide valuable input during this phase in terms of the time and space boundaries to consider, the planning and policy context to be considered, and input on issues of consistency with applicable legislation, policies, strategies, plans and programmes.

4.8.2. Phase 1 - Analysis

During this phase the existing situation within the municipality must be analysed with a specific focused analysis of the "*development needs and priorities* "of the local community. The development needs and priorities must also be weighed based on importance and urgency. Development problems must be analysed in terms of their symptoms, causes, dynamics and alternatives for not only their mitigation and treatment, but also alternatives in terms of problem prevention and solution. Stakeholder and community participation are, therefore, critical in the analysis phase.

The 2001 guideline document on *Strengthening Sustainability in the Integrated Development Planning Process* (DEAT, 2001) DEAT together with the CSIR highlight that during the Analysis Phase the existing economic, social and biophysical resources should be analysed in terms of the resources either constraining or providing opportunities for development. They further highlight the need to consider how the maintenance and enhancement of these resources might be influenced and affected by alternative trends, institutions, policies, strategies, programmes and projects. A SEA will also be able to provide valuable information during this phase in

terms of the environmental status quo, resource constraints and opportunities and limits of acceptable change.

4.8.3. Phase 2 – Strategies

Cognisant of the development needs and priorities of the local community and the constraints to and opportunities for development in the municipal area, the next step in the process is the identification and consideration of alternative options to meet the development needs of the local community and to address their development priorities and problems. Very importantly the alternatives must not just mitigate and treat symptoms, but must also address the causes, with alternatives to be explored and sought that will prevent and solve problems.

During this phase the sustainable development vision, objectives and targets of the municipality should also be formulated. While the *IDP Guide Pack* expresses the view that the vision should be "*the situation the municipality would find itself in once it has addressed the problems*" identified in the Analysis Phase, I differ from this view. In this regard, the approach adopted in the *IDP Guide Pack* is too reactive in nature with the main focus being on problems. As a planning methodology, IDP should be more pro-active and forward looking in approach, and while also focused on carrying-capacity restrictions, constraints, limits of acceptable change, must specifically also focus on opportunities and alternative development paths and alternative programmes of action to achieve desired outcomes – focusing on that which is desirable in order to thrive (i.e. to overcome problems in the long-term) and not only on what is acceptable in order to simply survive (i.e. temporary relief from problems).

Once the sustainable development vision, objectives and targets have been determined, the different opportunities and alternative development strategies to realise the vision, achieve the desired objectives and meet the targets, must be considered. The formulation of strategies calls for a strategic evaluation of the alternative options available and strategic decisions on the most appropriate and sustainable ways and means to move towards the realisation of the vision and

achievement of the objectives and targets. Once the strategies have been decided the alternative programmes, projects and plans of action to give effect to the strategies must be assessed and formulated. Consequently, stakeholder and community participation are also critical during the strategies phase.

The 2001 guideline document on *Strengthening Sustainability in the Integrated Development Planning Process* highlights the need for the municipality's vision and objectives to consider the concept of sustainable development and specifically the reality of carrying capacity restrictions, limits of acceptable change and the challenge of intra- and intergenerational equity. The guideline document therefore calls for the objectives to be evaluated against an agreed set of sustainable development principles with the limits of acceptable change to be specifically considered. With the MSA defining all development as "sustainable development" and with the National Environmental Management Principles of NEMA being applicable to all municipalities and their IDP processes, the guideline's call for the concept of sustainable development to simply be considered and for the objectives to be evaluated against some other set of sustainable development principles still to be agreed, are considered to be ill informed and misleading.

Sustainability cannot simply to be integrated into the planning process as one of the aspects to consider. Sustainable development is the main consideration in terms of it being both the means to and the end that must be achieved. Sustainable development must therefore fundamentally influence the very vision and objectives – and therefore the outcomes – of the planning process. The National Environmental Management Principles of NEMA must guide the interpretation, administration and implementation of the MSA, IDP Regulations and the IDP and SDF processes.

I do, however, agree with the 2001 guideline document on *Strengthening Sustainability in the Integrated Development Planning Process* when it highlights the fundamental importance of considering alternative ends, ways and means, and the need for clear and appropriate sustainability criteria against which to comparatively

assess the different alternatives, with a SEA to provide the required information in this regard.

4.8.4. Phase 3 – Projects

Once the strategies have been decided the alternative programmes, projects and plans of action to give effect to the strategies are assessed and formulated. Phase 3 specifically deals with the design and specification of the different implementation projects. Again the consideration of alternatives is a crucial aspect of this phase in that a number of different project designs and specifications might be available. During this phase the alternative projects whose design and specifications will best result in the implementation of the strategies, and the realisation of the vision and achievement of the objectives and targets, must be determined.

The *IDP Guide Pack* is also clear that the projects must have direct linkages with the development needs and priorities of the local community, with each project's target group, area, timeframes, costs, responsibilities and outcomes to be specified. Specific indicators to measure the performance of the project against the intended project outcomes and targets are also to be formulated. With alignment and complimentarity of the plans, programmes, projects and actions of the different organs of state being a key requirement, and with civil society and the private sector to become partners in the implementation and delivery process, stakeholder and community participation are also critical during the project phase.

The 2001 guideline document on *Strengthening Sustainability in the Integrated Development Planning Process* highlights the importance of formulating appropriate sustainability criteria against which to comparatively assess the different project alternatives, and for project indicators to specifically consider carrying capacity restriction and limits of acceptable change. The need for specific thresholds to be determined, that should act as triggers for corrective action when carrying capacity restrictions and limits of acceptable change are being approached is also highlighted.

The identification of environmental constraints and opportunities by a SEA should also play an important role in terms of informing the projects to be considered.

4.8.5. Phase 4 - Integration

During the integration phase the different projects must be evaluated to ensure alignment with the sustainable development vision, objectives, targets and strategies of the municipality as well as with the other organs of state's plans, programmes and projects. During the integration phase projects are also checked for alignment with the municipality's resource framework and for adherence to the applicable legislative requirements, with projects to be harmonised to formulate integrated and consolidated implementation programmes.

Again the 2001 guideline document on *Strengthening Sustainability in the Integrated Development Planning Process* highlights the importance of formulating appropriate sustainability criteria against which to screen the different project alternatives. In this regard a SEA provides the sustainability criteria to be considered, allows for comparative assess of the impacts that alternative projects are likely to have, and assists with the formulation of mitigation and management measures that should be considered.

4.8.6. Phase 5 - Approval

Once the analysis, strategies, projects and integration phases have been completed, the draft IDP must be submitted for consideration and approval to the municipal council. According to the *IDP Guide Pack* the council must ensure that the draft IDP adequately identified the priority issues and problems of the municipal area, that adequate strategies and projects have been formulated to address the problems, that all the legal requirements have been met, and must ensure that the public is afforded an opportunity to comment on the draft IDP.

While the MSA does not require the Member of the Provincial Executive Council ("MEC") for local government in the province to "approve" a Municipality's IDP, the MSA does provide for a copy of a Municipality's adopted IDP to be submitted to the

MEC. The MEC may request the municipality to adjust the plan because it does not comply with the MSA, or if the plan does not align or is in conflict with any plans, programmes, strategies or projects of other organs of state or other affected municipalities. If the municipality objects to the adjustments proposed by the MEC, the MEC may refer the objection to an *ad hoc* committee who will decide on the objection. If the committee rejects the municipality's objection, the municipality must comply with the MEC's request.

4.8.7. Annual Review

Monitoring and performance evaluation is, however, crucial with insights gained to be used to revise relevant sections of the Plan where needed. In this regard, SEA and State of the Environment Reporting can both provide valuable information to the review process.

In light of the above discussion of the IDP process and all the different phases of the IDP methodology, it is clear that the consideration of alternatives is a fundamental consideration during every phase of the IDP process, and specifically during the formulation of the SDF and the undertaking of the required SEA. Very importantly, the alternatives must not just mitigate and treat symptoms, but must also address the causes, with alternatives to be explored that will prevent and solve problems.

4.9. IDP and Freedom

IDP is therefore not about the production of a static "business-as-usual" plan, but rather about the exploration of alternatives and the formulation and implementation of a programme of action to achieve reconstruction, redistribution, reconciliation, and sustainable development, in order to fundamentally transform the South African society and improve the quality of life for all (Cameron, 1999; Claassen, 2002: 4; Craythorne, 2006: 306). In this regard I, however, want to reiterate that while specific sustainable development goals and objectives might be set, sustainable development is not simply another issue to be addressed or goal to be achieved, but rather the

process (the means) through which to explore alternatives ways to achieve all our goals and objectives now and in the future (Callway, 2005: 13).

> "*Despite the miracle of South Africa's political transformation, the majority of its rainbow people still face undesirable living conditions and have to contend with a wide range of development problems such as poverty and joblessness, unsafe and unhealthy living and working environments, crime and the scourge of HIV/Aids, to name a few*." (Coetzee, 2002: 1)

> *"Endemic and widespread poverty continues to disfigure the face of our country. It will always be impossible for us to say that we have fully restored the dignity of all our people as long as this situation persists..."* (Mbeki, 2004)

Considering the South African context and the specific goals and objectives to be achieved by development planning in South Africa, Amartya Sen's (2000) view of "development as freedom" is of specific relevance to South Africa. Sen argues that development is "*a process of expanding the real freedoms that people enjoy*" (2000: 3), with growth in GDP or per capita income simply being means to expanding the freedoms of (some members of) a society.

Sen argues that "[v]*iewing development in terms of expanding substantive freedoms directs attention to the ends that make development important, rather than merely to some of the means, that, inter alia, play a prominent part in the process*" (2000: 3). According to Sen, development should therefore address the removal of the main "sources of unfreedom". Poverty and a lack of resources to meet basic needs, inequality, the lack of opportunities and services, the lack of education, an unsafe and unhealthy environment and ecological degradation, are just some of the "sources of unfreedom" in post-Apartheid South Africa that IDP must address.

4.10. Conclusion

The consideration of alternatives is, therefore, seen as the "heart" and "soul" of both EIA and IDP. The consideration of alternatives, specifically during planning, shifts the focus from problems to solutions – focusing on what could and should be done to

achieve (or at least contribute most to the achievement of) the desired aim/goal for a specific area. EIA and IDP can never be, and was never supposed to be completely separate processes.

EIA and IDP are both about the exploration of alternative options in the pursuit of sustainable development. While EIA reactively and incrementally shape and generate development alternatives, IDP is about the pro-active consideration of fundamental alternatives and the formulation of a programme of action (consisting of a combination of the most sustainable alternatives) to achieve positive change – to achieve sustainable development.

Properly informed SEA-based IDPs and SDFs, refined by EMFs, should therefore provide the strategic context and decision-making framework for the consideration of need, desirability and alternatives; with the actual and potential socio-economic and ecological impacts of a specific proposal to be considered during the project-level EIA. Improved integration and convergence of planning and EIA considerations and practice is therefore paramount to the pursuit of sustainable development.

The true test of the effectiveness of policy and theory, however, lies in its implementation. While the theory, legislative and policy frameworks provides an indication of what should be considered and achieved, the actual practice of EIA and IDP, and specifically how EIA and IDP are considering fundamental alternatives in order to contribute to the process of social and ecological redress in South Africa, requires specific attention.

In Chapter 5 and 6, which follows, the findings of the literature review, theoretical analysis and policy analysis will, therefore, be used to generate the research questions for the undertaking of a content analysis and survey of a sample of EIAs and IDPs undertaken and produced in the Western Cape Province of South Africa. The analysis will critically analyse the policy implementation during the practice of EIA and IDP, and will specifically focus on the consideration of alternatives.

CHAPTER 5. THE PRACTICE OF ENVIRONMENTAL IMPACT ASSESSMENT IN SOUTH AFRICA

5.1. Introduction

The true test of the effectiveness of EIA theory, policy and legislation lies in its implementation. In this Chapter the findings of the literature review, theoretical analysis and policy analysis in the previous Chapters are used to generate the research questions for the undertaking of a content analysis and survey of a sample of EIAs undertaken in the Western Cape Province of South Africa.

The analysis critically considers the policy implementation during the practice of EIA in terms of the ECA EIA Regulations as well as the practice in terms of the NEMA EIA Regulations, and specifically critically reflects on the consideration of alternatives. The consideration of alternatives during the practice of EIA in terms of the NEMA EIA Regulations are also compared with the practice in terms of the ECA EIA Regulations, in order to reflect on how the practice have change with the implementation of the legislative reforms.

5.2. Methodology and Research Questions

Runhaar, Dieperink and Driessen (2006: 36) states that "[m]*ethods, in general terms, are ways to find answers to questions"*. While the search for answers is important, asking the right questions is, however, just as important (Courtney, Richardson & Paradice, 2004: 274; Kraft & Furlong, 2007: 109). With the South African legislation aligned with international best practice, I support the method used by both Lee (2000: 139-140) and Sandham and Pretorius (2008: 232-234) that assess the practice of EIA in terms of adherence to regulatory and procedural requirements. The *Lee-Colley Review Package* used by Lee (2000: 139-140), Simpson (2001: 86-87) and Sandham and Pretorius (2008: 232-234) evaluates the quality of EIAs in terms of how well a number of assessment tasks have been performed, with the package grouping the tasks hierarchically into sub-categories, categories and areas. With the package not specifically focussed on the evaluation of how well alternatives were

considered during the EIA process, the consideration of alternatives in the review was not considered adequate for use in my analysis. Specifically in terms of the South African legislative and procedural requirements for the consideration of alternatives during EIA, their method of assessment of the consideration of alternative was considered not comprehensive enough in terms of its analysis of only:

- the methods used to identify alternatives;
- the range of alternatives considered;
- the number of feasible alternatives considered (the consideration of at least 2 alternatives regarded by them as sufficient);
- the consideration of the environmental implications of the different alternatives; and
- the reasons for the final choice of alternatives.

Based on the theory of EIA as well as the legislative and procedural requirements for the consideration of alternatives, the review package was therefore supplemented by also specifically considering:

- how alternatives were considering during the different stages of the EIA process and specifically the "depth" of consideration given to alternatives;
- the methods and criteria used to identify, screen, scope and comparatively assess alternatives, and specifically the consideration given to both environmental constraints and opportunities;
- the "general purpose and requirements of the activity" as well as "need and desirability";
- how public participation influenced the consideration of alternatives; and
- whether fundamental alternatives were generated and considered during the EIA process or whether the EIA process only "fine-tuned" the original development proposal.

From the findings of the literature review and theoretical analysis, together with the findings of the policy analysis in the previous Chapters, the following research

questions were used for the content analysis and survey of a random sample of EIAs undertaken in the Western Cape Province of South Africa:

- Were alternatives considered?
- Was exemption granted from the requirement to consider alternatives?
- What types of alternatives were considered?
- Were alternatives adequately considered during the different stages of the process?
- What were the methods and criteria used to identify, screen, scope and comparatively assess alternatives?
- Was consideration given to the "general purpose and requirements of the activity"?
- Was "need and desirability" considered?
- What influence (if any) did the public participation/stakeholder engagement process have on the consideration of alternatives?
- Did the EIA result in the generation of fundamental alternatives or simply in modest "fine-tuning" of the original proposal?

5.3. Sampling

An analysis of the DEA&DP's application database (a Microsoft Access "electronic register" containing application histories) found that in the Western Cape Province:

- approximately 5520 EIAs were finalised in terms of the ECA EIA Regulations between 5 September 1997 and 3 July 2008; and
- approximately 345 EIAs were finalised in terms of the NEMA EIA Regulations between 3 July 2006 and 3 July 2008.

Together with the 1489 EIAs that were withdrawn, this is a total of 7354 EIAs over a period of approximately 11 years and on average approximately 669 EIAs per year.

Of the 5520 EIAs completed in terms of ECA, approximately 4342 (~78%) resulted in environmental authorisation being issued, 1048 (~20%) resulted in the granting of

exemption from having to obtain environmental authorisation, and 130 (~2%) resulted in environmental authorisation being refused. **Chart 1** below shows these results.

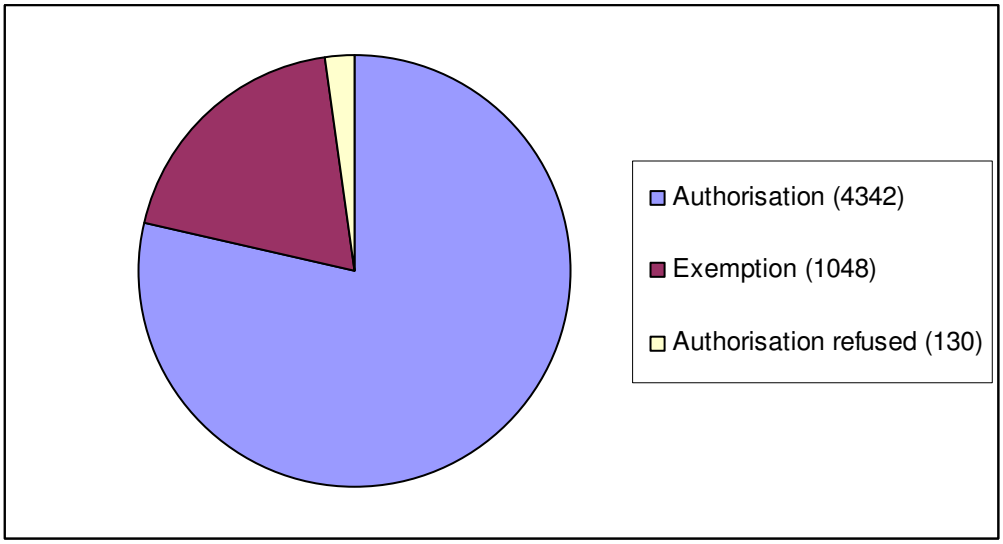

Chart 1. Outcome of the EIAs completed in terms of ECA.

All 345 EIAs completed in terms of NEMA (100%) resulted in environmental authorisation being issued.

It is, however, important to note that many EIAs are never completed due to environmental constraints and other fatal flaws discovered through the EIA, the applicant deciding to not proceed with the proposed development, or the application considered as withdrawn or lapsed due to long delays. While approximately 5520 EIAs were completed in terms of ECA, approximately 1281 (~20%) were withdrawn (see **Chart 2** below). In terms of NEMA approximately 345 EIAs were completed and approximately 208 (~40%) withdrawn (see **Chart 3** below).

The higher percentage of EIA "withdrawn" in terms of NEMA is largely the result of the NEMA EIA Regulations specifying that if an applicant for a period of six months fails to adhere to the requirements of the legislation (i.e. to undertake a specific step in the process or not submit outstanding information), the application automatically "lapses" (Regulation 77 of GN No. R. 385 refers).

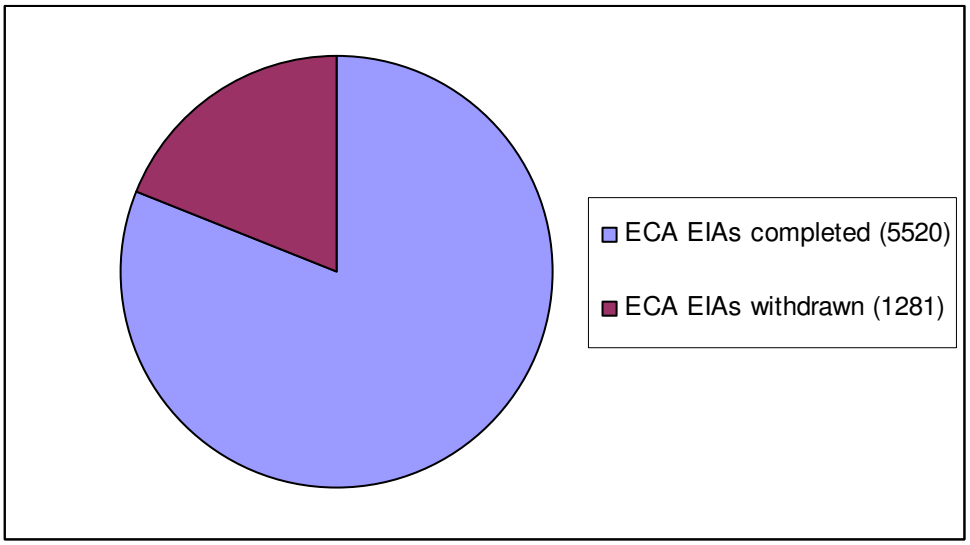

Chart 2. EIAs completed and withdrawn in terms of ECA.

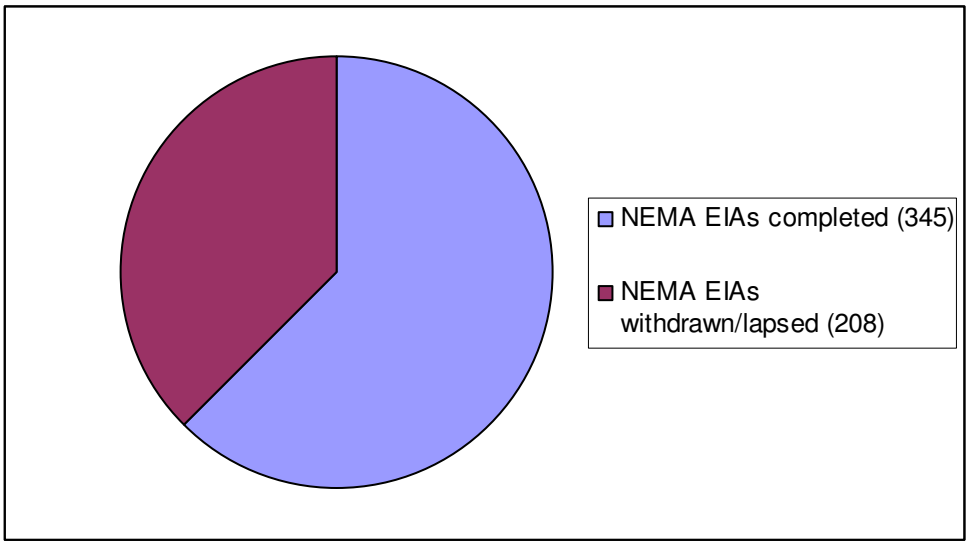

Chart 3. EIAs completed and withdrawn/lapsed in terms of NEMA.

In order to gain a broad understanding of the actual practice of EIA in the Western Cape Province, the DEA&DP's application database was used to select a random sample of 300 EIAs undertaken in terms of the ECA EIA Regulations and 66 EIAs undertaken in terms of the NEMA EIA Regulations. This sample represents approximately 5% of the EIAs completed in terms of the ECA EIA Regulations and

20% of the EIAs completed in terms of the NEMA EIA Regulations. A larger sample of the EIAs completed in terms of the NEMA EIA Regulations was specifically analysed in order to gain a better understanding of EIA practice in terms of the latest legislative requirements.

5.4. Findings

5.4.1. Types of Alternatives considered (if at all).

The EIAs were analysed to determine whether alternatives were considered, and if so, which of the following types of alternatives were considered: activity, property/location, layout, design, technology, operational aspects, and the no-go option.

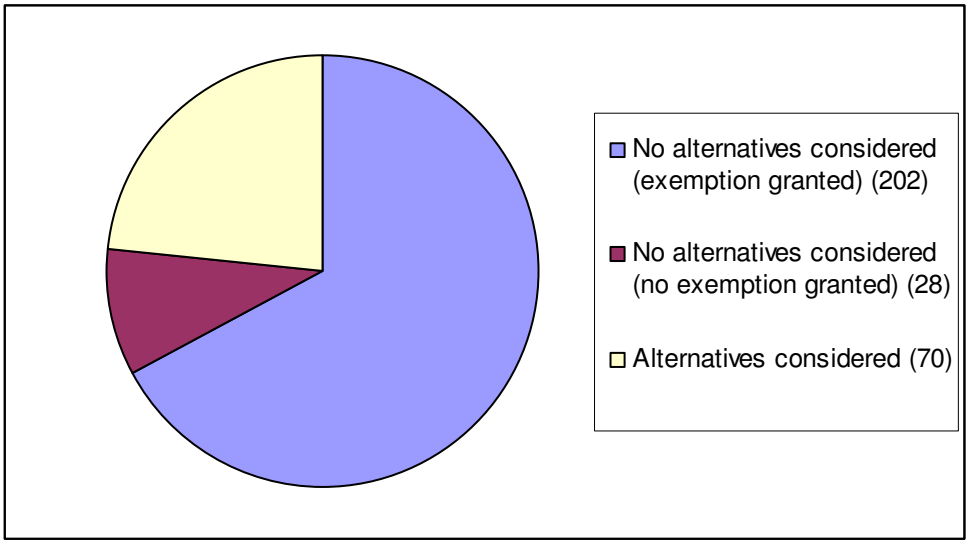

Chart 4. The consideration of alternatives during ECA EIAs.

Of the 300 ECA EIAs analysed, only 70 (~25%) considered alternatives (see **Chart 4** above), 16 (~5%) considered the no-go option; 9 (~5%) considered activity alternatives, 25 (~10%) considered property/site alternatives, 47 (~15%) considered layout alternatives, 39 (~15%) considered design alternatives, 5 (~2%) considered technology alternatives, and 4 (~1%) considered operational alternatives (see **Chart 5** below).

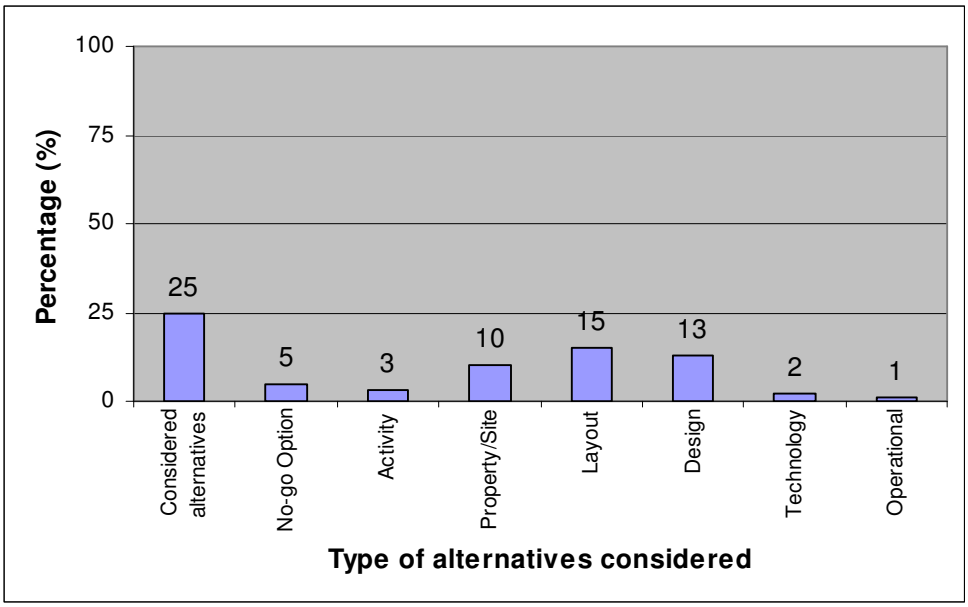

Chart 5. The types of alternatives considered during ECA EIAs.

Of the 66 NEMA EIAs analysed, 57 (~85%) considered alternatives (see **Chart 6** below), 57 (~85%) considered the no-go option; 8 (~10%) considered activity alternatives, 19 (~30%) considered property/site alternatives, 44 (~65%) considered layout alternatives, 37 (~55%) considered design alternatives, 16 (~25%) considered technology alternatives, and 3 (~5%) considered operational alternatives (see **Chart 7** below).

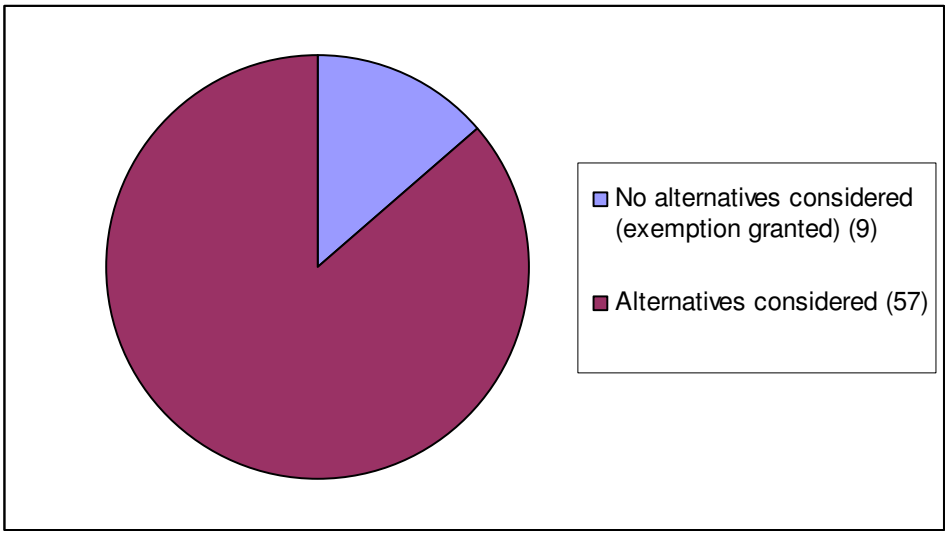

Chart 6. The consideration of alternatives during NEMA EIAs.

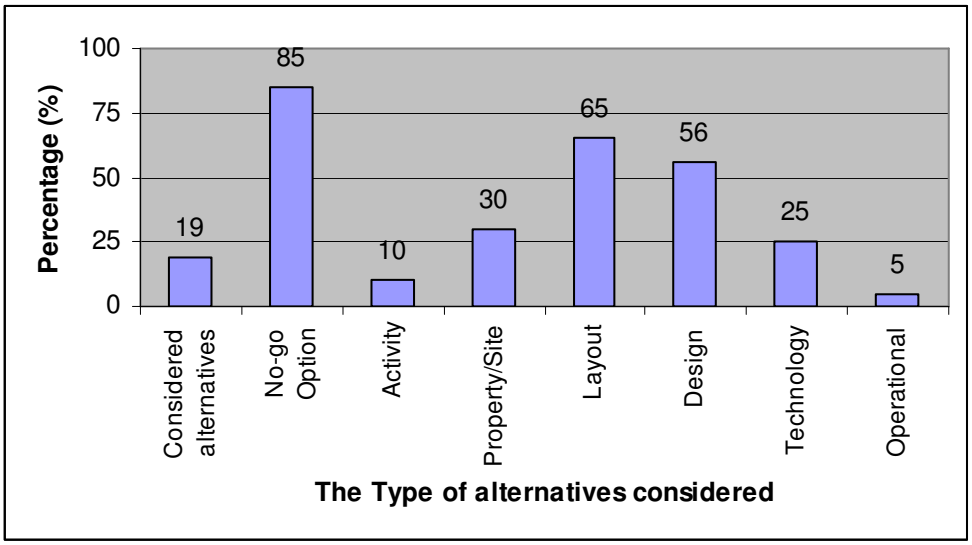

Chart 7. The types of alternatives considered during NEMA EIAs.

Chart 8 below compares EIAs undertaken in terms of ECA with EIAs undertaken in terms of NEMA in terms of the consideration of alternatives.

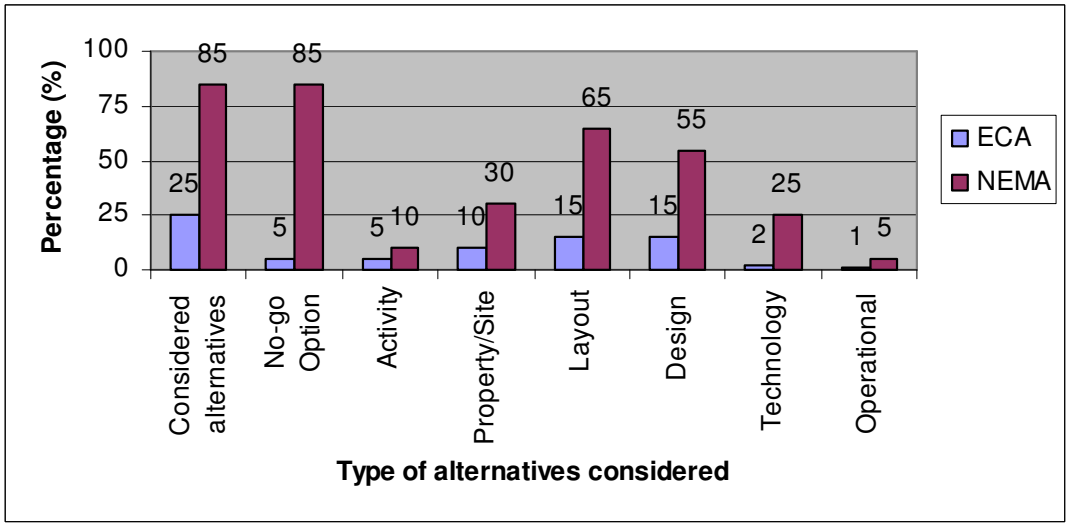

Chart 8. The types of alternatives considered during ECA and NEMA EIAs.

From this chart it is clear that there is a significant increase (240%) in the percentage of NEMA EIAs that did consider alternatives when compared to the percentage of ECA EIAs that did consider alternatives, as well as a significant increase in terms of the consideration of the different types of alternatives. The consideration of the no-go

option increased by ~1600%, activity alternatives by ~100%, property/site alternatives by ~200%, layout alternatives by ~330%, design alternatives by ~270%, technology alternatives by ~1150%, and the consideration of operational alternatives by ~400%.

The improved consideration of alternatives in terms of NEMA is a direct result of the specific requirements in terms of NEMA and NEMA EIA Regulations to consider alternatives, as well as the Western Cape Department of Environmental Affairs and Development Planning's *Guideline on Alternatives* (first edition – June 2006; second edition – September 2007) (DEA&DP, 2006; DEA&DP, 2007) which provided guidance on the legislative requirements for the consideration of alternatives. In this regard it is significant to note, that in spite of the specific requirements in terms of NEMA and the NEMA EIA Regulations to consider alternatives, the Department considered the majority of the EIA report to not adequately have considered alternatives, and therefore had to refer applicants and their Environmental Assessment Practitioners to the Department's *Guideline on Alternatives*, and request additional information on the consideration of alternative to be submitted. As the practitioners became more familiar with the new legislative provisions as well as the Department's requirements (and probably also as a result of additional guidance being given in the updated version of the guideline) the consideration of alternatives did improve. It is, however, a cause for concern that, while less exemptions from the requirement to consider alternatives were granted (~65% in terms of ECA), in ~15% of the EIA processes exemption were still granted.

While the very high increase in the consideration of the no-go option (~1600%) and technology alternatives (~1150) were due to better descriptions/reasons provided for why the development should go ahead and for the technology being considered, and other alternatives (e.g. layout and design) simply required better reporting on adjustments made to the development during the EIA process, it is, however, disappointing that while the consideration of the two fundamental alternatives,

namely activity and property/site alternatives, have improved, the consideration of these alternatives still remain relatively low at ~15% and ~35% respectively.

Even when considering the fact that 26 of the 66 (~40%) NEMA EIAs analysed entailed upgrading of existing facilities, for which the consideration of activity alternatives and property/site alternatives would therefore in many instances not be feasible or reasonable, it still means that the consideration of activity and property/site alternatives could have been ~300% and ~70% higher respectively.

In this regard it is interesting that, when comparing only the ECA and NEMA EIAs that did consider alternatives, the type of alternatives considered during ECA and NEMA EIAs did not really differ, except for the consideration of technology alternatives and the no-go option (see **Chart 9** below).

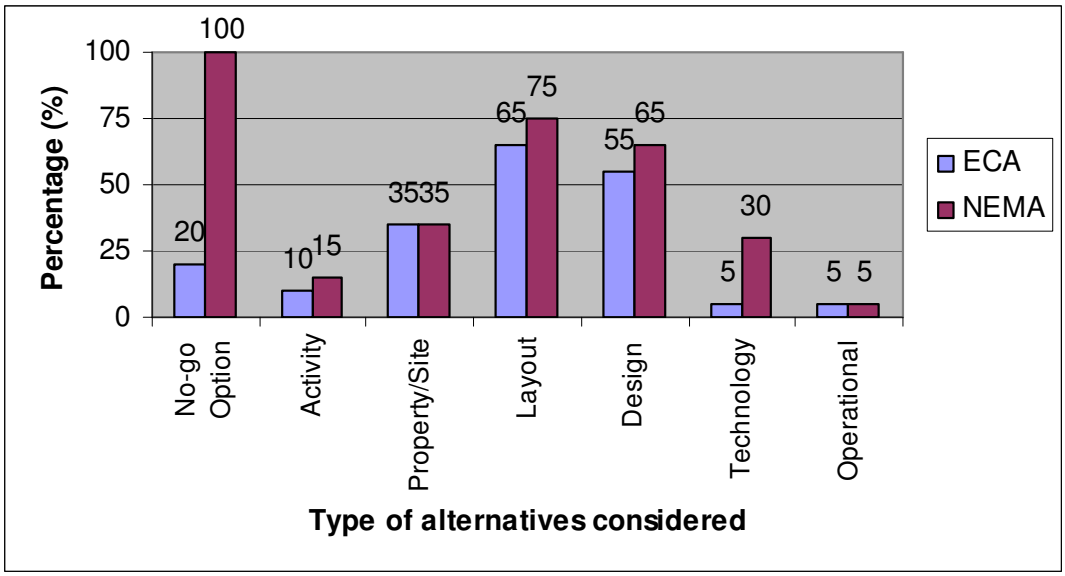

Chart 9. Comparison between ECA and NEMA EIAs that did consider alternatives in terms of the types of alternatives considered.

Of the 70 ECA EIA that did consider alternatives, 16 (~20%) considered the no-go option; 9 (~10%) considered activity alternatives, 25 (~35%) considered property/site alternatives, 47 (~65%) considered layout alternatives, 39 (~55%) considered design alternatives, 5 (~5%) considered technology alternatives, and 4 (~5%) considered operational alternatives. Of the 57 NEMA EIAs that did consider alternatives, 57

(100%) considered the no-go option; 8 (~15%) considered activity alternatives, 19 (~35%) considered property/site alternatives, 44 (~75%) considered layout alternatives, 37 (~65%) considered design alternatives, 16 (~30%) considered technology alternatives, and 3 (~5%) considered operational alternatives.

5.4.2. Consideration of Alternatives during the different stages of the EIA process.

While it is important to consider whether alternatives were considered or not, the "depth" of the consideration given to alternatives is, however, just as important. The EIAs were therefore also analysed in terms the different stages during which alternatives were considered, looking at whether or not alternatives were simply briefly "screened" prior to the EIA process or broadly "scoped" during the EIA process, or whether in fact alternatives were thoroughly assessed, with a comparative assessment of the alternatives undertaken during the EIA process.

"Pre-application screening" is defined as (DEAT, 2002b: 10):

> *"(…) the process by which key environmental issues associated with a proposed development are anticipated at the earliest opportunity, and are considered as an integral part of pre-feasibility investigations. Here questions pertaining to the need for, and desirability of the proposal must be considered, and issues such as technology and location alternatives should be appraised at an appropriate level of detail. Significant environmental impacts also have to be anticipated, and mitigation options accommodated in initial development designs. It is a process that often takes the form of a preliminary evaluation (...)".*

"Scoping" is defined as (DEAT, 2002a:

> *"The process of determining the spatial and temporal boundaries (i.e. extent) and key issues to be addressed in an environmental assessment. The main purpose of scoping is to focus the environmental assessment on a manageable number of important questions. Scoping should also ensure that only significant issues and reasonable alternatives are examined."*

With pre-application screening the alternatives are mostly considered by the applicant him/herself with interested and affected parties not participating in the screening process. The applicant simply "screens out" certain alternatives as being "unreasonable", and only includes what the applicant considers to be "reasonable" alternatives as part of the application. With scoping the alternatives are broadly considered by the applicant and Environmental Assessment Practitioner and interested and affected parties are afforded an opportunity to participate, with many alternatives "scoped out" as being "unreasonable", and only those alternatives considered "reasonable" taken forward into the EIA process for further consideration.

The results of the analysis of the "depth" of the consideration given to alternatives are shown in **Chart 10** and **Chart 11** below.

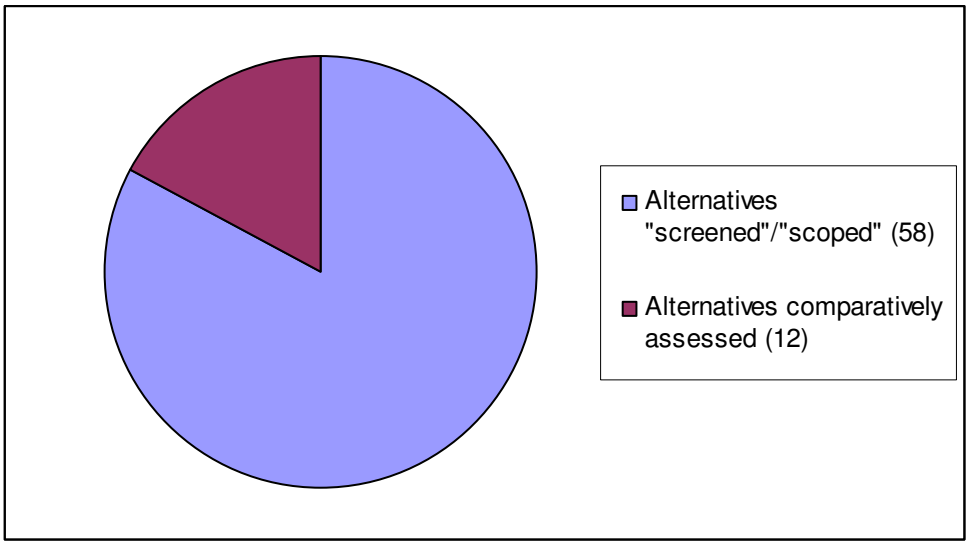

Chart 10. The "depth" of consideration given to alternatives during ECA EIAs.

While 70 of the 300 ECA EIAs analysed (~25%) considered alternatives, only 12 (representing ~15% of the 70 EIAs that did consider alternatives and ~4% of the 300 ECA EIAs analysed) did a comparative assessment of alternatives, while the remaining 58 (representing ~85% of the 70 EIAs that did consider alternatives and ~96% of the 300 ECA EIAs analysed) merely briefly "screened" or "scoped" alternatives.

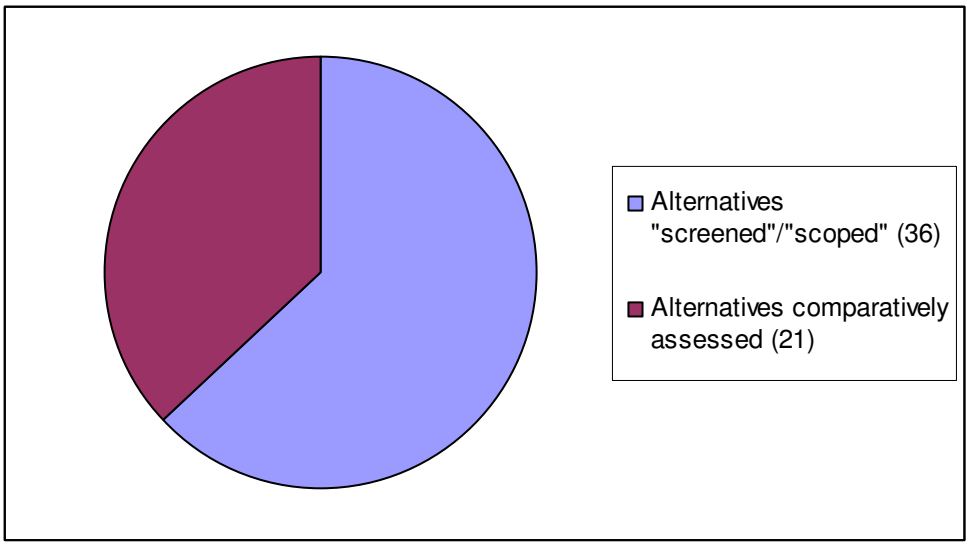

Chart 11. The "depth" of consideration given to alternatives during NEMA EIAs.

While 57 of the 66 NEMA EIAs analysed (~85%) considered alternatives, only 21 (representing ~35% of the 57 EIAs that did consider alternatives and ~30% of the 66 NEMA EIAs analysed) did a comparative assessment of alternatives. The remaining 36 (representing ~65% of the 57 EIAs that did consider alternatives and ~55% of the 66 NEMA EIAs analysed) merely briefly "screened" or "scoped" alternatives. Again considering the fact that 26 of the 66 (~40%) NEMA EIAs analysed entailed upgrading of existing facilities, for which the range of feasible or reasonable alternatives might be limited, it means that the number of EIAs that could reasonably have comparatively assessed alternatives could have been at least ~10% higher.

The "depth" of the consideration given to the no-go option was particularly poor, with most the EIAs that did consider the no-go option either using the existing poor land management practices as motivation why the proposed development, which will supposedly improve the management of the property, should be approved, or only considering the positive impacts associated with the proposed development that the no-go option will not be providing. In spite of the fact that the legislation specifically also refers to the no-go option as a mitigation measure and calls for the pursuit of the option that causes the most benefits and the least harm, the consideration of opportunity costs and the no-go option did not receive enough attention.

5.4.3. Method and criteria used to identify, screen, scope and comparatively assess alternatives.

While the legislation and guidelines call for a description of the method and criteria used to consider alternatives, most of the EIAs analysed, failed to specifically report on the method and criteria used. With the legislation requiring that the consideration of alternative "*must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option*", with the "*best practicable environmental option*" defined as "*the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term*", the EIAs were, however, specifically analysed to determine whether ecological, social and economic factors were used to inform the consideration of alternatives. The results are shown in **Chart 12** and **Chart 13** below.

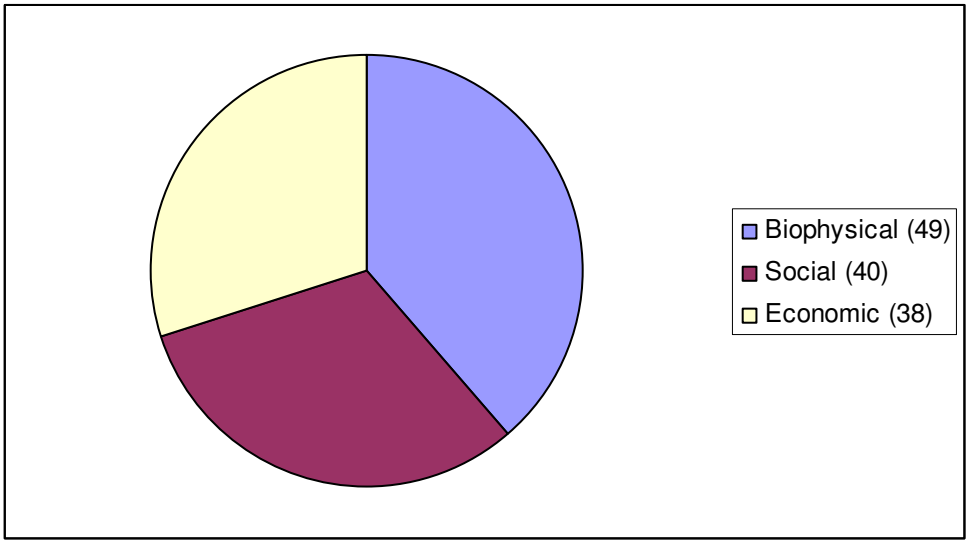

Chart 12. The criteria used during the consideration of alternatives during ECA EIAs.

While the analysis found that for both ECA and NEMA EIAs the criteria used were usually not clear, an analysis of the factors considered found that the biophysical, social and economic aspects were considered an almost equal percentage of times.

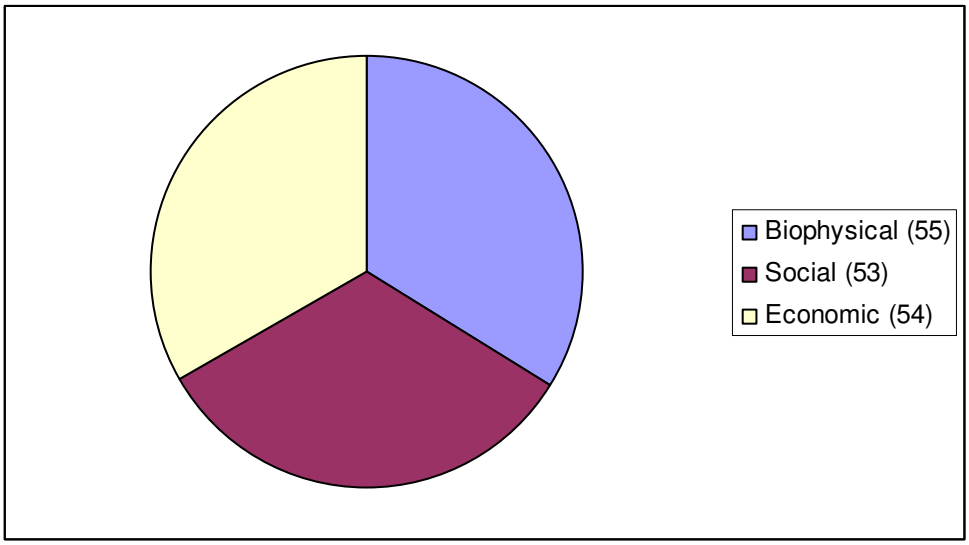

Chart 13. The criteria used during the consideration of alternatives during NEMA EIAs.

It is, however, important to note that while biophysical constraints and the need for impact mitigation informed the consideration of alternatives, and some motivation with regards to social and economic benefits (mostly in the form of job creation) were provided as reasons for the consideration of the no-go option not being preferred, hardly any of the EIAs adequately considered opportunity costs and the enhancement of benefits. Most of the EIAs only responded to constraints with impact mitigation measures. The results of the analysis of whether only constraints were considered, or both constraints and opportunities, are shown in **Chart 14** below.

It is very worrying that EIAs for the most part therefore seem to primarily be concerned with environmental constraints and impact mitigation, with opportunities only being considered during 13 of the ECA EIAs (representing ~20% of the 70 EIAs that did consider alternatives and ~5% of the 300 ECA EIAs analysed) and during 4 of the NEMA EIAs (representing ~7% of the 57 EIAs that did consider alternatives and ~5% of the 66 NEMA EIAs analysed). It would, therefore, seem that the main "criterion" for the consideration of alternatives, and indeed for granting environmental authorisation, is whether or not the negative impacts associated with the development, have been mitigated to "acceptable" levels.

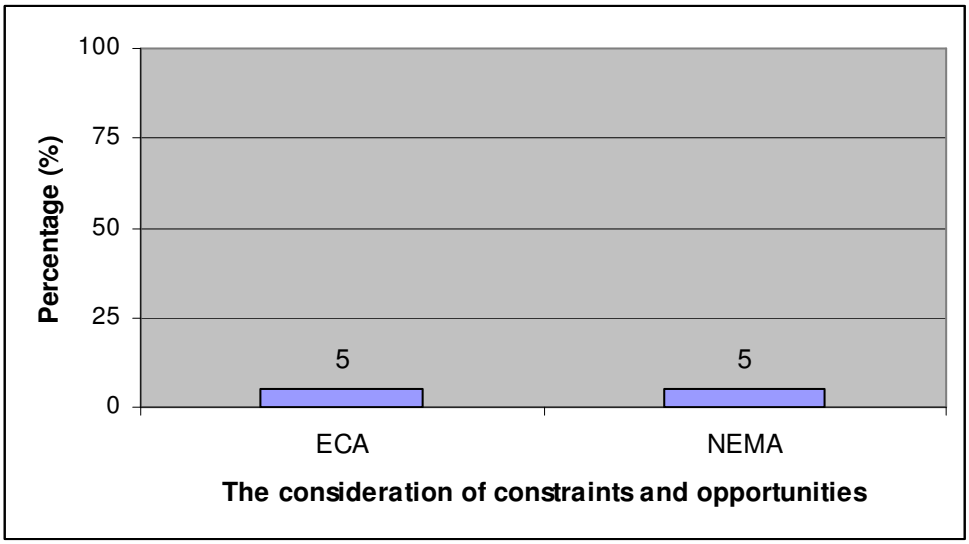

Chart 14. The consideration of constraints and opportunities during the consideration of alternatives during ECA and NEMA EIAs.

While most of the EIAs considered the "general purpose and requirements" of the development, this was mostly very narrowly defined/discussed, with very little information provided in this regard. The same was found in terms of the consideration of "need and desirability", where most of the EIAs broadly touched on "need and desirability", but mostly did so in terms of the "needs and desires" of the applicant; failing to adequately consider the strategic context and the "needs and desires" of the community as reflected in the planning documents for the area. The exception were the EIA applications submitted by Municipalities, which adequately (although briefly) discussed the broader societal needs and planning considerations, and EIAs for cellular communication infrastructure which always touched on the local community's need for improved cellular telephone reception.

5.4.4. Influence (if any) of public participation on the consideration of alternatives.

The analysis of the influence of public participation on the consideration of alternatives during EIA processes, found that of the 300 ECA EIAs analysed only during 17 (representing ~25% of the 70 EIAs that did consider alternatives and ~5% of the 300 ECA EIAs analysed) were the consideration of alternatives influenced by the public participation process that was undertaken, while of the 66 NEMA EIAs

analysed only during 18 (representing ~30% of the 57 EIAs that did consider alternatives and ~25% of the 66 NEMA EIAs analysed) were the consideration of alternatives influenced by the public participation process that was undertaken. These results are shown in **Chart 15** below.

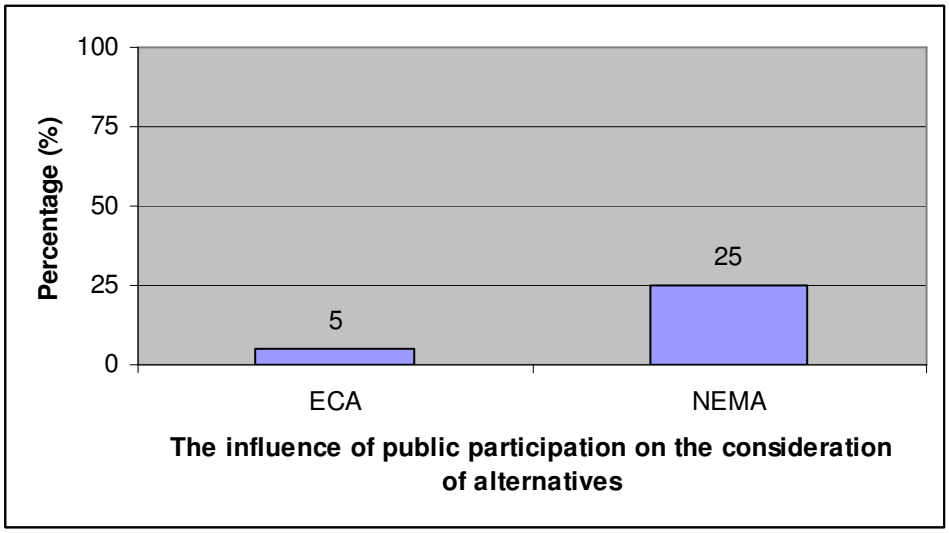

Chart 15. The percentage of ECA and NEMA EIAs during which public participation influenced the consideration of alternatives.

It must, however, be noted that these low percentages are not the result of the comments of the public being ignored, but are rather indicative of the low level of participation by interested and affected parties during the public participation processes undertaken during EIAs.

5.4.5. Fundamental alternatives or "Fine-tuning"?

While it was already stated above that for the most part the EIAs analysed primary addressed environmental constraints through the consideration of impact mitigation measures, the analysis specifically considered the influence that the EIA had in terms of what was originally proposal and what was in the end authorised. While ~5% and ~10% of the ECA EIAs respectively, and ~15% and ~35% of the NEMA EIAs respectively, "considered" the two fundamental alternatives, namely activity and property/site alternatives, it is a cause for concern that only 3 (~1%) of the ECA EIAs

and none of the NEMA EIAs were considered to have had a fundamental impact on the development that was the subject of the assessment and the application for environmental authorisation; the EIAs analysed for the most part only resulting in modest "fine-tuning" of the original proposed development.

This result is of even greater concern considering the finding that only approximately 2% of EIAs completed in the Western Cape resulted in environmental authorisation being refused. As already highlighted, however, it is important to note that many EIAs were never completed due to environmental constraints and other fatal flaws discovered through the EIA, the applicant deciding to not proceed with the proposed development, or the application considered as withdrawn or lapsed due to long delays. The approximately 1281 ECA EIA applications (~20%) that were withdrawn as well as the approximately 208 (~40%) NEMA EIA applications withdrawn (a total of 1489) should therefore also be considered when analysing the influence that EIAs are having on development applications. This specific aspect is an unexplored area that should be addressed in future analysis.

While it will, however, seem that EIAs for the most part are only resulting in modest "fine-tuning" of the original proposed development, it seems that many development projects were informed by feasibility and risk assessments prior to the submission of the EIA application or the undertaking of the EIA process (Lee-Wright, 1997). Cashmore (2004: 419) also refers to this practice and mentions the "*symbolic importance of EIA legislation*" as an "*alternative causal process*" that "*influence outcomes*", with the "*most substantial contemporary influence of EIA* [having] *been realised by raising stakeholder awareness about environmental issues and jarring consciousness*". In this regard the important role that policy documents, guidelines and planning frameworks play in terms of the provision of an indication of the decision-making framework/context and the likelihood outcomes of an application – providing at least some "predictability" of the investment risk.

5.5. Conclusion

While pre-EIA feasibility and risks assessments might be resulting in the need for only "modest fine-tuning" during the actual EIA, EIA decision-making and the achievement of sustainable development require a shift in focus from problems to solutions. The focus must shift to what could and should be done to achieve (or at least contribute most to the achievement of) the desired aim/goal for a specific area, rather than simply ensuring mere compliance with the procedural requirements and assessing the "acceptability" of the negative impacts associated with a predetermined business-as-usual development option, that might be unsustainable in the long-term. It is, therefore, unfortunate that the current practice of EIAs, and specifically the inadequate consideration of alternatives, seem to for the most part only be resulting in slightly less unsustainable development – not resulting in a fundamental change in the type and patterns of land use.

The importance of project-level mitigation cannot be ignored, especially when considering layout, technology, design and operational alternatives in order to limit the ecological footprint of developments. The "*tyranny of small decisions*" (Bill Odum quoted in Beatley & Manning, 1997: 7), the risk of "*steady erosion through incremental changes*" (Dewar, 2007: 3) and "*death by a thousand cuts*" (anon), however, highlight the need to also consider the strategic context, broader societal needs and the public interest. In order to pro-actively and more effectively consider fundamental alternatives, trade-offs, opportunity costs, carrying capacity restrictions, ecological limits, and cumulative impacts, EIAs must be considered within the context to be provided by the sustainable development vision, goals and objectives to be formulated in, and the desired spatial form and pattern of land use to be reflected in an area's IDP and SDF.

In Chapter 6, which follows, the findings of the literature review and theoretical analysis, together with the findings of the policy analysis will, therefore, be used to generate the research questions for the undertaking of a content analysis and survey of a sample of IDPs produced in the Western Cape Province of South Africa.

CHAPTER 6. THE PRACTICE OF INTEGRATED DEVELOPMENT PLANNING IN SOUTH AFRICA

6.1. Introduction

As with EIA theory, policy and legislation, the true test of the effectiveness of IDP theory, policy and legislation lies in its implementation. In this Chapter the findings of the literature review, theoretical analysis and policy analysis in the previous Chapters are, therefore, used to generate the research questions for the undertaking of a content analysis and survey of a sample of IDPs produced in the Western Cape Province of South Africa. The analysis critically considers the policy implementation during the practice of IDP in terms of the legislative requirements, and specifically critically reflects on the consideration of alternatives.

6.2. Methodology and Research Questions

An analysis of IDPs is not a simple task and in this regard I agree with Harrison (2008: 322) when he states that "[a] *simple analysis of pre-defined intentions against actual outcomes is not possible, as integrated development planning is a complex, ongoing, interactional process in which capacities for decision-making, joint action and coordinated implementation are built over time, and in which there are multiple intervening variables*", and when he quotes from Innes and Booher (2002: 10) that "*most planning issues involves wicked problems embedded in systems that are characterized by fragmentation, uncertainty and complexity*". Therefore, the analysis of the IDPs and SDFs is more a qualitative-descriptive analysis than a quantitative-descriptive analysis.

It is, further, acknowledged that the analysis of quality in planning is also complex. Having considered Garvin's (1987) eight dimensions of (product) quality (performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality) and Parasuraman, Zeithamal and Berry's (1985) five conceptual dimensions of service quality, Carmona and Sieh (2004:35-36) conclude that planning must be: "*efficient in decision-making*"; "*equitable in processes and*

outcomes"; "*capable of providing co-ordinated policy responses to complex problems"*; "*sensitive to change, not least to market and social context*"; "*capable of delivering predictable high-quality outcomes*"; "*ethical and accountable*"; "*visionary*"; and "*effective at delivering change*".

I agree with Carmona and Sieh (2004: 20) that "*judgements about quality will always need to be made in the context of something*" and that the "*conception of quality by implication rules out the possibility of measuring quality without first understanding to what it relates*". Carmona and Sieh's (2004: 167) further concludes that "*the most fundamental measure, therefore, of whether local government performance measures* (…) *can help to deliver better quality outcomes, as well as more efficient processes, is the extent to which it addresses sustainable development*" and that "*the only true measure of success of a planning system is in its contribution to the delivery of sustainable development*".

The reality of limitations to our decision-making models, gaps in knowledge, uncertainty, flawed assumptions and distortions that are associated with all decision-making (Clayton & Radcliffe, 1996: 12-13 & 16-20; Cilliers, 1998: 112; Cilliers, 2000a: 24; Cilliers, 2000b: 9-10) are acknowledged. Further acknowledged is the reality of the wicked, complex, immense, urgent and real challenges to be addressed by IDP (and EIA) in South Africa. The need for fundamental alternatives, that will lead to drastic and urgent change for the better, are, however, just as real.

Considering the complexity and uncertainty associated with IDP, most of the first generations of IDPs struggled to move beyond mere lip service and political spin when it came to social and ecological reform of the municipalities. The IDPs of many of the municipalities did not even contain the minimum components/contents in terms of the relevant legislative requirements and guideline documents (such as a SDF, SEA, Environmental Guidelines, Spatial Reconstruction Strategy, and a Land Use Management System) (Harrison, Todes & Watson, 2008: 170).

In addition, it seems as if IDP, which was also influenced by the *Rational Comprehensive* approach to planning, have largely duplicated the planning undertaken during the Apartheid era; sharing many of its flaws (Coetzee, 2002: 1; Oranje *et al*, 2000: 12; Harrison *et al*, 2008: 167; Robinson, 2008), including:

- perpetuating the Apartheid pattern of land use resulting in benefits mostly for the privileged members of the community (white and new black elite);
- primarily being concerned with control of land use;
- a highly technical process undertaken by specialists;
- limited public participation provided for and not enough emphasis placed on empowerment of communities;
- fragmented sector-based planning with limited integration;
- focused on infrastructural delivery programmes by the government with hardly any focus trying to facilitate private sector investment in development;
- weak focus on implementation; and
- in spite of the best intentions, little impact on environmental, social and economic concerns.

IDP was, however, legislated twelve years ago and the minimum content requirements must at least now be starting to fall into place. The analysis of the sample of IDPs and SDFs therefore considered the minimum content requirements for IDPs and SDFs in terms of the MSA and IDP Regulations, as well as the policy agenda of South Africa; with a specific focus on how sustainable development and the need for alternatives were considered.

From the findings of the literature review and theoretical analysis together with the findings of the policy analysis in the previous Chapters, the following research questions were, therefore, used for the undertaking of the content analysis and survey of a sample of IDPs produced in the Western Cape Province of South Africa:

- Were environmental constraints and causal factors as well as environmental assets and opportunities considered?

- Was consideration given to broader societal needs as well as the needs of tomorrow (intra- and inter-generational considerations)?
- Was the main focus on short-term relief or long-term release? (Was basic services the predominant focus (relief) or job creation (release), or was there a balanced focus?)
- Was consideration given to the need for decoupling economic growth and poverty eradication from rising levels of natural resource use and waste per capita over time, through the consideration of sustainable alternatives?
- Was poverty or over consumption, or both addressed?
- Were resource demand management, efficiency and conservation, as well as alternative sustainable technologies and designs in terms of municipal infrastructure development and service delivery considered?
- Were development priorities, objectives, strategies, programmes, targets and indicators to address environmental and sustainability issues, and exploring alternatives to address these, formulated?
- Did the IDP include a SDF?
- Was the SDF informed by a SEA?
- Did the SDF set out objectives that reflect the desired spatial form of the municipality and contains strategies and policies to achieve these objectives?
- Did the SDF indicate desired patterns of land use?
- Did the SDF address the spatial reconstruction of the municipality?
- Did the SDF provide strategic guidance in respect of the location and nature of development?
- Did the SDF sets out basic guidelines for a land use management system?
- Did the SDF indicate where land development and infrastructure investment should take place, desired or undesired utilisation of space in a particular area, areas where strategic intervention and priority spending is required?
- Did the SDF specifically address transformation of the historically distorted spatial patterns of settlement?
- Did the IDP show integration and alignment with National and Provincial Policies, Programmes, Frameworks & Strategies?

- Was the IDP influenced by public participation?
- Did the IDP adopt a "business-as-usual" (*laissez-faire*) approach or did it show a move towards more sustainable alternatives and business-unusual/reform (i.e. provided guidance and coherence regarding the required developmental and redistributive form and outcomes)?

6.3. Sampling

The local sphere of government in the Western Cape Province of South Africa consists of 1 Metropolitan Area, 5 District Municipalities and 24 Local Municipalities, namely:

City of Cape Town Metropolitan Area

West Coast District Municipality
- Matizikama Municipality
- Cederberg Municipality
- Bergrivier Municipality
- Swartland Municipality

Cape Winelands District Municipality
- Witzenberg Municipality
- Drakenstein Municipality
- Stellenbosch Municipality
- Breede Valley Municipality
- Breede River / Winelands Municipality

Overberg District Municipality
- Theewaterskloof Municipality
- Overstrand Municipality
- Cape Agulhas Municipality
- Swellendam Municipality

Eden District Municipality
- Kannaland Municipality
- Langeberg Municipality
- Mossel Bay Municipality
- George Municipality
- Oudtshoorn Municipality
- Plettenberg Bay Municipality
- Knysna Municipality

Central Karoo District Municipality
- Laingsburg Municipality
- Prince Albert Municipality
- Beaufort West Municipality

In order to gain a broad understanding of the actual practice of IDP in the Western Cape Province, the most recently available IDP of the only Metropolitan Area in the Western Cape, all the District Municipalities and one Local Municipality per District were analysed (representing 100% of the District Municipalities and the Metropolitan Area, and 20% of the Local Municipalities).

The sample, therefore, consisted of the IDPs of the following municipalities for the period 2006/2007 – 2010/2011:

City of Cape Town Metropolitan Area

West Coast District Municipality and Bergrivier Municipality

Cape Winelands District Municipality and Drakenstein Municipality

Overberg District Municipality and Theewaterskloof Municipality

Eden District Municipality and George Municipality

Central Karoo District Municipality and Beaufort West Municipality

6.4. Findings

6.4.1. Environmental Constraints, Causal Factors, Assets and Opportunities.

With the reality of carrying capacity restrictions, limits of acceptable change, and ecological thresholds, and considering the fact that IDPs with their SDFs and SEAs are best suited to address these issues, it is alarming that most of the IDPs failed to adequately consider environmental constraints and causal factors, assets and opportunities. Even if an IDP did briefly and broadly consider these aspects, it usually failed to adequately translate these into objectives, strategies, programmes, projects, targets and indicators.

While many of the SDFs produced considered these aspects, the IDPs for the most part failed to adequately integrate the contents/findings of the SDF into the IDP. While all the Municipalities either had produced of were in the process of producing a SDF, which is a vast improvement on the first generations of IDPs where SDFs for the most part did not exist, most of the SDFs were either outdated or inadequate.

While water was a specific environmental constraint mentioned by most municipalities, some of the municipalities merely considered the provision of water to be a budgetary constraint, in that not enough capital was available for the engineering and infrastructure required to supply the water to communities; failing to adequately consider the sustainability of the water source.

While electricity supply were also mentioned by some of the municipalities as a constraint, it was clear that most municipalities considered this as merely a temporary electricity supply problem that could be addressed by capital interventions by Eskom, and infrastructure development by municipalities in terms of distribution. While many of the municipalities briefly mentioned the need to consider alternative sources of energy, most failed to translate these into actual objectives, strategies, programmes and projects.

While almost all the municipalities mentioned sewage treatment, waste management and housing backlogs as areas that needed attention, most failed to consider the natural resource constraints associated with these aspects in terms of the availability of water for water-born sewage, building materials, embedded energy and carbon in terms of construction, energy and water wastage in terms of inefficient design and operation, and the assimilative capacity of waste sinks. Again the issues were mostly considered from an engineering point of view, with municipalities maintaining that (conventional unsustainable) engineering solutions would be readily available if the necessary capital could be secured.

While many of the municipalities briefly mentioned the opportunities associated with environmental attributes, these were mostly considered in the context of attracting tourists, investment and skilled labour, as opposed to also considering the opportunities associated with ecosystem services and sustainable technologies being used as alternatives to conventional unsustainable practices (for example managing the water catchment in order to ensure a clean and sustainable supply of water, rather than having to pipe in and treat water from an unsustainable source).

6.4.2. Intragenerational and Intergenerational Needs.

While all the municipalities strived to consider and address intragenerational needs, and some specifically mentioned the need to address the wrongs of the past, it would seem as if many of the municipalities for the most part are still perpetuating the Apartheid pattern of land use. Not only are municipalities failing to adequately address urban restructuring in an effort to integrate historically racially segregate communities and neighbourhoods, the planning of new neighbourhoods and patterns of land use also seem to, for the most part, be duplicating the Apartheid pattern of land use. Although it is, however, acknowledged that this is an ongoing challenge that cannot be addressed and resolved in the short-term, the basic steps of determining areas for priority intervention, delineating an urban edge, doing a vacant land audit, and drafting a densification strategy should at least have been put in place as the first steps towards an urban restructuring programme for each municipality.

Most of the municipalities failed to move beyond the mere mention of the need to address spatial restructuring.

For the most part it would seem as if “Local Economic Development” initiatives were being planned for the poor (the second economy), while conventional mainstream economic opportunities (the first economy) were considered for the rest of the municipal area (and the old pockets of affluence). Very few efforts were made to holistically consider the economic opportunities for the entire municipal area (integrating the first and second economies or at least ensuring complimentarily and synergy between the first and second economy). Some of the municipalities also made it clear that with the infrastructure backlogs inherited from the Apartheid era, their main focus was the provision of basic services and infrastructure, whereafter, sometime in the future, they will start looking at the opportunities that they believe will flow from the provision of basis services.

While all the municipalities (some of them very briefly) mentioned the need for sustainable development and thus intergenerational equity, it is alarming that almost a third of the municipalities set no specific sustainable development objectives, strategies, programmes, targets or indicators, with just more than a third of the municipalities only broadly referring to sustainable development objectives, while one referred to sustainability in its SDF, but failed to adequately integrate the sustainability issues from the SDF into the IDP.

While some municipalities specifically stated that it is not a municipal function to create jobs, all the municipalities at least are striving to create an environment that will result in jobs being created, with many municipalities focussing on labour intensive basic service infrastructure development projects.

It would therefore seem that for the most part municipalities are battling just to provide relief to the current generation in the form of the provision of basic services, not having the resources, capacity or proper understanding of their responsibilities to

also properly start working on long-term release for both current and future generations.

6.4.3. Decoupling economic growth and poverty eradication from rising level of natural resource use and waste per capita over time through the consideration of alternatives, while addressing both poverty and over consumption.

While the "development as growth" model has resulted in economic efficiencies and growing economies, this have mainly resulted in unequal distributional consequences with the rich and powerful not simply benefiting more than the poor (the rich getting richer, while the poor is not benefiting), but that the benefits to the rich have come at a cost to the poor (the poor getting poorer) and to the environment (Ocampo, 2002: 394). The poor with their lack of economic resources are often directly dependent on the (free) ecological resources provide by the ecological commons, and are therefore the most vulnerable when the ecological commons are deteriorated due to overconsumption.

While poverty was specifically mentioned by all the municipalities, some of them having done a very good analysis of the causal factors and nature of poverty, the issue of over consumption, although briefly mentioned by one of the municipalities, was not adequately addressed by any of the municipalities.

Considering the fundamental importance of infrastructure development, service provision and resource use to the sustainability of human settlements, and the crucial need to decouple economic growth and poverty eradication from rising levels of natural resource use and waste generation, it is alarming that none of the municipalities adequately address this aspect or even started to consider alternatives that will change linear resource flows through human settlements to circular resource flows. In this regard, even the basics, like waste recycling, have not been adequately addressed by most municipalities.

6.4.4. Resource Demand Management, Conservation, Circular Resource Flow, Alternative Technologies and Footprint Reduction.

With public investments in infrastructure development positively impacting on growth in the economy and poverty eradication through the triggering and stimulation of private sector economic investments, and the provision of a foundation for social development (Swilling, 2006: 1), investment in urban infrastructure forms a key component of the South African government's economic growth and social development policy. Conventional infrastructure construction, operation and maintenance, however, tend to be resource hungry and environmentally harmful (Graham, 2003: 41, 59, 61 & 69; Swilling, 2008: 81-87).

While many of the municipalities briefly mentioned the need to explore alternatives in terms of energy and water sources, most of the municipalities failed to adequately (or even at all) consider demand management, conservation, resource flow and alternative technologies. As already stated, while all the municipalities mentioned sewerage treatment, waste management and housing backlogs as areas that needed attention, most failed to consider the natural resource constraints associated with these aspects. Again these issues were mostly considered from an engineering point of view, with the Municipalities maintaining that (conventional unsustainable) engineering solutions would be readily available if the necessary capital could be secured. Considering the fundamental importance of infrastructure development, service provision and resource use to the long-term sustainability of human settlements, it is alarming that all the municipalities failed to adequately consider alternatives to change linear resource flows through human settlements to circular resource flows in an effort to improve resource efficiencies and conservation, and reduce ecological footprints.

6.4.5. Spatial Development Frameworks and SEAs

While the first generations of Integrated Developments Plans for the most part did not contain a SDF, all the Municipalities analysed either had produced or were in the process of producing a SDF. Although this is a vast improvement, it is a cause for

concern that most of the SDFs were either outdated or inadequate, with many of the SDFs not adequately integrated into or informing or being informed by the IDP. It is, however, hoped that with time, as the SDFs are improved and better integrated into the IDPs, the improved SDFs will lead to vastly improved IDPs.

While most of the first generation of IDPs did not contain a SDF, none of the first IDPs produced were informed by a SEA (Muller, 2006). It was therefore encouraging to find that more than half of the IDPs and SDFs were either informed by a SEA or to be informed by a SEA that was busy reaching completion. While the SEAs varied greatly in terms of the level of detail they contained and the adequacy with which they addressed issues, some being very good and others being very basic, it was again a cause for concern that the SEA for the most part were not adequately integrated into the IDP or SDF.

While some of the IDPs and SDFs contained detailed objectives, strategies and guidelines with regard to the desired spatial form and patterns of land use, most of the municipalities failed to adequate address this crucial aspect, only making broad policy statements which they failed to adequately integrate into the IDP. One of the municipalities, however, stood out in that it addressed this requirement in great detail and was spatially explicit with regards to the desired spatial form and pattern and the opportunities available to the municipality.

While some of the municipalities specifically mentioned the need to address the wrongs of the past and the Apartheid structure of their towns, it would seem as if many of the municipalities for the most part are still perpetuating the Apartheid pattern of land use – failing to move beyond the mere mention of the need to address restructuring. With the spatial reconstruction of municipalities being one of the main objectives of IDP, this is a cause for concern that the municipalities did not make better use of the opportunities that came with South Africa's political and planning transformation and were more innovative, creative and bold in terms of exploring the alternatives and opportunities available to address the spatial reconstruction of the

municipality in terms of both social and ecological reform. In this regard Harrison (2002: 1) states that:

> *"A workable system of planning has emerged from the traumas and uncertainties of South Africa's political transition. However, a rare opportunity for truly experimental and creative forms of planning may have been lost as a new planning dogma took shape relatively early in the transition process. The new 'truths' of planning relate partly to the 'new urbanist' agenda internationally and partly to ideas incubated in South African schools of planning and management during the 1980s. There is much of value in the new 'truths'. The problem however is the extent to which the new orthodoxy has closed debate and limited experimentalism without first opening the field to a real diversity of positions and possibilities."*

In terms of providing strategic guidance in respect of the location and nature of development, desired or undesired utilisation of space in a particular area, indicating where land development and infrastructure investment should take place and where strategic intervention and priority spending is required, some of the municipalities did manage to consider the needs of specific areas, but mainly concentrated on basic needs in terms of infrastructure and housing backlogs – therefore only considering short-term relief.

6.4.6. Integration and Alignment with the Policies, Programmes, Frameworks and Strategies of neighbouring municipalities and those of National and Provincial Departments and Role-players.

While most of the IDPs made broad mention of the *National Spatial Development Perspective* (The Presidency, 2006), the *Western Cape Provincial Spatial Development Framework* (DEA&DP, 2005), the *Growth Potential of Towns in the Western Cape* (DEA&DP, 2004), and supported the need to direct resources to functional areas with high economic opportunity and high social need, many of the municipalities failed to illustrate the implementation of this approach in their IDPs and SDFs. It would seem as if the main reason for this finding is the historic backlogs that are still to be addressed. It would seem that only once the backlog have been

addressed will new fixed investment be directed to areas of high economic opportunity, while social investment will be channelled to areas of high social need.

While many of the municipalities broadly mention strategic programmes, strategies and initiatives of other stakeholders and role-players, only a few of the municipalities seem to actually be aligning with these initiatives and partnering with these stakeholders in terms of joint or supported initiatives.

It is furthermore clear that although many of the municipalities have a number of different sectoral strategies and programmes (e.g. Local Economic Development Strategy, Environmental Programme, Services Master Plan, etcetera), the quality of the integration and alignment of these strategies and programmes within the IDPs remain poor.

6.4.7. The Influence of Public Participation

While it was difficult to adequately analyse the influence that public participation had on the IDP processes and contents of the Plans and SDFs, it would seem as if formal and structured community engagements informed all the IDPs. It is, however, clear that empowerment of communities to actively and effectively participate in IDP, in order to ensure that communities take ownership of the IDP as well as take collective responsibility for contributing to and becoming a partner in the solutions to many of their own needs, necessitates further attention. In this regard, public participation is seen as both a procedural requirement as well as an end in itself. With many people battling to survive and being desperate for urgent improvements in their daily lives, it is understandable that engagements with communities are dominated by calls for basic service provision, housing and job creation.

6.5. Conclusion: “Business-as-usual” or “Business-unusual”?

With many municipalities battling to just cope with ever increasing basic service provision backlogs and very high and persistent levels of poverty and joblessness, it would seem as if municipalities are sticking to what they believe to be the “tried-and-

tested" development models and patterns. In their desperate efforts to attract (any) development (any development), it would seem as if for the most part the current practice of IDP is also perpetuating the conventional, unsustainable and inequitable business-as-usual development practices and patterns of the past. Consequently Municipalities fail to be "developmental" insofar as IDPs and SDFs are supposed to give strategic guidance to, and steer, a process of social, economic and ecological reform.

As mentioned earlier in this Chapter, it is, however, acknowledged that the challenges to be addressed by IDP (and EIA) in South Africa are indeed "wicked", complex, and immense, and while there is a need for fundamental alternatives that will lead to drastic and urgent change for the better, it must be realised that IDP is a complex and ongoing process. While the current practice of IDP therefore requires drastic improvement in terms of the eventual substantive outcomes to be achieved, great progress has been made when compared to the earlier generations of IDPs.

Business-as-usual will, however, not result in the "*most ambitious process of positive social engineering in the history of South Africa*" (Davids et al, 2005: 133) or result in an adequate response to the challenge of reconstruction, redistribution, reconciliation and sustainable growth, in order to urgently address the legacy of Apartheid, and fundamentally transform the South African society by delivering "*basic social and economic services to all, without threatening the viability of the ecological and community systems upon which these services depend*". It is, therefore, unfortunate that based on the current practice of IDP, and specifically the inadequate consideration of alternatives, it would seem as if the long-term outcome of IDP will be only slightly less unsustainable development – not resulting in a fundamental change in the type and patterns of land use.

In Chapter 7, which follows, possible solutions to overcoming the constraints and shortcomings in the consideration of alternatives during the practice of EIA and IDP in South Africa are considered.

CHAPTER 7. CONCLUSION AND RECOMMENDATIONS

7.1. Introduction

This Chapter concludes and considers possible solutions to overcoming the constraints and shortcomings in the consideration of alternatives during the practice of EIA and IDP in South Africa; considering both what can and should be done within the existing legislative framework, as well as how the legislative framework should be reformed to ensure the better consideration of alternatives – and thereby the improved achievement of sustainable development in South Africa.

7.2. A dream deferred

Considering the findings of the analyses in Chapters 5 and 6 it would seem as if the practice of EIA and IDP in South Africa, as in the rest of the world, are only resulting in the modest fine-tuning of development patterns and processes with the unsustainable and socially unjust development patterns of land use of the past (business-as-usual) being perpetuated. Having been an active contributor to the practice of EIA and IDP for more than ten years, these findings are a bitter pill for me to swallow.

While the current practice of EIA and IDP might be resulting in some short-term relief, in the long-term it will, however, not deliver on the promise of positive change and a better life for all. The short-term benefits being realised mainly by only a few, are coming at a great long-term cost to society at large, especially the poor, and to the environment. The "*most ambitious process of positive social engineering in the history of South Africa*" (Davids *et al*, 2005: 133) as well as the achievement of reconstruction, redistribution, reconciliation and sustainable growth are being delayed. The legacy of Apartheid and the need to fundamentally transform the South African society by delivering "*basic social and economic services to all, without threatening the viability of the ecological and community systems upon which these services depend*" are therefore not being adequately addressed – resulting in "a dream deferred" for all South Africans.

7.3. Complexity and Uncertainty

The harshness of the reality of these findings are also amplified when considering that this is the case in spite of South Africa having some of the most progressive environmental and planning legislation in the world (Devenish, 1999: 33; Cock & Fig, 2001; Oelofse, C., Scott, Oelofse, G. & Houghton, 2006: 75; Swatuk, 2006; Wayne Visser, n.d.), the strong political push for positive change, as well as a foundation of four decades of international sustainable development thinking and practice from which to learn and on which to build. It is, however, acknowledged that the challenges to be address by EIA and IDP in South Africa are complex and "wicked", and that the pursuit of solutions is therefore also a complex and ongoing process. As stated earlier, the need for fundamental alternatives that will lead to drastic and urgent change for the better are, however, just as real.

While grappling with the possible reasons for these shortcomings and in the search for possible solutions, I came across an argument/explanation by Voß and Kemp (2006: 3), which touched on and resonated many of my own thoughts as I was analysing the EIAs and IDPs and being confronted with the findings. As such, I want to provide the following quote from Voß and Kemp (2006: 3):

> "*Disappointment abounds in public discourse about sustainability*. Many say that *the outcome of sustainability strategies has been meagre compared to the outpouring of rhetoric regarding the concept towards the end of the last century. The long-standing definition of the Brundtland Commission – 'development that meets the need of the present without compromising the ability of future generations to meet their own needs' – is accepted everywhere as a general normative orientation* (…)*, as is the criterion for a good society of equal consideration for ecological, economic and social development goals* (…). *But when it comes to practical implementation, the concept seems to dissolve into rhetoric that masks familiar conflicts over concepts, goals and instruments that for decades have dominated societal action in problem areas such as energy, transport, agriculture and housing.*
> *A widespread attitude is that the concept of sustainability adds nothing new for the treatment of practical problems. It is said that the concept waters down the new parameter of political decision making introduced by the concept of ecological carrying capacity* (…). *The organisational and technological arrangements of modern society are said to be reproduced with all their ambivalences under the banner of sustainability* (…). *The vague label diffuses concrete challenges and presents a veil behind which*

> *particular interest groups can evade responsibilities and commitments that they had previously been urged into through public pressure and political struggle. For many, sustainability appears at best an empty phrase and at worst a Trojan horse for the redefinition of the public interest by a powerful few.*

I, however, agree with Voß and Kemp (2006: 3-4) when they take a different standpoint and argue that:

> "[T]*he multi-dimensional and dynamic concept of sustainability* (…) *has fundamental implications for the governance of modern society. The systematic and long-term nature of social, economic and ecological development brings complexity and uncertainty to the fore as key issues for sustainability. Sustainability cannot be translated into a blueprint or a defined end state from which criteria can be derived and unambiguous decisions taken to get there. Instead, it should be understood as a specific kind of problem framing that emphasises the interconnectedness of different problems and scales, as well as the long-term and indirect effects of actions that result from it.* (…) *The concept of sustainability has brought with it recognition of the limits of rigid analysis and the inadequacy of policy approaches that aim at planning and achieving predetermined outcomes.*
> *From this perspective, sustainable development is more about the organisation of processes that about particular outcomes. It is about the modes of problem treatment and the types of strategies that are applied to search for solutions and bring about more robust paths of social and technological development."*

At the centre of the pursuit of sustainable development is therefore the "*search for solutions*" to "wicked problems", with the consideration of alternatives seen as the "heart and soul" of this search for solutions. A transdisciplinary search for alternatives is therefore required, with the assumptions (and promises) that comes with each alternative to be adequately explored and the real impacts and consequences associated with each alternative to be unveiled, unmasked and discovered. The assumptions, uncertainties and gaps in knowledge, often hidden unintended consequences, trade-offs, carrying capacity restrictions, opportunity costs and distributional consequences should be adequately considered and assessed in the search for the alternative that will result in the simultaneous achievement (or at least contribute most to the achievement) of the multiple interconnected goals and challenges to be addressed in the ongoing pursuit of sustainable development.

The most sustainable alternative has to hit a number of interwoven targets simultaneously. The sustainable alternative will result in the maximum positive impact, the smallest negative impact, equitable impact distribution, environmental justice and the maintenance of ecological integrity and environmental quality. In this regard sustainable development is seen as a process of exploring alternatives in order to gain insight and learn.

The consideration of alternatives shifts the focus from problems to solutions. Rather than asking the (wrong) questions regarding how much negative impact is "safe" and "acceptable", the questions should rather be how little impact is possible and what are the multiple short- and long-term benefits that could and should be realised. Both the alternative means as well as alternative goals are to be considered as broadly as possible, with the most important question being "What are the alternatives?"

7.4. "Developmental" EIA and IDP

Being "solutions-driven" means that both EIA and IDP practice should be more "developmental" in approach. EIA practice should shift from the mere consideration of constraints, impact mitigation and problems, to a "developmental" process focussed on opportunities and finding sustainable alternatives and solutions. EMFs should, therefore, also be "solutions-driven" and "developmental" in approach, in order to provide an effective framework for the search for solutions during project-level EIAs.

A "developmental" approach to IDP means that IDP should not be about the production of a static plan, but rather about the production and implementation of a programme of action to achieve sustainable development. "Development-oriented" does, however, not imply the blind promotion and support of any and all development. In contrast "developmental" IDP specifically calls for IDP to provide a clear framework for and direct the "*most ambitious process of positive social engineering in the history of South Africa*" (Davids *et al*, 2005: 133). IDP should integrate and align the efforts of government and its social partners to address the

challenge of reconstruction, redistribution, reconciliation and sustainable growth, in order to address the legacy of Apartheid and fundamentally transform the South African society and deliver "*basic social and economic services to all, without threatening the viability of the ecological and community systems upon which these services depend*".

Financial viability, previously often the only or at least the main consideration, should be considered within the context of justifiable economic development, measured against the broader societal short-term and long-term needs. While the financial viability considerations of the private developer might therefore indicate if a development is "do-able", the "need and desirability" will be determined by consideration of the broader community's needs and interests as reflected in the IDP, SDF and EMF for the area, and as determined by the EIA.

In this regard, it is also important to note that while the importance of job creation and economic growth for South Africa cannot be denied, the Constitution calls for *justifiable* economic development. In his consideration of the Constitutional imperative for development to be *justifiable*, Judge Ngcobo in his ruling in the Constitutional Court case of **Fuel Retailers Association of Southern Africa v. Director-General Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province & others (Case CCT 67/06) (2007)** states that:

> "*What section 24 requires, and what NEMA gives effect to, is that socio-economic development must be justifiable in the light of the need to protect the environment. The Constitution and environmental legislation introduce a new criterion for considering future developments. Pure economic factors are no longer decisive. The need for development must now be determined by its impact on the environment, sustainable development and social and economic interests. The duty of environmental authorities is to integrate these factors into decision-making and make decisions that are informed by these considerations. This process requires a decision-maker to consider the impact of the proposed development on the environment and socio-economic conditions*."

EIA and IDP should therefore consider the specific needs of the broader community, together with the distributional consequences of the alternative under consideration in order to determine whether or not the development alternative is "justified", will contribute to environmental justice and social justice and is the "best practicable environmental option" – in other words to ensure that the development alternative is socially, economically and environmentally sustainable.

Considering the important role the state should play, urgent attention should, however, also be given to the recruitment, development and retention of adequate human resource capacity within the organs of state. In this regard Evans (1995: 71) states that:

> *"Plans for state involvement that assume that the supply of bureaucracy will naturally increase to meet demand are utopian. Without stringent attention to selectivity, overwhelmed bureaucracies deteriorate into development impediments or pools of patrimonial self-interest.* (…) *Developmental strategies must be concerned with conserving state capacity even more than conserving fiscal or natural resources."*

7.5. Integration, Alignment and Coherence.

The consideration of alternatives is seen as the "heart" and "soul" of both EIA and IDP. In order to overcome the "*tyranny of small decisions*" (Bill Odum quoted in Beatley & Manning, 1997: 7), the risk of "*steady erosion through incremental changes*" (Dewar, 2007: 3) and "*death by a thousand cuts*" (ancient Chinese saying), EIA and IDP can never be, and was never supposed to be completely separate processes. While EIA reactively and incrementally shape and generate development alternatives, IDP is suppose to pro-actively consider fundamental alternatives and formulate a programme of action, consisting of a combination of the most sustainable alternatives, to achieve positive change – to achieve sustainable development.

In order to pro-actively and more effectively consider fundamental alternatives, trade-offs, opportunity costs, carrying capacity restrictions, ecological limits, and cumulative impacts, EIAs must be considered within the context to be provided by the sustainable development vision, goals and objectives to be formulated in, and the desired spatial form and pattern of land use reflected in an area's IDP and SDF.

Properly informed SEA-based IDPs and SDFs, refined by EMFs, should therefore provide the strategic context and decision-making framework for the consideration of need, desirability and alternatives; with the actual and potential socio-economic and ecological impacts of a specific proposal to be considered during the project-level EIA, project-level EIAs in turn providing "feedback" to the planning processes to ensure reflexivity and continued improvement. The improved integration and convergence of IDP and EIA decision-making methodologies and practice are therefore paramount to the adequate consideration of alternatives and the pursuit of sustainable development in South Africa.

The complex challenge of having to balance the economic, social and environmental needs of all South Africans, means that there should be cooperation, alignment and harmonization between the different spheres of government. The alignment and harmonisation processes should also be systematic and structured (as appose to *ad hoc*), and robust enough to facilitate integrated and coordinated action – with decisive and positive impact on the vision, goals, objectives and actions of government being the measure of effective alignment and harmonisation. Through the harmonisation and alignment, the actions of government can become decisive and focussed, while enabling government to consider the different trade-offs and strategic choices when deciding how best to utilise its limited resources for maximum economic and social effect (maximising efficiency, equity and sustainability) (The Presidency, 2004).

The confusion currently caused by all the different, and often conflicting, National, Provincial and Local Government policies, strategies, programmes, plans and frameworks is also largely caused by a lack of alignment between the plans and frameworks. The improved integration, alignment and coherence between the practice of EIA and IDP as well as between the policies, strategies, programmes and agendas of the three spheres of government should therefore be a specific area of focus.

In this regard the District Municipality IDP Co-ordinating Forums (on which all the relevant government departments as well as the relevant district and local level municipalities should serve) should play a facilitative and co-ordinating role. These forums should have a specific programme of action, with one of the specific areas of focus to be integration, alignment and coherence. In this regard, specific targets must be set and responsibilities allocated, with the different spheres of government holding each other accountable for the progress made.

MEC for local government in the province, and his delegated officials, which the MSA specifically tasked with the responsibility to ensure that IDPs and SDFs align with the plans, programmes, strategies or projects of other organs of state or other affected municipalities, should also play a much more active role in the ongoing engagements between the organs of state around issues of alignment. The MEC should also appoint *ad hoc* committees (as provided for in the MSA) to decide on issues of non-alignment in order to avoid the current situation where IDPs are “adopted” by Municipal Councils, yet remain in conflict with the plans, programmes, strategies or projects of other organs of state or other affected municipalities.

7.6. Ecological Constraints, Causal Factors, Opportunities and Solutions.

To overcome the problem of cumulative change the strategic context of the development and decision should be considered in order to better consider cumulative impacts and strategic consequences. In response to the reality of ecological constraints and carrying capacity restrictions, the drafting of a SDF and the undertaking of an SEA should not only follow the formulation of an IDP. IDPs should also be informed by SDFs that in turn should be informed by proper SEAs.

The sustainable development framework model with its formulation of a sustainability vision, objectives, targets and indicators against which to assess the sustainability of different alternatives, is seen as the most appropriate SEA approach for use in a SDF and IDP process, in that it not only integrates sustainability into the planning process

as one of the aspects to consider, but establishes sustainability as the consideration and fundamentally influences the very vision and objectives – and therefore the outcomes – of the planning process. Whereas the focus of project-level EIA too often is mainly on the constraints, problems and negative impacts to be overcome, solved and mitigated, the focus of SEA and IDP, while also focused on ecological constraints and carrying capacity restrictions, should also be on opportunities and alternative development paths and alternative programmes of action to achieve desired outcomes and on solutions to the causal factors.

Again it must be stressed that sustainable development is not just about what cannot happen, but about a programme of action that will result in positive change. In this regard there is a need for IDPs and SDFs to become more visionary and creative in their search for alternatives that will deliver the required positive change, and for SDFs to be more spatially explicit in this regard.

7.7. Resource Demand Management, Conservation, Circular Resource Flow, Alternative Technologies and Footprint Reduction.

When planning or deciding on land use proposals, the construction of municipal infrastructure and the delivery of municipal services, IDPs and EIA should specifically consider alternatives that will lead to a reduction in the total consumption of inputs, increases in the efficiency of throughputs, and transformation of all waste outputs into productive inputs, in order to reduce the ecological footprints of development and change linear resource flows to a circular resource flow. In this regard the specific recommendations dealt with in section 2.9 of this dissertation should be addressed in the transition to a more sustainable society.

7.8. Environmental Management Frameworks and SEA

While IDPs that are properly informed by SDFs, that in turn are properly informed by SEAs, will provide a strategic framework for project-level EIA decisions, EMFs should specifically be formulated to further contribute to overcoming the problem of cumulative change. Clear legislative linkages should therefore be established

between SDFs and EMF, with provision made for SDFs to be refined through the adoption of EMF within the SDF area, and *visa versa*, with provisions for SDFs to be adopted as spatial and environmental planning tools that can fulfil the same function as EMF in terms of a providing detailed framework for project-level EIA decision-making.

In this regard it is also crucial that SEA be formally legislated, with the procedural requirements to be specified, in both planning and environmental legislation as a vital informant to all planning and environmental processes. As already mentioned, the drafting of a SDF and the undertaking of an SEA should not only follow the formulation of an IDP; IDPs should also be informed by SDFs that in turn should be informed by proper SEAs.

7.9. Types of Alternatives

If a project-level EIA development proposal can show that the proposal is in line with the (properly informed) IDP, SDFs and EMFs for the area in terms of the type of activity being proposed, the proposed location and the timing of the project, then there should be no need for the authorities to insist that further activity and property/site alternatives to be considered as part of the EIA process. The EIA can then focus on project-level mitigation in terms of considering layout, technology, design and operational alternatives in order to limit the ecological footprint of developments and possible alternative to enhance project benefits. In this regard the legislation should be amended to only allow for exemption from having to considered activity and property/site alternatives if these are in line with the approved IDP, SDF and EMF for the area.

With the ecological footprint of a development, however, mostly extending beyond the direct physical footprint of the development, in terms of its embedded and operational energy requirements, its production of waste and its impact on the need for the transportation of both people and goods, the consideration of operational, technology and design alternatives should receive much more attention in EIAs. The

development of norms and standards to promote best practice together with the ongoing research to ensure continuous improvement should also be ensured.

7.10. Methods and criteria used to identify, screen, scope and comparatively assess alternatives.

It is, however, vital that for both IDPs and, even more so for, EIAs the specific method and criteria used to indentify, screen, scope and comparatively assess alternatives are specifically provided, with the criteria to be specifically informed by the framework provided by the IDP, SDF and EMF for the area.

The level of assessment should also receive attention. To simply provide a brief description of the "consideration" given to alternatives pre-EIA is not adequate. An adequate comparative assessment of alternatives should be undertaken with a specific focus on eliminating and mitigating negative impacts and enhancing positive impacts.

The specific and direct link between the consideration of need and desirability and the consideration of alternatives should also be much more explicitly stated in the legislation, with the consideration of need and desirability to be elevated as one of the specific criteria to be considered by the authority when deciding on an application and an Environmental Assessment Practitioner when undertaking an EIA. The legislation should also be amended to specify the specific issues to be considered and questions to be answered when considering need and desirability, with the draft set of questions referred to in section 3.8 of this dissertation to be used as a starting point in this regard.

The definition of "alternative", in relation to a proposed activity or land use, should also be amended in the EIA legislation (NEMA and the EIA Regulations promulgated in terms of NEMA) to refer to "any other possible course of action" that will "provide the most benefit" and "cause the least damage to the environment as a whole, at a cost acceptable to society, in the short-term and long-term," measured against the option of not proceeding, and against the desired spatial pattern and sustainable

development goals for the specific area; and may include alternatives to – (a) the property on which or location where it is proposed to undertake the activity or land use; (b) the type of activity or land use to be undertaken; (c) the design, layout and scale of the activity or land use; (d) the technology to be used; (e) the timing and phasing of the activity or land use; and (f) the operational aspects of the activity or land use.

7.11. Deliberative Democracy: A strong state and a strong civil society.

> *"You can never have a revolution in order to establish a democracy. You must have a democracy in order to have a revolution*." (G.K. Chesterton quoted in Barber, 1972: 99)
>
> *"What is right, or even what a right is, cannot in itself determine political judgement. Rights themselves are both constantly being redefined and reinterpreted and dependent for their normative force on the engagement and commitment of an active citizen body*." (Barber, 1996: 364)

The need and desirability of a development should be measured against the sustainable development vision, goals and objectives democratically formulated in, and the desired spatial form and pattern of land use reflected in the area's IDP and SDF. Communities should therefore realise the importance of EIAs and IDPs in the shaping of their futures and daily lives, and responsibly and actively engage in the deliberative democratic process of IDP and in the public participation processes of project-level EIAs. Communities should take ownership of the IDP, hold the state accountable, and take collective responsibility for contributing to and becoming a partner in the search for solutions to many of their own needs.

A strong democratic developmental state held accountable by a strong civil society and strong democratic institutions is therefore required. In addiiton, the *democratic* developmental state must be characterised by "*inclusive* embeddeness", meaning that "*the social basis and range of accountability goes beyond a narrow band of elites to embrace broader sections of society*" (White 1998, quoted in Edigheji, 2005: 14).

7.12. Professionalism, Independence, Objectivity and Accountability.

While it is acknowledged that political decision-making is not always a strictly rational process, and both professional and political decision-making have their legitimate place, there should be a clear distinction made between professional decision-making and political decision-making (i.e. between decisions made by politicians and decisions made by government administrators/officials) (Connelly and Richardson, 2005: 395). While a political decision-maker's "terms of reference" might not extend beyond that of the politician's constituency nor beyond the next election, the "terms of reference" of the professional decision-making process (for both planning and EIA) is usually more extensive in terms of spatial and temporal boundaries. The professional decision-maker must consider broader societal interests and long-term ecological needs. Whereas the professional decision-making process is also (supposed to be) rational, comprehensive, transparent and inclusive, allowing for public participation; political decisions are not necessarily transparent and inclusive, nor strictly rational.

Both the NEMA EIA Regulations and the Planning Profession Act requires of environmental assessment practitioners and planners to be independent and act in an objective manner, and to serve the interest of the public to benefit present and future generations. While it is acknowledged that all decision-making has political dimensions, practitioners and planners should account for the environmental and spatial logic of their work and the professionalism, objectivity and ethics reflected in their work; and in this regard will have to answer to their peers, the authorities and the public. Politicians should also ensure that they act responsibly in terms of how they deliver on their political promises and serve the developmental needs of the public, and will have to answer to the electorate. In this regard, the preamble of the Code of Conduct for Municipal Councillors contained in the MSA state that:

> *"Councillors are elected to represent local communities on municipal councils, to ensure that municipalities have structured mechanisms of accountability to local communities, and to meet the priority needs of communities by providing services equitably, effectively and sustainably within the means of the municipality. In fulfilling this role councillors must be accountable to local communities and report back at least quarterly to constituencies on council matters, including the performance of the municipality in terms of established indicators."*

7.13. Conclusion: Bold Decisions that will lead to Urgent and Fundamental Change for All South Africans.

While the challenges to be addressed by EIA and IDP in South Africa are complex and "wicked", and the pursuit of sustainable development solutions is therefore also a complex and ongoing process, the need for fundamental alternatives that will lead to drastic and urgent change for the better are, however, just as real. The urgency and importance of the sustainable development challenge for South Africa, calls for bold decisions and the search for sustainable alternatives that will deliver urgent and fundamental change for all South Africans. The practice of EIA and IDP should be driven by these realities and reflect the need for urgent and fundamental change.

While the proper consideration of alternatives during IDP will therefore determine the desirable destination and draw the map of how to get there, the proper consideration of alternatives during project-level EIAs will ensure that we stay the course by finding the alternatives that will take us closer to our desired destination, while also providing feedback to IDPs and allowing for an adaptive management and learning approach.

The proper consideration of alternatives during both EIA and IDP is seen as vital to the shift from mere "fine-tuning" to delivering on and implementing the "*most ambitious process of positive social engineering in the history of South Africa"* (Davids *et al*, 2005: 133) to address the challenge of reconstruction, redistribution, reconciliation and sustainable growth, in order to address the legacy of Apartheid and deliver "*basic social and economic services to all, without threatening the viability of the ecological and community systems upon which these services depend*" – fundamentally transforming the South African society and the daily lives of all South Africans in the short- and long-term.

BIBLIOGRAPHY

Literature

Adelzadeh, A. (2007) Halving Poverty and Unemployment in South Africa: Choices for the next ten years, in: Asghar Adelzadeh, Charles Meth & Mohammed Jahed (2007) **Pro-Poor Economic Growth Models for South Africa**. Oxfam Great Britain, pp.1-59.

Alshuwaikhat, H.M. (2005) Strategic environmental assessment can help solve environmental impact assessment failures in developing countries, in: **Environmental Impact Assessment Review**, vol. 25, no. 4, pp.307-317.

Arms, K. (1994) **Environmental Science**. 2nd ed. Orlando: Saunders College Publishing.

Barber, B.R. (1972) **Superman and Common Men: Freedom, Anarchy and the Revolution**. Middlesex/Victoria: Penguin Books.

Barber, B.R. (1996) Foundationalism and Democracy, Chapter 20 in: Seyla Benhabib (ed) (1996) **Democracy and Difference: Contesting the Boundaries of the Political**. Princeton: Princeton University Press, pp.348-359.

Beatley, T. & Manning, K. (1997) **The Ecology of Place: Planning for Environment, Economy, and Community**. Washington, D.C., Island Press.

Bhorat, H. & Kanbur, R. (2006) Introduction: Poverty and well-being: An Overview of data, outcomes and policy, in: Haroon Bhorat & Ravi Kanbur (eds) (2006) **Poverty and Policy in Post-Apartheid South Africa**. HSRC Press, pp.1-17.

Blaikie, N. (2000) **Designing Social Research: The Logic of Anticipation**. Cambridge: Polity Press in association with Blackwell Publishing Ltd.

Blignaut, J.N. & de Wit, M.P. (2004) The economics of the environment, Chapter 3 in: James N. Blignaut & Martin P. de Wit (eds) (2004) **Sustainable Options. Economic development lessons from applied environmental resource economics in South Africa**. Cape Town: UCT Press, pp.53-81.

Bodibe, O. (2007) Economic policy in the era of liberation: ANC economic transformation policy proposals, Chapter 8 in: Omano Edigheji (ed) (2007) Rethinking South Africa's Developing Path: Reflections on the ANC's Policy Conference Discussion Documents, in: Special Edition of **Policy: Issues & actors**, vol. 20, no. 10, pp.75-80.

Bond, P. (2002) **Local Economic Development Debates in South Africa**. Municipal Services Project Occasional Paper Series Number 6, IDRC.

Bowles, S. & Gintis, H. (2008) Power, in: S.N. Durlauf & L.E. Blume (eds) (forthcoming). **The New Palgrave Encyclopedia of Economics**, MacMillan.

Brown, L., Flavin, C. & Postel, S. (1991) **Saving the Planet: How to Shape an Environmentally Sustainable Global Economy**. New York: Worldwatch Institute.

Bruhn-Tysk, S. & Eklund, M. (2002) Environmental impact assessment—a tool for sustainable development? A case study of biofuelled energy plants in Sweden, in: **Environmental Impact Assessment Review**, vol. 22, no. 2, New York: Elsevier Science Inc, pp.129-144.

Bulleid, P. (1997) Assessing the Need for EIA, Chapter 1 in: Joe Weston (ed) (1997) **Planning and Environmental Impact Assessment in Practice**. Essex: Pearson Education Limited, pp.26-41.

Caldwell, L.K. (1988) Environmental Impact Analysis (EIA): Origins, Evolution, and Future Directions, in: **Policy Study Review**, vol. 8, no. 1, August 1988, pp.75-83.

Callway, R. (2005) Introduction: Setting the Scene, Chapter 1 in: Georgina Ayre & Rosalie Callway (eds) (2005) **Governance for Sustainable Development: A Foundation for the Future**. London: Earthscan Publications Ltd, pp.3-13.

Cameron, R. (1999) **Democratisation of South African Local Government: A tale of three cities**. Pretoria: J.L. van Schaik Publishers.

Campbell, S. & Fainstein, S. (1996) Introduction: The Structure and Debates of Planning Theory, Chapter 1 in: Scott Campbell & Susan Fainstein (eds) **Readings in Planning Theory.** Malden/Oxford: Blackwell Publishing Inc/Ltd, pp.1-14.

Carmona, M. & Sieh, L. (2004) **Measuring Quality in Planning: Managing the Performance Process**. Oxon/New York: Spon Press.

Carson, R. (1970) **Silent Spring**. Middlesex: Penguin Books Limited. First published in 1962 by Houghton Mifflin.

Cashmore, M. (2004) The role of science in environmental impact assessment: process and procedure versus purpose in the development of theory, in: **Environmental Impact Assessment Review**, vol. 24, no. 4, New York: Elsevier Science Inc, pp.403-426.

Cashmore, M., Gwilliam, R., Morgan, R., Cobb, D. & Bond, A. (2004) The interminable issue of effectiveness: substantive purposes, outcomes, and research challenges in the advancement of environmental impact assessment theory, in: **Impact Assessment and Project Appraisal**, vol. 22, no. 4, December 2004, pp.295-310.

Chang, H. (2002) Kicking Away the Ladder: How the Economic and Intellectual Histories of Capitalism Have Been Re-Written to Justify Neo-Liberal Capitalism, in: **Post-Autistic Economics Review**, no. 15, article no. 3, 4 September 2002 [Internet]. Available from: <http://www.paecon.net/PAEtexts/Chang1.htm> [Accessed 30 May 2008].

Cilliers, P. (1998) **Complexity and Postmodernism: Understanding Complex Systems**. New York: Routledge.

Cilliers, P. (2000a) What can we learn from a theory of complexity? In: **Emergence**, 2(1), p.23-33.

Cilliers, P. (2000b) Knowledge, Complexity and Understanding, in: **Emergence**, 2(4), p.7-13.

Cilliers, P. (2003) Complexity, Ethics and Justice, in: **Humanistiek**, 19, p.19-25.

Claassen, P.E. (2002) **The Role of Environmental Management (Spatial Planning, Development Planning & Conservation of the Natural Environment) in Promoting Sustainable Development in South Africa**. School for Public Management and Planning, University of Stellenbosch.

Cock, J. & Fig, D. (2001) The impact of globalisation on environmental politics in South Africa, 1990 – 2002, in: **African Sociological Review**, vol. 5, no. 2, 14 pages.

Craythorne, D.L. (2006) **Municipal Administration: The Handbook**. Sixth Edition. Cape Town: Juta & Company Ltd.

Clayton, A. & Radcliffe, N. (1996) **Sustainability: A systems approach**. London: Earthscan Publications Ltd.

Cock, J. (2007) **The War Against Ourselves: Nature, Power and Justice**. Johannesburg: Wits University Press.

Coetzee, M. (2002) **Local Pathway to Sustainable Development in South Africa: Summary Document on the IDP-LA21 Relationship**. Pretoria: South African Government Printers. Published and disseminated at the 2002 World Summit.

Cohen, P. (2007) In Economics Departments, a Growing Will to Debate Fundamental Assumptions, in: **The New York Times**, 11 July 2007 [Internet]. Available from: <http://www.nytimes.com/2007/07/11/education/11economics.html> [Accessed 17 October 2007].

Connelly, S. & Richardson, T. (2005) Value-driven SEA: time for an environmental justice perspective?, in: **Environmental Impact Assessment Review**, vol. 25, no. 4, New York: Elsevier Science Inc, pp.391-409.

Couclelis, H. (2005) “Where has the future gone?" Rethinking the role of integrated land-use models in spatial planning, in: **Environment and Planning A**, vol. 37, pp.1353-1371.

Courtney, J.F., Richardson, S. & Paradice, D. (2004) Decision support systems for ecosystems management: a Singerian approach to urban infrastructure decision-making, Chapter 13 in: M.A. Quaddus & M.A.B. Siddique (eds) (2004) **Handbook of Sustainable Development Planning: Studies in Modelling and Decision Support**. Cheltenham: Edward Elgar Publishing Limited, pp.271-288.

Cowlard, K. (2002) **Decision-making in Geography: a handbook of method and practice.** Second Edition. London: Hodder & Stoughton.

CSD (1995) Integrated Approach to the Planning and Management of Land Resources; In: **Review of Sectoral Clusters, Second Phase: Land, Desertification, Forests and Biodiversity**. United Nations Economic and Social Council, Commission on Sustainable Development [Internet]. Available from: <http://www.un.org/esa/documents/ecosoc/cn17/1995/ecn171995-2.htm> [Accessed 18 August 2001].

Cullinan, C. (2002) **Wild Law: Governing people for Earth**. Cape Town: Siber Ink CC.

Davids, I., Theron, F. & Maphunye, K.J. (2005) **Participatory Development in South Africa: A Development Management Perspective**. Pretoria: Van Schaik Publishers.

De Bono, E. (1985) **de Bono’s Thinking Course**. London and New York: Facts on File Publications Inc.

Devenish, G.E. (1999) **A commentary on the South African Bill of Rights**. Durban: Butterworths Publishing (Pty) Ltd.

Dewar, D. (2007) Environmental and Heritage Impact Assessments and Spatial Planning: A Critique. Paper presented at the **IAIAsa’07 regional southern African conference**.

Diamond, R. (2006) **Collapse: How Societies Choose to Fail or Survive**. London: Penguin Books Ltd. First published in 2005 in the United States of America by Viking Penguin.

Dresner, S. (2002) **The Principles of sustainability**. London: Earthscan Publication Ltd, pp.63-74.

Duinker, P.N. & Greig, L.A. (2007) Scenario analysis in environmental impact assessment: Improving explorations of the future, in: **Environmental Impact Assessment Review**, vol. 27, no. 3, pp.206-219.

Du Toit, A. (2004) **Forgotten by the highway: Globalisation, adverse incorporation and chronic poverty in a commercial farming district of South Africa**. Chronic Poverty Reseach Centre. PLAAS Chronic poverty and development policy series no. 4. CPRC Working Paper 49.

Easterbrook, G. (2004) **The Progress Paradox: How Life Gets Better While People Feel Worse**. New York: Random House.

Edigheji, O. (2005) **A Democratic Developmental State in Africa?** A concept paper. Research Report 105. CPS 'State Series'. Johannesburg: Centre for Policy Studies (CPS), pp.1-22.

Edigheji, O. (2007) Rethinking South Africa's Developing Path, Chapter 1 in: Omano Edigheji (ed) (2007) Rethinking South Africa's Developing Path: Reflections on the ANC's Policy Conference Discussion Documents, in: Special Edition of **Policy: Issues & actors**, vol. 20, no. 10, pp.10-22.

Edney, J. (2005) Greed (Part 1), in: **Post-Autistic Economics Review**, no. 31, article no. 2, 16 May 2005 [Internet]. Available from: <http://www.paecon.net/PAEReview/issue31/Edney31.htm> [Accessed 30 May 2008].

Elkington, J. (2004) Enter the Triple Bottom Line, Chapter 1 in: Adrian Henriques & Julie Richardson (eds) (2004) **The Triple Bottom Line, does it all add up?: assessing the sustainability of business and CSR**. London: Earthscan Publications Ltd, pp.1-16.

Evans, P. (1995) States, Chapter 3 in: Peter Evans (1995) **Embedded Autonomy: States and Industrial Transformation**. New Jersey: Princeton University Press, pp.43-73.

Evans, P. (2007) Expanding Human Capabilities as a Strategy of Economic Transformation: A 21st Century Agenda for the Developmental State, Chapter 6 in: Omano Edigheji (ed) (2007) Rethinking South Africa's Developing Path: Reflections on the ANC's Policy Conference Discussion Documents, in: Special Edition of **Policy: Issues & actors**, vol. 20, no. 10, pp.56-61.

Fakir, E. (2007) Strategy and Tactics: What of Ideology and Who are the Motive Forces?, Chapter 2 in: Omano Edigheji (ed) (2007) Rethinking South Africa's Developing Path: Reflections on the ANC's Policy Conference Discussion Documents, in: Special Edition of **Policy: Issues & actors**, vol. 20, no. 10, pp.23-31.

Gallopin, G. (2003) **A systems approach to sustainability and sustainable development**. Chile: United Nations Publication.

Garvin, D. (1987) Competing on the eight dimensions of quality, in: Harvard Business Review, November-December, pp.101-109, quoted in: Carmona, M. & Sieh, L. (2004) **Measuring Quality in Planning: Managing the Performance Process**. Oxon/New York: Spon Press.

George, C. (1999) Testing for Sustainable Development through Environmental Assessment, in: **Environmental Impact Assessment Review**, vol. 19, no. 2, New York: Elsevier Science Inc, pp.175-200.

Girardet, H. (1999) Sustainable Cities: A Contradiction in Terms?, Chapter 19 in Satterthwaite, David, editor (1999): **The Earthscan Reader in Sustainable Cities**. London: Earthscan Publications Ltd, pp.413-425.

Goldsmith, E., Allen, R., Allaby, M., Davoll, J. & Lawrence, S. (1972) **Blueprint for Survival**. Published by the enditors of *The Ecologist*. New York: Signet/The New American Library, Inc.

Gouldson, A. & Roberts, P. (2000) Integrating environment and economy: The evolution of theory, policy and practice, Chapter 1 in: Andrew Gouldson & Peter Roberts (eds) (2001) **Integrating Environment and Economy: Strategies for local and regional government**. London/New York: Routledge, pp.3-21.

Graham, P. (2003) **Building Ecology: First Principles for a Sustainable Built Environment**. Victoria: Blackwell Science Ltd.

Hardin, G. (1968) The Tragedy of the Commons. Science, Vol. 162, No. 3858 (December 1968), 1243-48. American Association for the Advancement of Science. Quoted in: VanDeVeer, D. & Pierce, C. (2003) **The Environmental Ethics and Policy Book**. 3rd ed. Toronto: Wadsworth/Thomson Learning, pp.364-372.

Harrison, P. (2002) Subverting Orthodoxy: A Re-look at the “Truths” of Post-Apartheid Planning. Paper presented at the **SAPI Planning Africa 2002 Conference**, September 2002, pp.1027-1079.

Harrison, P. (2008) The Origins of Outcomes of South Africa’s Integrated Development Plans, Chapter 14 in: Mirjam van Donk, Mark Swilling, Edgar Pieterse and Susan Parnell (eds) (2008) **Consolidating Developmental Local Government: Lessons from the South African Experience**. Cape Town: UCT Press, pp.321-337.

Harrison, P., Todes, A. & Watson, V. (2008) **Planning and Transformation: Learning from the Post-Apartheid Experience**. Abingdon: Routledge.

Haughton, G. & Counsell, D. (2004) **Regions, Spatial Strategies and Sustainable Development**. London: Routledge.

Heller, M.A. (1998) The tragedy of the anticommons: property in the transition from Marx to markets. Harvard Law Review, vol. 1113, p.621-688. Quoted in: Mukhija, V. (2005) Collective Action and Property Rights: A Planner's Critical Look at the Dogma of Private Property, in: **International Journal of Urban and Regional Research**, vol. 29, no. 4, December 2005, pp. 972-983.

Henning, E., Gravett, S. & van Rensburg, W. (2005) **Finding your way in Academic Writing**. Second Edition. Pretoria: Van Schaik Publishers.

Hilding-Rydevik, T. & Bjarnadóttir, H. (2007) Context awareness and sensitivity in SEA implementation, in: **Environmental Impact Assessment Review**, vol. 27, no. 7, New York: Elsevier Science Inc, pp.666-684.

Hussen, A.M. (2000) **Principles of Environmental Economics: Economics, Ecology and Public Policy**. London: Routledge.

IAIAsa (2007) **Proceedings of the IAIAsa'07 regional southern African conference** [Internet]. Available from: <http://www.iaia.co.za/Conference_2007> [Accessed 12 January 2008].

Innes, J. & Booher, D.E. (2000) Indicators for Sustainable Communities: A Strategy Building on Complexity Theory and Distributed Intelligence, in: **Planning Theory and Practice**, vol. 1, no. 2, pp.173-186.

Innes, J. & Booher, D.E. (2002) The impact of collaborative planning on governance capacity. Paper presented at the Annual Conference of the Collegiate Schools of Planning, Baltimore, 21-24 November, quoted in: Harrison, P. (2008) The Origins of Outcomes of South Africa's Integrated Development Plans, Chapter 14 in: Mirjam van Donk, Mark Swilling, Edgar Pieterse and Susan Parnell (eds) (2008) **Consolidating Developmental Local Government: Lessons from the South African Experience**. Cape Town: UCT Press, pp.321-337.

Jaffe, M.S. (2004) Can Capital Improvements Programs Protect Environmental Quality?, in: **Planning & Environmental Law**, Jun 2004; vol. 56, no. 6; ABI/INFORM Trade & Industry, pp.3-7.

Jessop, B. (2001) Capitalism, the Regulation Approach, and Critical Realism, in: A. Brown, S. Fleetwood & J. Roberts (eds) (2001). **Critical Realism and Marxism**, London: Routledge.

Johnson, D.L. (n.d.) **Beyond Managing Growth: Managing Planning's Relationship with People**. Growing Smart[SM] Working Paper [Internet]. Available form: <http://www.planning.org/casey/pdf/JOHNSON.PDF> [Accessed 18 May 2008].

Jomo, K.S. (2005) Economic Reform For Whom? Beyond The Washington Consensus, in: **Post-Autistic Economics Review**, no. 35, article no. 2, 5 December 2005 [Internet]. Available from: <http://www.paecon.net/PAEReview/issue35/Jomo35.htm> [Accessed 30 May 2008].

Kanbur, R. (2001) **Economic Policy, Distribution and Poverty: The Nature of Disagreements**. Cornell University.

Kast, F. & Rosenzweig, J. (1972) General Systems Theory: Applications for Organization and Management, Chapter 28 in: Gerald Midgley (editor) (2003). **Systems Thinking. Volume 2: Systems Theories and Modelling**, London: SAGE Publications Ltd, p.157-174.

Keegan, W. (1993) **The Spectre of Capitalism: The Future of the World Economy After the Fall of Communism**. London: Vintage Books.

Keyes, R. (2006) The quote verifier: Who Said What, Where, and When. St. Martin's Press [Internet]. Available from: <http://www.volokh.com/posts/1177998093.shtml> [Accessed 11 May 2008].

Khan, F. (n.d.) **The Principals of Developmental Local Government**. Research papers for the White Paper on Local Government. Cluster 2: A developmental role for local government [Internet]. Available from: http://www.dplg.gov.za [Accessed 11 October 2008].

King, L. & McCarthy, D. (2005) Introduction: Environmental Problems Require Social Solutions, in: Leslie King and Deborah McCarthy (eds) (2005) **Environmental Sociology: From Analysis to Action**. Lanham: Rowman & Littlefield Publishers, Inc, pp.xi-xxx.

Knight, C. (2004) **Miracles of Hope: Surviving and Thriving in the 21st Century.** Cape Town: White Rock Publishers.

Knoepfel, P., Larrue, C., Varone, F. & Hill, M. (2007) **Public Policy Analysis**. Bristol: The Policy Press.

Kraft, M.E. & Furlong, S.R. (2007) **Public Policy: Politics, Analysis, and Alternatives**. Washington, DC: CQ Press.

Lance, N.M. & Saulsbury, J.W. (1998) Defining the No-Action Alternative for National Environmental Policy Act Analyses of Continuing Actions, in: **Environmental Impact Assessment Review**, vol. 18, no. 1, New York: Elsevier Science Inc, pp.15-37.

Lawrence, D.P. (2000) Planning theories and environmental impact assessment, in: **Environmental Impact Assessment Review**, vol. 20, no. 6, New York: Elsevier Science Inc, pp.607-625.

Lee, N. (2000) Reviewing the Quality of Environmental Assessments, Chapter 8 in: Norman Lee & Clive George (eds) (2000) **Environmental Assessment in Developing and Transitional Countries: Principles, Methods and Practice**. Chichester: John Wiley & Sons Ltd, pp.137-148.

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

Lee-Wright, M. (1997) Taking Charge of the Environmental Team, Chapter 2 in: Joe Weston (ed) (1997) **Planning and Environmental Impact Assessment in Practice**. Essex: Pearson Education Limited, pp.42-59.

Legum, M. (2002) **It doesn't have to be Like This! A New Economy for South Africa and the World**. Kenilworth: Ampersand Press.

Lélé, S.M. (1991) Sustainable Development: Critical Review, in: World Development, vol. 19, no. 6, June, pp.607-621, Chapter 7 in: Jessie Poon, Kenneth Button & Peter Nijkamp (eds) (2006) **Classics in Planning 1: Social Planning**. Cheltenham/Northampton: Edward Elgar Publishing, pp.139-153.

Lemass, S. (n.d.) A rising tide lifts all boats, in: **Wikipedia** [Internet]. Available from: <http://en.wikipedia.org/wiki/A_rising_tide_lifts_all_boats> [Accessed 17 October 2007].

Lund, H. & Hvelplund, F. (1997) Does Environmental Impact Assessment Really Support Technological Change? Analyzing Alternatives to Coal-Fired Power Stations in Denmark, in: **Environmental Impact Assessment Review**, vol. 17, no. 5, New York: Elsevier Science Inc, pp.357-370.

Mair, V.H. (n.d.) **danger + opportunity ≠ crisis: How a misunderstanding about Chinese characters has led many astray**. Department of East Asian Languages and Civilizations, University of Pennsylvania, Philadelphia [Internet]. Available from: < http://www.pinyin.info/chinese/crisis.html > [Accessed 24 February 2008].

Malthus, T.R. (1803) An Essay on the Principle of Population. Quoted in: VanDeVeer, D. & Pierce, C. (2003) **The Environmental Ethics and Policy Book**. 3rd ed. Toronto: Wadsworth/Thomson Learning, pp.397-401.

Marriott, A (2004) **What should be the balance of emphasis in South African cities between economic programmes focussed on poverty reduction and those aimed at building globally competitive economic environments?** (unpublished student paper)

Marx, K. & Engels, F. (1848) The Communist Manifesto. Translated by Samuel Moore in 1888 and published in 1967. London: Penguin. Quoted in: Monbiot, G. (2004) **The Age of Consent: A Manifesto for a New World Order**. London: Harper Perennial.

Maxwell, S. & Conway, T. (2000) New Approaches to Planning. **Operations Evaluation Department Working Paper Series**, no. 14, Summer 2000. Washington, D.C.: The World Bank.

Mbeki, T. (2004) **Address by the President of South Africa, Thabo Mbeki, on the Occasion of his Inauguration and the 10th Anniversary of Freedom**. Union Buildings, Pretoria, 27 April 2004 [Internet]. Available from: <http://www.anc.org.za> [Accessed 5 September 2007].

Mbeki, T. (2008) **State of the Nation Address of the President of South Africa.** 8 February 2008 [Internet]. Available from: <http://www.anc.org.za> [Accessed 24 February 2008].

McCold, L.N. & Saulsbury, J.W. (1998) Defining the No-Action Alternative for National Environmental Policy Act Analysis of Continuing Actions, in: **Environmental Impact Assessment Review**, vol. 18, New York: Elsevier Science Inc, pp.15-37.

McDonald, G.T. & Brown, L. (1995) Going Beyond Environmental Impact Assessment: Environmental Input to Planning and Design, in: **Environmental Impact Assessment Review**, vol. 15, New York: Elsevier Science Inc, pp.483-495.

Meadows, D.H., Meadows, D.L., Randers, J. & Behrens, W.W. III. (1974) **The Limits to Growth: A report for the Club of Rome's project on the predicament of mankind**. London: Pan Books Ltd. First published in Great Britain in 1972.

Mebratu, D. (1998) Sustainability and sustainable development: Historical and conceptual review, in: **Environmental Impact Assessment Review**, vol. 18, no. 6, New York: Elsevier Science Inc, pp.493-520.

Meth, C. (2007) What is Pro Poor Growth? What are some of the things that hinder its achievement in South Africa?, in: **Pro-Poor Economic Growth Models for South Africa**. Oxfam Great Britain, pp.60-132.

Mkandawire, T. (2001) **Social Policy in a Developing Context**. Social Policy and Development Programme Paper No. 07. Switzerland: United Nations Research Institute for Social Development.

Moffatt, I. (2004) Hierarchical, dynamic modelling and sustainable development, Chapter 2 in: M.A. Quaddus & M.A.B. Siddique (eds) (2004) **Handbook of Sustainable Development Planning: Studies in Modelling and Decision Support**. Cheltenham: Edward Elgar Publishing Limited, pp.13-28.

Monbiot, G. (1994) The Tragedy of Enclosure. Quoted in: VanDeVeer, D. & Pierce, C. (2003) **The Environmental Ethics and Policy Book**. 3rd ed. Toronto: Wadsworth/Thomson Learning, pp.373-374.

Monbiot, G. (2004) **The Age of Consent: A Manifesto for a New World Order**. London: Harper Perennial.

Moriarty, M.F. (1997) **Writing Science through Critical Thinking**. Sudbury: Jones and Bartlett Publishers.

Morrison-Saunders, A. & Fischer, T.B. (2006) What is Wrong with EIA and SEA Anyway? A Sceptic's Perspective on Sustainability Assessment, in: **Journal of Environmental Assessment Policy and Management**, vol. 8, no. 1, March 2006, pp.19-39.

Mouton, J. (2001) **How to succeed in your Master's and Doctoral Studies: A South African Guide and Resource Book**. Eight Impression, 2005. Pretoria: Van Schaik Publishers.

Muller, A. (2006) Sustainability and Sustainable Development as the Making of Connections: Lessons for Integrated Development Planning in South Africa. Paper presented at the **SAPI Planning Africa 2006 Conference**, March 2006, pp.1027-1079.

Neuendorf, K.A. (2002) **The Content Analysis Guidebook.** Thousand Oaks: Sage Publications Inc.

Noble, B.F. (2000) Strengthening EIA through Adaptive Management: A Systems Perspective, in: **Environmental Impact Assessment Review**, vol. 20, no. 1, New York: Elsevier Science Inc, pp.97-111.

Nooteboom, S. (2007) Impact assessment procedures for sustainable development: A complexity theory perspective, in: **Environmental Impact Assessment Review**, vol. 27, no. 7, New York: Elsevier Science Inc, pp.645-665.

Ngcobo, J. (2007) **Fuel Retailers Association of Southern Africa v. Director-General Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province & others (Case CCT 67/06) (2007)**.

O'Brien, M. (2000) **Making Better Environmental Decisions: An Alternative to Risk Assessment.** London: Environmental Research Foundation.

Ocampo, J.A. (2002) Rethinking the development agenda, in: **Cambridge Journal of Economics**, vol. 26, pp. 393-407.

Oelofse, C., Scott, D. Oelofse, G. & Houghton, J. (2006) Shifts within Ecological Modernization in South Africa: Deliberation, Innovation and Institutional Opportunities, in: **Local Environment**, vol. 11, no. 1, pp.61-78.

Oranje, M., Harrison, P., van Huyssteen, E. & Meyer, E. (2000) **A Policy Paper on Integrated Development Planning**. Final Draft. The Department of Provincial and Local Government, Republic of South Africa.

Parnell, S. & Pieterse, E. (1998) **Developmental Local Government: The Second Wave of Post-Apartheid Urban Reconstruction**. Dark Roast Occasional Paper Series No. 1. Cape Town: Isandla Institute.

Parasuraman, A., Zeithamal, V. and Berry, L. (1985) A conceptual model of service quality and its implications for future research, in: Journal Of Marketing, vol. 49, p.48, quoted in: Carmona, M. & Sieh, L. (2004) **Measuring Quality in Planning: Managing the Performance Process**. Oxon/New York: Spon Press.

Patel, Z. (2008) Tools and Trade-offs in Environmental Decision making, Chapter 16 in: Mirjam van Donk, Mark Swilling, Edgar Pieterse and Susan Parnell (eds) (2008) **Consolidating Developmental Local Government: Lessons from the South African Experience**. Cape Town: UCT Press, pp.357-375.

Pezzoli, K. (1996) **Sustainable Development: A Transdisciplinary Overview of the Literature**. Paper presented at the Joint International Congress of the Association of Collegiate Schools of Planning (ACSP) and the Association of the European Schools of Planning, July 25-28, 1996 in Toronto, Canada.

Pieterse, E. (2004) Recasting Urban Integration and Fragmentation in Post-Apartheid South Africa, in: **Development Update**, vol. 5, no. 1, April 2004, pp.81-104.

Pillay, D. (2007) The 'Social Pact": A Thin Conception of Democratic Participation, Chapter 10 in: Omano Edigheji (ed) (2007) Rethinking South Africa's Developing Path: Reflections on the ANC's Policy Conference Discussion Documents, in: Special Edition of **Policy: Issues & actors**, vol. 20, no. 10, pp.86-92.

Porritt, J. (1984) **Seeing Green: The Politics of Ecology Explained**. Oxford: Basil Blackwell Ltd.

Porritt, J. (2005) **Capitalism as if the World Matters**. London: Earthscan Publications Ltd.

Portney, K. (2001) **Taking Sustainable Cities Seriously: A Comparative Analysis of Twenty-Three U.S. Cities**. Paper presented to 2001 Meeting of the American Political Science Association, August 30 – September 2, San Francisco, California [Internet]. Available from: <www.urbanecology.washington.edu/.../classes/spring2004/portney-taking-sustainability-seriously-in-cities.pdf> [Accessed 12 September 2006].

Ray, J.L. (1995) **Global Politics**. Sixth Edition. Boston, Florida State University/Houghton Mifflin Company.

Rees, W. (1996) Revisiting Carrying Capacity: Area-Based Indicators of Sustainability, in **Population and Environment**, vol. 17, no. 3, January 1996 [Internet]. Available from: <http://dieoff.org/page110.htm> [Accessed 7 June 2006].

Renn, O. (2002) Foresight and multi-level governance. Paper presented at the conference "Role of Foresight in the Selection of Research Policy Priorities" organised by IPTS Seville, quoted in Voß, J., Truffer, B. & Konrad, K. (2006) Sustainability foresight: reflexive governance in the transformation of utility systems, Chapter 7 in: Jan-Peter Voß, Dierk Bauknecht & René Kemp (eds) (2006) **Reflexive Governance for Sustainable Development**. Cheltenham/Northampton: Edward Elgar Publishing, pp.162-188.

Retief, F. (2007) A performance evaluation of strategic environmental assessment (SEA) processes within the South African context, in: **Environmental Impact Assessment Review**, vol. 27, no. 1, New York: Elsevier Science Inc, pp.84-100.

Richardson, J. (2004) Accounting for Sustainability: Measuring Quantities or Enhancing Qualities?, Chapter 4 in: Adrian Henriques & Julie Richardson (eds) (2004) **The Triple Bottom Line, does it all add up?: assessing the sustainability of business and CSR**. London: Earthscan Publications Ltd, pp.34-44.

Rittel, H. & Webber, M. (1973) Dilemmas on a General Theory of Planning, in: **Policy Science**, vol. 4, Amsterdam: Elsevier Scientific Publishing Company, pp. 155-169.

Robinson, J. (2008) Continuities and Discontinuities in South African Local Government, Chapter 2 in: Mirjam van Donk, Mark Swilling, Edgar Pieterse and Susan Parnell (eds) (2008) **Consolidating Developmental Local Government: Lessons from the South African Experience**. Cape Town: UCT Press, pp.27-49.

Rossouw, N., Davies, S., Fonrtuin, H., Rapholo, B., de Wit, M. (2003) South Africa. In: Peter Tarr (compiler) (2003) **Environmental impact assessment in southern Africa**. Windhoek: South African Institute for Environmental Assessment (SAIEA), pp.201-225.

Rouse, D., Chandler, T.M., & Arason, J. (1999) **The 21st Century Comprehensive Plan**; paper presented at the American Planning Association National Planning Conference, 1999 [Internet]. Available from: <http://www.asu.edu/caed/proceedings99/ROUSE/ROUSE.HTM> [Accessed 2 May 2006].

Runhaar, H., Dieperink, C. & Driessen, P. (2006) Policy analysis for sustainable development: The toolbox for the environmental social scientist, in: **International Journal of Sustainability in Higher Education**, vol. 7, no. 1, Emerald Group Publishing Limited, pp. 34-56.

Sachs, M. (2007) The End of the History is Over, Chapter 3 in: Omano Edigheji (ed) (2007) Rethinking South Africa's Developing Path: Reflections on the ANC's Policy Conference Discussion Documents, in: Special Edition of **Policy: Issues & actors**, vol. 20, no. 10, pp.32-42.

Sachs, W. & Agrawal, H. eds. (2002) **The Jo'burg Memo. Fairness in a Fragile World**. Memorandum for the World Summit on Sustainable Development. World Summit Papers. Special Edition. Berlin: Heinrich Böll Foundation.

Sainath, P. (2006) What Exactly is "Development"?, in: **Post-Autistic Economics Review**, no. 38, article no. 6, 1 July 2006 [Internet]. Available from: <http://www.paecon.net/PAEReview/issue38/Sainath38.htm> [Accessed 30 May 2008].

Sandercock, L. (1998) The Difference that Theory makes, Chapter 4 in: Sandercock, Leonie (1998) **Towards Cosmopolis: Planning for Multi-Cultural Cities**. Chichester/New York/Weinheim/Brisbane/Singapore/Toronto: John Wiley & Sons, pp.85-104.

Sandham, L.A. & Pretorius, H.M. (2008) A review of EIA report quality in the North West province of South Africa, in: **Environmental Impact Assessment Review**, vol. 28, May-June, New York: Elsevier Science Inc, pp.229-240.

Schumacher, E.F. (1974) **Small is Beautiful: A Study of Economics as if People Mattered.** London: Sphere Books Ltd. First published in 1973 by Blond and Briggs Ltd.

Sen, A. (2000) **Development as Freedom**. New York, Anchor Books. First published in 1999.

Shearer, A.W. (2005) Approaching scenario-based studies: three perceptions about the future and considerations for landscape planning, in: **Environment and Planning B: Planning and Design**, vol. 32, Great Britain: Pion, pp.67-87.

Simpson, J. (2001) Developing a review package to assess the quality of EA reports of Local Authority structure and local plans in the UK, in: **Environmental Impact Assessment Review**, vol. 21, no. 1, New York: Elsevier Science Inc, pp.83-95.

Smith, M.D. (2007) A review of recent NEPA alternatives analysis case law, in: **Environmental Impact Assessment Review**, vol. 27, no. 2, New York: Elsevier Science Inc, pp.126-144.

South African Concise Oxford Dictionary (2002) Cape Town: Oxford University Press Southern Africa.

Steinemann, A. (2001) Improving Alternatives for Environmental Impact Assessment, in: **Environmental Impact Assessment Review**, vol. 21, no. 1, New York: Elsevier Science Inc, pp.3-21.

Stiglitz, J.E. (2002) **Globalization and Its Discontents**. London: Allen Lane The Penguin Press, pp.1-22.

Stone, D. (2002) **Policy Paradox: The Art of Political Decision Making**. Revised Edition. New York/London: W.W. Norton & Company.

Swatuk, L.A. (2006) Environmental Issues and Prospects for Southern African Regional Co-operation, in: **Monograph No 4: People Poverty and Peace, Human Security in Southern Africa, May 1996**, [Internet]. Available from: <http://www.iss.co.za/Pubs/Monographs/No4/Swatuk.html> [Accessed 12 October 2008].

Swilling, M. (2006) Sustainability and infrastructure planning in South Africa: a Cape Town case study, in: **Environment and Urbanization**, vol. 18, no. 1, London/Thousand Oaks/New Delhi: SAGE Publications, pp.23-50.

Swilling, M. (2008) Local Government and the Politics of Sustainability, Chapter 4 in: Mirjam van Donk, Mark Swilling, Edgar Pieterse and Susan Parnell (eds) (2008) **Consolidating Developmental Local Government: Lessons from the South African Experience**. Cape Town: UCT Press, pp.77-107.

Swilling, M., Davids, R., Ward, W., Wetmore, S., Jackson, N., Paschke, S., Moosa, S. & Khan, F. (2005) **Cape Town 2025: A City of Sustainable Neighbourhoods**. Paper presented at the conference on 'Cape Town 2025', June, 2005, Isandla Institute, Cape Town, South Africa.

Ten Kate, K., Bishop, J., & Bayon, R. (2004) **Biodiversity offsets: Views, experience, and the business case**. London: IUCN, Gland, Switzerland and Cambridge, UK and Insight Investment.

The Worldwatch Institute (2006) **State of the World 2006: A Worldwatch Institute Report on Progress Towards a Sustainable Society. Special Focus: China and India**. New York: W.W. Norton & Company Inc.

Theron, J. (2007) When will the real dialogue begin?, Chapter 26 in: Omano Edigheji (ed) (2007) Rethinking South Africa's Developing Path: Reflections on the ANC's Policy Conference Discussion Documents, in: Special Edition of **Policy: Issues & actors**, vol. 20, no. 10, pp.190-192.

Tickner, J.A. & Geiser, K. (2004) The precautionary principle stimulus for solutions- and alternatives-based environmental policy, in: **Environmental Impact Assessment Review**, vol. 24, no. 7-8, New York: Elsevier Science Inc, pp.801-824.

Tillman, A. (2000) Significance of Decision-making for LCA Methodology, in: **Environmental Impact Assessment Review**, vol. 20, no. 1, New York: Elsevier Science Inc, pp.113-123.

Tisdell, C. (2004) Sustainability: can it be achieved? Is economics the bottom line? Chapter 4 in: M.A. Quaddus & M.A.B. Siddique (eds) (2004) **Handbook of Sustainable Development Planning: Studies in Modelling and Decision Support**. Cheltenham: Edward Elgar Publishing Limited, pp.60-74.

UNCED (1992) **Agenda 21: Chapter 10 – Integrated Approach to the Planning and Management of Land Resources**. United Nations Department of Economic and Social Affairs, United Nations Conference on Environment and Development, [Internet]. Available from: <http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter10.htm> [Accessed 18 August 2001].

UN-HABITAT. (2004) **Urban Land For All**. United Nations Human Settlements Programme (UN-HABITAT) [Internet]. Available from: <http://www.unhabitat.org> [Accessed 1 September 2006].

Valve, H. (1998) Frame Conflicts and the Formulation of Alternatives: Environmental Assessment of an Infrastructure Plan, in: **Environmental Impact Assessment Review**, vol. 19, no. 2, New York: Elsevier Science Inc, pp.125-142.

Vanclay, F. (2004) The Triple Bottom Line and Impact Assessment: How do TBL, EIA, SIA, SEA and EMS relate to each other?, in: **Journal of Environmental Assessment Policy and Management**, vol. 6, no. 3, September, p.265-288.

VanDeVeer, D. & Pierce, C. (2003) **The Environmental Ethics and Policy Book**. 3rd ed. Toronto: Wadsworth/Thomson Learning, pp.364-372.

Van Huyssteen, E. (2000) **Interdependence of Plots, Processes and Partners: A case study of Integrated Development Planning and local governance in South Africa**. Draft Copy of a paper presented at the Planning Research Conference, 2000, London, [Internet]. Available from: <http://www.up.ac.za/academic/townplan/Plot_processes_partners.pdf> [Accessed 16 May 2006].

van Niekerk, D., van der Waldt, G. & Jonker, A. (2001) **Governance, Politics, and Policy in South Africa**. Cape Town: Oxford University Press.

van Schalkwyk, R. (1998) **One Miracle Is Not Enough**. Sandown: Bellwether Publishers.

Veitch, R. & Arkkelin, D. (1995) **Environmental Psychology: An Interdisciplinary Perspective**. Upper Saddle River, New Jersey: Prentice-Hall, Inc.

Venter, A. (2007) Integrated development planning as an approach to sustainable development, Chapter 6 in: Gerrit van der Waldt (editor) (2007) **Municipal Management: Serving the People**. Cape Town: Juta & Company Ltd, pp.93-107.

Visser, G. (n.d.) **Social Justice, Integrated Development Planning and Post Apartheid Urban Reconstruction**, [Internet]. Available from: <http://www.lse.ac.uk/collections/geographyAndEnvironment/research/Researchpapers/rp63.pdf> [Accessed 16 May 2006].

Visser, W. (n.d.) **Sustainable Development: A Scorecard of Progress and Pitfalls**, [Internet]. Available from: <http://www.enviropaedia.com/topic/default.php?topic_id=256> [Accessed 12 October 2008].

Visser, W. & Sunter, C. (2002) **Beyond Reasonable Greed: Why Sustainable Business is a Much Better Idea!** Cape Town: Human & Rousseau and Tafelberg.

Voß, J. & Kemp, R. (2006) Sustainability and reflexive governance: introduction, Chapter 1 in: Jan-Peter Voß, Dierk Bauknecht & René Kemp (eds) (2006) **Reflexive Governance for Sustainable Development**. Cheltenham: Edward Elgar Publishing Limited, pp.3-28.

Wackernagel, M. & Rees, W. (2004) Footprints and Sustainability, Chapter 2 in: Mathis Wackernagel & William Rees (2004) **Our Ecological Footprint: Reducing Human Impact on the Earth**. Gabriola: New Society, pp.31-60.

Wesson, J. (1997) Lessons from EIA in Practice, Chapter 9 in: Joe Weston (ed) (1997) **Planning and Environmental Impact Assessment in Practice**. Essex: Pearson Education Limited, pp.180-200.

White, G. (1998) Constructing a Democratic Developmental State, in: Robinson, M. & White, G. (eds) (1998) The Democratic Developmental State: Political and Institutional Design. Oxford: Oxford University Press, p.28, in: Edigheji, O. (2005) **A Democratic Developmental State in Africa?** A concept paper. Research Report 105. CPS 'State Series'. Johannesburg: Centre for Policy Studies (CPS), pp.1-22.

White, R. (1994) **The Sustainable City – Illusion or Necessity?** Paper presented at Regional Conference of the International Geographical Union, August 22-24, Prague [Internet]. Available from: <http://www.utoronto.ca/env/papers/whiter/c_prague-paper.html> [Accessed 12 September 2006].

Xiangô, W. & Clarke, K.C. (2003) The use of scenarios in land-use planning, in: **Environment and Planning B: Planning and Design**, vol. 30, Great Britain: Pion, pp.885-909.

Legislation, Policies and Guidelines

DDPTT (2001) **The Principles of Integrated Development Planning and Assessment of the Process 2001/2002**. Decentralized Development Planning Task Team (DDPTT). Pretoria: South African Government Printers.

DEA&DP (2004) **Growth Potential of Towns in the Western Cape**. Western Cape Department of Environmental Affairs and Development Planning (DEA&DP), Republic of South Africa.

DEA&DP (2005) **Western Cape Provincial Spatial Development Framework**. Western Cape Department of Environmental Affairs and Development Planning (DEA&DP), Republic of South Africa.

DEA&DP (2006) **Guideline on Alternatives**. NEMA Environmental Impact Asssessment Regulations Guideline and Information Document Series. June 2006. Western Cape Department of Environmental Affairs and Development Planning (DEA&DP), Republic of South Africa.

DEA&DP (2007) **Guideline on Alternatives**. NEMA Environmental Impact Asssessment Regulations Guideline and Information Document Series. September 2007. Western Cape

Department of Environmental Affairs and Development Planning (DEA&DP), Republic of South Africa.

DEA&DP & WCPDC (2005) **Towards a Sustainable Development Implementation Plan for the Western Cape**. Department of Environmental Affairs and Development Planning (DEA&DP) together with the Western Cape Provincial Development Council (WCPDC), Republic of South Africa [Internet]. Available from: <http://www.capegateway.gov.za/eadp> [Accessed 23 May 2006].

DEAT (1997) **White Paper on Environmental Management Policy**. Department of Environmental Affairs and Tourism (DEAT), Republic of South Africa.

DEAT (1998) **Guideline Document: EIA Regulations – Implementation of Section 21, 22 and 26 of the Environment Conservation Act.** Department of Environmental Affairs and Tourism (DEAT), Republic of South Africa.

DEAT (2000) **Guideline Document: Strategic Environmental Assessment in South Africa**. Department of Environmental Affairs and Tourism (DEAT) together with the Council for Science and Industrial Research (CSIR), Republic of South Africa. (ISBN 0621299251)

DEAT (2001) **Strengthening Sustainability in the Integrated Development Planning Process**. Department of Environmental Affairs and Tourism (DEAT) together with the Council for Science and Industrial Research (CSIR), Republic of South Africa.

DEAT (2002a) **Scoping, Integrated Environmental Management, Information Series 2**. Department of Environmental Affairs and Tourism (DEAT), Republic of South Africa.

DEAT (2002b) **Screening, Integrated Environmental Management, Information Series 1**. Department of Environmental Affairs and Tourism (DEAT), Republic of South Africa.

DEAT (2002c) **Strengthening Sustainability in the Integrated Development Planning Process**. National Framework Document. Final Draft. Department of Environmental Affairs and Tourism (DEAT), Republic of South Africa.

DEAT (2004a) **Overview of Integrated Environmental Management, Integrated Environmental Management, Information Series 0**. Department of Environmental Affairs and Tourism (DEAT), Republic of South Africa.

DEAT (2004b) **Strategic Environmental Assessment, Integrated Environmental Management, Information Series 10**. Department of Environmental Affairs and Tourism (DEAT), Republic of South Africa.

DEAT (2004c) **Criteria for determining Alternatives in EIA, Information Series 11**. Department of Environmental Affairs and Tourism (DEAT), Republic of South Africa.

DEAT (2006a) **Guideline 5: Assessment of Alternatives and Impacts in support of Environmental Impact Assessment Regulations, 2006**. Intregrated Environmental Management Guideline Series. June 2006. Department of Environmental Affairs and Tourism (DEAT), Republic of South Africa.

DEAT (2006b) **South Africa Environment Outlook. A report on the state of the environment**. Executive summary and key findings. Pretoria: Department of Environmental Affairs and Tourism (DEAT) [Internet]. Available from: <http://www.environment.gov.za> [Accessed 25 August 2007].

DEAT (2007a) **NEMA Environmental Impact Assessment Regulations Guideline and Information Document Series: Guideline on Alternatives**. Department of Environmental Affairs and Tourism (DEAT), Republic of South Africa.

DEAT (2007b) **People – Planet – Prosperity: A National Framework for Sustainable Development in South Africa**. Department of Environmental Affairs and Tourism (DEAT), Republic of South Africa.

DEAT (2007c) **Strategic Environmental Assessment Guideline, Integrated Environmental Guideline Series 4**. Department of Environmental Affairs and Tourism (DEAT), Republic of South Africa.

DPLG (2001) **IDP Guide Pack**. Department of Provincial and Local Government (DPLG), Republic of South Africa.

DPLG (2002) **The Intergovernmental System in South Africa**. Department of Provincial and Local Government (DPLG), Republic of South Africa.

MALA (2001) **Wise Land Use: White Paper on Spatial Planning and Land Use Management**. Ministry of Agriculture and Land Affairs (MALA), Republic of South Africa.

Republic of South Africa (1989) **Environment Conservation Act, 1989 (Act No. 73 of 1989)**. Department of Environmental Affairs and Tourism (DEAT), Republic of South Africa.

Republic of South Africa (1995) **Development Facilitation Act (Act No. 67 of 1995)**. The Presidency, Republic of South Africa.

Republic of South Africa (1996a) **Local Government Transition Act Second Amendment Act (Act No. 97 of 1996)**. Department of Provincial and Local Government (DPLG), Republic of South Africa.

Republic of South Africa (1996b) **The Constitution of the Republic of South African, 1996**. The Presidency, Republic of South Africa.

Republic of South Africa (1998) **The National Environmental Management Act, 1998 (Act No. 107 of 1998)**. Department of Environmental Affairs and Tourism (DEAT), Republic of South Africa.

Republic of South Africa (2000) **Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000)**. Department of Provincial and Local Government (DPLG), Republic of South Africa.

Republic of South Africa (2001) **Local Government: Municipal Planning and Performance Management Regulations**. Department of Provincial and Local Government (DPLG), Republic of South Africa.

Republic of South Africa (2002) **Planning Profession Act (Act No. 36 of 2002)**. Republic of South Africa.

The Presidency (2004) **Harmonising and Aligning: The National Spatial Development Perspective, Provincial Growth and Development Strategies and Municipal Integrated Development Plans.** Policy and Advisory Services, The Presidency, Republic of South Africa.

The Presidency (2005) **Accelerated and Shared Growth Initiative for South Africa (AsgiSA)**. The Presidency, Republic of South Africa.

The Presidency (2006) **National Spatial Development Perspective**. Updated Version, June 2006. Policy Co-Ordination and Advisory Services, The Presidency, Republic of South Africa.

The Presidency (2008) **Towards a Fifteen Year Review**. Policy Co-Ordination and Advisory Services, The Presidency. Republic of South Africa.

<u>Municipal Integrated Development Plans</u>

Beaufort West Municipality (2007) **Beaufort West Integrated Development Plan 2007 – 2011**.

Bergrivier Municipality (2007) **Bergrivier Integrated Development Plan 2006 – 2011**.

Cape Winelands District Municipality (2007) **Cape Winelands District Municipality Integrated Development Plan 2007 – 2011**.

Central Karoo District Municipality (2007) **Central Karoo District Municipality Integrated Development Plan 2007 – 2011**.

City of Cape Town (2007) **Five Year Plan for Cape Town: Integrated Development Plan (IDP) 2007/8 – 2011/12**.

Drakenstein Municipality (2007) **Drakenstein Municipality Integrated Development Plan 2007 – 2011**.

Eden District Municipality (2007) **Eden District Municipality Integrated Development Plan 2007 – 2011**.

George Municipality (2007) **George Municipality Integrated Development Plan (IDP) 2007 – 2011**.

Overberg District Municipality (2007) **Overberg District Municipality Integrated Development Plan for the 2007/2008, 2008/2009, 2009/2010 (3 Year Budget Cycle)**.

Theewaterskloof Municipality (2006) **Theewaterskloof Municipality New Integrated Development Plan for the Council Cycle 2006 – 2010/11**.

West Coast District Municipality (2007) **West Coast District Municipality Integrated Development Plan 2007 – 2011**.