Quality and effectiveness of spatial planning related strategic environmental assessment (SEA) within the South African context: A case study

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Abstract

Internationally planners have been at the forefront of debate on environmental assessment in general and strategic environmental assessment (SEA) in particular. Very limited empirical research has been conducted to evaluate the performance of SEA, especially within the South African context. As a first step towards addressing the gap in knowledge, this article provides the results of a performance evaluation on the 'input quality' and 'output effectiveness' of a specific high profile SEA case study namely, the SEA for the North West Provincial Spatial Development Framework. The results show that the SEA achieved a particularly poor input quality performance and was generally ineffective in influencing decisions. It is proposed that to take the debate forward follow-up research on a larger number of case studies be conducted to allow for the identification of patterns in performance and ultimately emergence of best practice guidelines.

DIE KWALITEIT EN EFFEKTIWITEIT VAN RUIMTELIKE BEPLANNING VERWANTE STRATEGIESE OMGEWINGSANALISE (SOA) IN DIE SUID-AFRIKAANSE KONTEKS: 'n GEVALLESTUDIE

Vanuit 'n internasionale perspektief was beplanners deurentyd aan die voorpunt van bespreking oor omgewingsinvloedanalise in die algemeen, maar ook meer spesifiek van strategiese invloedanalise (SOA). Navorsing oor die kwaliteit van die insette en die effektiwiteit van uitsette is egter baie beperk, veral in die Suid-Afrikaanse konteks. As 'n eerste stap om hierdie vraag aan te spreek bied hierdie artikel die resultate van 'n kwaliteit- en effektiwiteitsevaluering van 'n spesifiek geselekteerde SOA gevallestudie, naamlik die SOA vir die Noord-Wes Provinsie se Ruimtelike Ontwikkelingsraamwerk. Die resultate wys dat die SOA swak presteer het in terme van kwaliteit en effektiwiteit. Dit word voorgestel dat opvolgnavorsing nodig is om tendense tussen verskeie gevallestudies te vergelyk ten einde SOA deurlopend te verbeter.

BOLENG LE TSHEBETSO YA DIPATLISISO TSA MERALO YA DIBAKA (SEA) AFRIKA- BORWA SEBAKENG SE KGETHILWENG

Lefatsheng ka bophara bo-rameralo esale ba le kapele-pele dipuisanong tsa phenyekollo ya tikoloho (SEA). Ke dipatlisiso tse fokolang tse entsweng ho fumana tshebetso ya SEA mona Afrika- Borwa. E le mothati wa pele ho sheba bosiyo bona ba tsebo, pampiri ena e fana ka tse fumanweng ha ho ne ho etswa SEA sebakeng se seng North West. Dipatlisiso di fumane hore SEA ha e ya ka ya tlisa tse lebeletsweng haholo- holo ho tlisa phapang diqetong. Kahona, ho etswa tshisinyo ya hore hore dipuisano di iswe pele dipatlisiso tse ding di lokela ho estwa dibakeng tse ngata e le ho esta hore moo ho bonahalang dintho di tshwana, ho tsebe ho etswa melawana e ka sebediswang kamoso.

1. INTRODUCTION

The need for strategic environmental assessment (SEA) emerged approximately 15 years after environmental impact assessments (EIA), at first largely due to the limitations experienced with project level environmental assessment (Lee & Walsh, 1992; Therivel, *et al*., 1992; Wood & Djeddour, 1992; Glasson, *et al*., 1994; Sadler & Verheem, 1996; Therivel & Partidario, 1996; Wood, 2003). Its emergence has been described as the single most important direction in the field of environmental assessment (Buckley, 1998). Over the last decade SEA practice has been expanding internationally at a rapid rate, both within developed as well as developing country contexts (Lee & George, 2000; Dalal-Clayton & Sadler, 2005; Schmidt, *et al*., 2005). Towards the ultimate quest to improve practice, performance evaluation can be considered the new frontier in SEA research (Dalal-Clayton & Sadler, 2005). As it presents very difficult conceptual and methodological challenges, progress in this area of research has been very slow (Cashmore, *et al*., 2004; Partidario & Fischer, 2004; Sadler, 2004). Another limiting factor has been the lack of agreement on the identity and overall aim of SEA from an international perspective (Noble, 2000; Fischer & Seaton, 2002). However, context specific performance evaluation has become more viable since local understandings of SEA have emerged, as reflected in national guidance and legislation of different countries.

Internationally the planning sector has been at the forefront of environmental assessment debate in general and SEA in particular (Therivel, 1995; Eggenberger & Partidario, 2000; Barker & Fischer, 2003; Carter, 2004; Jones, *et al.*, 2005). The potential contributions of planning theory to the emerging theory on environmental assessment have also been explored (Lawrence, 2000; Richardson, 2005). Within the South African context literature suggests that the relation between SEA and planning has probably been the SEA topic of debate that has received most attention (Audouin, 2000; DEAT, 2000; Smit, 2000;

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Wiseman, 2000; Govender, *et al.*, 2001; Retief & Sandham, 2001; Retief, 2003; Rossouw & Govender, 2003; Rossouw & Retief, 2005). Research shows that of the nine sectors that have applied SEA between 1996 and 2003, the majority (35%) were planning related (Retief, *et al.*, 2007). Furthermore, research also suggests that a range of different understandings and applications of SEA exist within the planning sector (Rossouw & Retief, 2005; Retief, 2006; Retief, 2007a; 2007b) such as:

- SEA as a stand alone process not linked to any specific policy, plan or programme.
- SEA as a process that aims to integrate with a particular policy, plan or programme from an early stage in the development process.
- SEA as a post hoc assessment activity towards the end of a policy, plan or programme development process.

This article explores the quality and effectiveness of a specific high profile SEA namely, the SEA for the North West Province Spatial Development Framework, with a view to gain a better understanding of SEA in relation to strategic planning, how it is applied, and most importantly, what it is achieving.

2. RESEARCH DESIGN AND METHODOLOGY

Case study research is considered a particularly suitable research strategy for performance evaluation (Miles & Huberman, 1994; Robson, 2002; Yin, 2003). This is because it is best suited to deal with the real life detail and complexities associated with such research and provide an opportunity to explore and triangulate a range of data sources (i.e. interviews and documentation) (Eisenhardt, 2002). To provide an instrument, as well as procedures and general rules, to be followed in case study data gathering and analysis, Yin (2003: 67) proposes the development of a review protocol. It typically includes a conceptual framework, data collection procedures and questions for evaluation, which provides the foundation for the validity and reliability of eventual results. The review protocol applied to this research was designed by Retief (2007c) and was based on a literature review of international, as well as South African SEA literature[1]. The literature was reviewed to inform the development of a conceptual framework and the identification of existing performance criteria (and where criteria did not exist, methods to develop criteria) for SEA quality and effectiveness.

The conceptual framework made a distinction between 'input quality' at the level of application and 'output effectiveness' at the level of implementation. Also, distinction was made between three SEA 'input quality components', namely: process, methodology and documentation. Two 'output effectiveness components' were identified, namely: direct and indirect outputs. Direct outputs are understood to relate to the objectives of SEA, which include aspects such as changes to decisions, improvement in the environmental quality and changes to the contents of plans or programmes. Indirect outputs are more difficult to gauge and measure, such as changes in attitudes towards the environment, improved awareness, changes in institutional arrangements and departmental traditions. Measurement of quality and effectiveness was done in relation to purposefully designed key performance areas (KPAs) and key performance indicators (KPIs) as summarised in Table 1.

Table 1: Summary of linkages between SEA principles, objectives, key performance areas (KPAs) and key performance indicators (KPIs) developed for South Africa

SEA PRINCIPLES "Basic building blocks for the context specific perspectives on SEA in South Africa" (adapted from DEAT, 2000)	**SEA OBJECTIVES "Indication of what needs to be achieved" (adapted from DEAT, 2000)**	**KPAs "Theme related to principles"**	**KPIs "Questions that provide an indication if SEA objectives were achieved"**
Key PROCESS principles	**Key process objectives**	**Process KPAs**	**Process KPIs**
There is not one SEA process to be used in all contexts. This requires a SEA process to be flexible and adaptable, in order to integrate with the decision making context.	• To integrate the SEA with the decision making context. • To avoid the duplication of processes.	*Context specific*	KPI 1.1: Was the SEA fully integrated with the plan or programme formulation process, from conceptualisation to implementation? KPI 1.2: Did the SEA make provision for tiering with project EIA? KPI 1.3: Did the SEA formulate actor and process configurations?
Development must be socially, environmentally and economically sustainable. SEA provides a practical means of integrating the concept of sustainability into plan and programme formulation.	• To integrate the concept of sustainability into plan and programme level decision making. • To facilitate the development of local definitions and understandings of sustainability.	*Sustainability-led*	KPI 2.1: Did the SEA documentation provide a definition for sustainability, which is consistent with the way sustainability is understood in the local context? KPI 2.2: Was sustainability included as a specific objective of the SEA? KPI 2.3: Was an attempt made, as part of the SEA, to measure sustainability by means of parameters, objectives, criteria or indicators? KPI 2.4: Did the SEA give equal consideration to the biophysical, social and economic aspects?

[1] Retief, 2007c: 83-101

Public participation forms an integral part of SEA because SEA puts people and their needs at the forefront of its concern.	• To inform and involve IAPs throughout the SEA process. • To incorporate public inputs and concerns into decision making processes. • To facilitate information sharing.	*Participative*	KPI 3.1: Was a formal public participation process followed, which informed and involved the IAPs throughout the SEA process? KPI 3.2: Were the IAPs satisfied with the public participation process? KPI 3.3: Did the SEA explicitly address public inputs and concerns? KPI 3.4: Were all key state departments and other governing bodies consulted during the SEA?
SEA provides a means of influencing decision making throughout its life cycle, from conceptualisation to implementation in an incremental and iterative way while facilitating the concepts of pre-caution and continuous improvement.	• To ensure that the SEA is implemented early enough to influence decision making. • To facilitate continual improvement.	*Pro-active*	KPI 4.1: Did the SEA ensure availability of the assessment results early enough to influence the decision making process? KPI 4.2: Was commitment confirmed to ensure that the results of the SEA be considered in future decision-making?
The benefits of implementing SEA exceed the costs. SEA adds value to existing decision making by focusing on key strategic environmental issues.	• To provide sufficient, reliable and usable information. • To optimise the use of time and resources. • To focus decision making on the key environmental issues.	*Efficient*	KPI 5.1: Did the SEA provide sufficient information for decision-making according to the relevant decision-makers? KPI 5.2: Were sufficient resources and time allocated to conduct the SEA according to the relevant SEA role players? KPI 5.3: Did the SEA focus on key significant strategic issues?
Key METHODOLOGY principles	**Key methodology objectives**	**Methodology KPAs**	**Methodology KPIs**
SEA has to justify why it needs to be applied and what it aims to achieve.	• To justify the need for the SEA. • To clearly define the project objectives of the SEA.	*Screening*	KPI 6.1: Was a formal screening method or criteria applied? KPI 6.2: Was the need for the SEA clearly defined? KPI 6.3: Was the purpose and/or objectives of the SEA clearly defined that could serve as reference for effectiveness review?
SEA determines the opportunities and constraints that the environment places on development.	• To provide sufficient information on environmental attributes to identify opportunities and constraints.	*Situation analysis*	KPI 7.1: Was a resource inventory prepared which describes the social, economic and biophysical aspects in the area at the appropriate scale and level of detail? KPI 7.2: Was the state of the environment (including economic, social and bio-physical) determined against set objectives, criteria or indicators? KPI 7.3: Were environmental opportunities and constraints identified by means of a justified methodology?
SEA identifies the most significant key strategic environmental issues.	• To ensure that key strategic environmental issues are identified.	*Scoping*	KPI 8.1: Was a formal scoping method applied? KPI 8.2: Did scoping assist in defining the scope and extent of the SEA? KPI 8.3: Did the scoping method(s) focus the SEA on key significant strategic issues? KPI 8.4: Were public inputs considered during scoping?

SEA determines the implications of strategic decisions on the environment.	• To ensure that environmental implications of strategic decisions are considered.	*Environmental assessment*	KPI 9.1: Was an assessment conducted against a sustainability framework (it may include sustainability parameters / objectives / criteria and indicators)? KPI 9.2: Were different scenarios and/or alternatives considered to identify the best option? KPI 9.3: Were the assessment techniques appropriate in terms of the context, available resources as well as data quality and availability? KPI 9.4: Were cumulative effects considered?
SEA aims for continuous improvement, which relies on monitoring and review mechanisms.	• To ensure that the SEA is reviewed and the implementation of proposals monitored.	*Monitoring and review*	KPI 10.1: Did the SEA propose a plan for monitoring? KPI 10.2: Has the SEA been independently reviewed? KPI 10.3: Has environmental monitoring been conducted?
Key DOCUMENTATION principles	**Key documentation objectives**	**Documentation KPAs**	**Documentation KPIs**
Information should be documented in a sound and justifiable manner.	• To provide sound and justifiable information which allows for verification of results. • To contribute to existing environmental data and information.	*Description of Context*	KPI 11.1: Were the purpose and objectives of the SEA described in the documentation? KPI 11.2: Was the decision making contexts and linkages with other decision making processes described? KPI 11.3: Was a description provided of the SEA process followed? KPI 11.4: Were those involved in consultation and participation indicated?
		Description of the state of the environment	KPI 12.1: Was a description provided of the current state of the environment (either as a separate volume or integrated with the description of the baseline environment)? KPI 12.2: Was the state of the environment described against clear thresholds and/or limits of acceptable change in a way that highlights relative significance?
		Description of assessment methodology and results	KPI 13.1: Were the different methods applied in the SEA described (relating to for instance screening, scoping and environmental assessment)? KPI 13.2: Was a description of key significant strategic environmental issues given? KPI 13.3: Were different scenarios and/or alternatives described? KPI 13.4: Were the recommendations and/or terms of approval described? KPI 13.5: Was a summary provided of difficulties encountered and subsequent uncertainties in results?

SEA should be documented in a manner that ensures effective communication of results in order to optimise the possibility of it influencing decision making.	• To communicate the results of the SEA to decision makers. • To communicate the results of the SEA to IAPs.	*Communication of results*	KPI 14.1: Were the contents clearly explained, justified and logically arranged in sections or chapters? KPI 14.2: Were the specialist reports well referenced and integrated in a way that promotes a self-contained document? KPI 14.3: Was a non-technical summary provided of the main results and conclusions? KPI 14.4: Were the inputs received from IAPs incorporated in the report?
Key DIRECT OUTPUTS principles	**Key direct outputs objectives**	**Direct outputs KPAs**	**Direct outputs KPIs**
SEA influences the contents of plans and programmes.	• To influence the contents of plans and programmes.	*Policies, plans and programmes*	KPI 15.1: Were any plans or programmes amended based on the proposals of the SEA? KPI 15.2: Did the SEA facilitate the incorporation of sustainability objectives into relevant plans or programmes?
SEA facilitates the achievement of sustainability objectives	• To achieve the SEA project objectives. • To achieve the SEA sustainability / environmental objectives.	*SEA objectives*	KPI 16.1: Were the SEA project objectives achieved (as described in the TOR)? KPI 16.2: Were the sustainability / environmental objectives achieved (as might be described in relation to the vision)?
SEA influences decision making	• To influence decision making.	*Decision making*	KPI 17.1: Were decisions changed or amended based on the outcomes and proposals of the SEA? KPI 17.2: Was the SEA implemented as a decision-support guideline for future development proposals? KPI 17.3: Did the SEA inform/guide subsequent project level decision making (such as EIA or water licensing)?
SEA improves environmental quality	• To improve environmental quality	*Environmental quality / sustainability*	KPI 18.1: Were changes to the environment observed since the completion of the SEA process, which could be attributed to the influence of the SEA? KPI 18.2: Did the SEA accurately identify the key significant strategic environmental issues?
Interpretation of overall results: ***Poor***: Failure to conform to large majority of indicators. ***Average to poor***: Failure to conform, and/or partial conformance, to the majority of indicators. ***Average***: Partial conformance to the majority of indicators, or an even spread in performance. ***Average to good***: Partial, and/or conformance, to the majority of indicators. ***Good***: Conformance to large majority of indicators.			

Source: (Retief, 2005: 108-110)

The Table shows the relation between the key SEA process principles and key process objectives in the first two columns and how these are translated into KPAs and KPIs in columns 3 and 4. The level of conformance of the SEA case study to the KPIs would thus give an indication if the key objectives were achieved. In terms of input quality 14 KPAs and 48 KPIs were developed. It was based on the understanding that SEA involves a context specific, sustainability-led, participative, pro-active and efficient process, which requires different methods during screening, situation analysis, scoping, environmental assessment and monitoring and review phases, the results of which need to be documented and communicated to decision makers and interested and affected parties. In relation to output effectiveness, four KPAs and nine KPIs were developed. Because of the qualitative nature of the conformance measurement to the various KPIs the protocol applies only three broad scales, namely: conformance, partial conformance and non-conformance. The general assumption is that conformance to more indicators implies better performance. It is important to emphasise that ultimately the indicators and review results were used to present

a qualitative description and to tell a story, not to provide a final result based on a quantitative calculation. The data gathering relied on selected interviews with those role players responsible for funding, initiating, conducting and implementing the SEA, as well as detailed documentation reviews of the SEA reports.

3. SEA INTERFACE WITH PLANNING

Since the 1994 election, planning in South Africa has been involved in a comprehensive and radical reform process. What emerged was a shift away from highly centralised, technocratic, rules-based mechanistic approaches, to decentralised, participative and co-operative governance frameworks. Two key challenges for planning emerged, which guided the potential contribution of SEA. The first relates to the integration of the concept of sustainable development with the development planning process (Urquhart & Atkinson, 2000; Coetzee, 2002), and the second to the integration of EIA with planning authorisation processes (RSA. Department of Land Affairs, 2001; Spinks, *et al.*, 2003).

However, notwithstanding the focus on SEA and planning and the expansion of practice, little progress seems to have been made to clarify the linkages (Rossouw & Retief, 2005; Retief, 2007a). Rossouw & Govender (2003) argued that to facilitate meaningful linkages between SEA and planning require policy integration, institutional integration and methodological integration. The integration of planning and environmental management policy has been quite successful through the inclusion of common principles relating to, amongst others, sustainability and participation. However, institutional and methodological integration remains problematic for which only initial steps have been taken. From the start environmental assessment legislation evolved from a conservation and resource management perspective, and not from development planning (Glazewski, 2000) as was the case in other countries such as the United Kingdom. This led to functions being divided between different state departments and ultimately also to different levels of government. Here also lies a significant distinction in that planning follows a 'bottom-up' approach, while environmental assessment is governed from the provincial level down. So policy seems to have been well aligned, but the institutional arrangements and approaches are markedly different and initial fears of duplication and SEA becoming all things to all people (Wiseman, 1997; 2000), still remain. To further explore the planning and SEA debate, a distinction needs to be made between so-called 'development planning' and 'land use management'. Although the two areas of planning are linked, they are administered by different departments and governed by separate legislation.

3.1 Development planning

The term 'development planning' was coined to address the considerable confusion around planning terminology, and to replace terms associated with the previous dispensation, such as 'spatial planning', 'land-use planning' and 'physical planning' (RSA. Department of Land Affairs, 2001: 6). After an extended reform process, which included different interim acts, development planning culminated in 'Integrated Development Planning', for which specific legislation and guidance have been developed by the national Department of Provincial and Local Government (Department of Provincial and Local Government [DPLG], 2001). It involves a process by which municipalities prepare an Integrated Development Plan (IDP) for a five-year period. This plan serves as the principal strategic planning instrument to guide and inform all planning, budgeting, management and decision making in a municipality. The key debate that linked SEA with IDP was how to incorporate the principle of 'sustainable development' into strategic level decision making and planning (Urquhart & Atkinson, 2000; DEAT, 2001; Coetzee, 2002; Du Plessis, *et al.*, 2002). A main IDP sector plan requirement with particular reference to this article is the spatial development framework (SDF). According to the Department of Provincial and Local Government (2001) guide packs, the purpose of the SDF is to create a geographical strategic framework for the formulation of appropriate land-use management systems, thereby:

- informing the decisions of development tribunals, housing departments and relevant development committees; and
- creating a framework of investment confidence that facilitates both public and private sector investment.

The SDF maps typically indicate preferential and focal areas for certain types of land use; areas for which certain types of land use are excluded; and locations of IDP projects to provide evidence of compliance of the IDP with the spatial objectives and strategies reflected by these maps.

3.2 Land use management

Land use management is the primary responsibility of the national Department of Land Affairs and involves the establishment and management of mechanisms in terms of which the use of land can be regulated. The previous dispensation reveals an extraordinarily complex legal framework for land use management relating to the different segregated areas (Christopher, 1994; RSA. National Department of Land Affairs, 1999). This highlighted the need to standardise the situation through overarching national policy and legislation in the form of the Land Use Bill, which aims to provide a basis for uniform land use management. However, the land use management reform process has not progressed as successfully as development planning. In many instances the status of land is still determined and managed by town planning schemes and guide plans established under the previous dispensation. In terms of environmental assessment, the key problem is how to streamline EIA and land use authorisation processes (RSA. Department of Land Affairs, 2001: 4, 27-29), which incorporates the concept of tiering and thus the potential contribution of SEA. It is also evident that SDFs (described in the previous section) provide a link between land use management and integrated development planning. Integrating environmental considerations with SDFs could potentially make a significant contribution towards more sustainable development and land use patterns.

4. SETTING THE SCENE - SEA FOR THE NORTH WEST SPATIAL DEVELOPMENT FRAMEWORK (SDF)

Governance in South Africa is divided into four democratically elected spheres: national, provincial, district municipal and local municipal. The inception of the new dispensation in 1994 presented new challenges for provincial government in terms of co-operative governance and integrated decision making, especially in relation to the promotion of the concept of sustainable development. For this reason an extensive project, spanning four years with a total budget of almost forty million rand, was initiated by the North West

Provincial Government in co-operation with the Ministry of Foreign Affairs of Finland (SYKE), entitled, 'Support to environment and sustainable development in the North West Province' (RSA. North West Provincial Government, 2002a). The overall objective of the project was to ensure that environmental sustainability was taken into account in economic and land-use decision making in the province. This would be achieved by developing systems for integrated planning, decision making, implementation and monitoring (RSA. North West Provincial Government, 2002a). The expected results of the project were grouped into four components, namely, legislative framework, spatial planning, capacity building and the establishment of an eco-fund. The SEA related to the spatial planning component, which had to deliver,

> *An approved Provincial Spatial Development Framework (PSDF) and Strategic Environmental Assessment (SEA) which supports sustainable land-use planning and management, environmental permitting and monitoring as well as Zoning Plans for selected areas (RSA. North West Provincial Government, 2002a: 14).*

The intention was that the provincial SDF and the Zoning Plans should fill the spatial planning void that existed at provincial level and provide strategic direction for district and local level planning and decision making. The SEA was to be conducted as a component of the provincial SDF with the broad purpose to,

> *… add value to the provincial SDF by providing a means of integrating the concept of sustainability into planning and the decision making process (Maxim, 2003c: 1).*

5. DYNAMICS OF THE STUDY AREA

The North West Province is one of the nine new provinces demarcated after 1994 and is divided into four district municipalities and 21 local municipalities. It comprises 9% of South Africa's surface area and 8% (3.6 million) of its total population. The gross geographic product per person is lower than the national average, which suggests that it is also one of the poorer provinces. Over the years the region relied mostly on mining and commercial agriculture to form the backbone of its economy. However, the province also includes large tracts of tribal land supporting traditional subsistence living, typical of the dualistic character of the South African landscape. The failure of historic segregationist spatial policies (RSA. Department of Planning and the Environment, 1975 and RSA, 1982) led to a new approach to regional development based on locational freedom and less regulation, which is reflected in various national policy and legislative initiatives since 1994 (RSA, 1995). The most recent is the National Spatial Development Perspective (RSA. Department of Land Affairs, 2003) and the *Land Use Bill* of 2002. The North West Province formulated a development vision in accordance with the National Spatial Development Perspective which incorporates the concept of integrated sustainable growth and development (RSA. North West Provincial Government, 2001a).

6. OVERALL REVIEW RESULTS AND ANALYSIS

The overall performance results (in relation to the KPAs and KPIs listed in Table 1) are illustrated in Table 2.

Table 2: Overall review results: Strategic environmental assessment for the Provincial SDF

		KPAs		KPI results				
Input Quality	Process	Context specific	1	1.1	1.2	1.3		
		Sustainability led	2	2.1	2.1	2.3	2.4	
		Participative	3	3.1	3.2	3.3	3.4	
		Pro-active	4	41	4.2			
		Efficient	5	5.1	5.2	5.3		
	Methodology	Screening	6	6.1	6.2	6.3		
		Situation analysis	7	7.1	7.2	7.3		
		Scoping	8	8.1	8.2	8.3	8.4	
		Environmental assessment	9	9.1	9.2	9.3	9.4	
		Monitoring and review	10	10.1	10.2	10.3		
	Documentation	Description of context	11	11.1	11.2	11.3	11.4	
		Description of state of the environment	12	12.1	12.2			
		Description of assessment methodology and results	13	13.1	13.2	13.3	13.4	13.5
		Communication of results	14	14.1	14.2	14.3	14.4	
Output Effectiveness	Direct outputs	Plans and programmes	15	15.1	15.2			
		SEA objectives	16	16.1	16.2			
		Decision making	17	17.1	17.2	17.3		
		Environmental quality	18	18.1	18.2			

Non-conformance
Partial conformance
Conformance
Status could not be established
Indicators with a particular relevance to the case study

The 'input quality' review results show that the SEA conformed to only two, partly conformed to 17 and failed to conform to 29 of the 48 indicators. This suggests that the input quality of the SEA was particularly 'poor'. Similarly the 'output effectiveness' performance, in terms of the direct outputs component, shows that the SEA was generally ineffective by conforming to none of the seven indicators. Due to particular weaknesses in the quality of the SEA (lack of SEA project objectives and monitoring arrangements) the status of two of the effectiveness indicators could not be established. It can thus be concluded that the 'poor' overall input quality performance, was reflected by the 'poor' output effectiveness performance. In theory this positive correlation is generally what one would have expected, where a 'poor' quality performance culminated in general ineffectiveness.

6.1 Input quality components: review results and analysis

The next sections present the review results (as obtained through the interviews and documentation reviews described in section 2) for the process, methodology and documentation input quality components in more detail. The results should be read in relation to Tables 1 and 2.

6.1.1 Process

The review results show that the SEA had a particularly 'poor' quality process with non-conformance to nine and conformance to none of the 16 indicators. This section describes the performance of the SEA process in relation to the key performance areas (KPAs) and with specific reference to key performance indicators (KPIs) 1.1, 1.2, 1.3, 2.4, 3.1, 3.4, 4.2 and 5.2 (see Tables 1 and 2).

The documentation evidence suggests that the intention was for the SEA process to be conducted parallel to the planning process. For example, the project document and terms of reference stated that,

> *"The SEA will be carried out parallel to the planning process. The intermediate and final SEA results must be taken into account and be visible in the Provincial SDF" (RSA. North West Provincial Government, 2002a: 20) and "The assessment will be carried out parallel to the planning process" and "The SEA report shall be separate from the provincial SDF report" (RSA. North West Provincial Government, 2002b: 2-3).*

Apart from the view of the planning consultant, who considered the SEA to be fully integrated with the planning process (Bos, 2004: personal communication), the following evidence suggests that very limited integration was achieved (KPI 1.1). Firstly, the specialist SEA consultant stated that he felt 'isolated' from the planning team and process, although the interaction did apparently improve marginally as the process went on (Cilliers, 2004: personal communication). Secondly, the structure and contents of the documentation reflect a very sectoral approach to presentation and analysis. For example, the planning process diagram indicates the SEA to be distinctly separate from the provincial SDF (Maxim, 2003b: 3). Moreover, the status quo analysis dealt with social, economic and bio-physical aspects separately (Maxim, 2003c; 2003b) and the final provincial SDF and Zoning Plan (which was considered the main outcome of the SEA) was presented as two separate products (Maxim, 2003d). Finally, the project manager from North West Provincial Government specifically highlighted the lack of integration between the Zoning Plan and the provincial SDF as a key weakness (Chinonge, 2004: personal communciation).

Although the planning consultant had a clear grasp of the decision making context, interviews suggested that in contrast, the SEA consultant had a very limited understanding of who was going to use the SEA and how the SEA process fitted in terms of broader planning and decision making processes (Bos, 2004: personal communication; Cilliers, 2004: personal communication) (KPI 1.3). This was also an indication of the lack of consideration for the eventual integration of the SEA with the particular context. As an example, the planning consultant expressed the hope that the Zoning Plan (as the main outcome of the SEA) would serve as a first order screening mechanism for EIA, but the documentation reflected no specific EIA tiering arrangements and interviews confirmed that key personnel dealing with EIA in the province, were not even aware of its existence at the time (Nkosi, 2004: personal communication) (KPI 1.2).

The SEA report suggests that the SEA did include equal consideration of the economic, social and biophysical aspects in order to address the concept of sustainability. However, the provincial project manager stated,

> *As a physical planner I had no role in the SEA and am also not in a position to really comment on its contents (Chinonge, 2004: personal communication).*

The latter comment suggests that the SEA was considered separate from planning and in the domain of natural scientists and that its contribution focussed mostly on the biophysical environment. She went on to state that,

> *Without the SEA the SDF would have looked at the bio-physical aspects in a very superficial manner" and "Without the SEA the planning process would have addressed the social and economic issues in any case (Chinonge, 2004: personal communication).*

The planning consultant also expressed similar sentiments by confirming that the main contribution of the SEA was the depth it provided concerning bio-physical aspects and that,

> *The SEA placed us in a stronger position to reflect on and address bio-physical aspects (Bos, 2004: personal communication).*

It is thus not surprising that the appointed SEA specialist consultant was a natural scientist by trade and although, in theory, the SEA was expected to address the concept of sustainability and include a broad understanding of the term 'environment', it became evident that, in practice, SEA was expected to focus on the biophysical aspects and by doing this avoid duplication with planning (KPI 2.4).

The planning process did not include a full public participation process but rather a consultative process with representatives from key stakeholders in the province such as local and district municipalities. The terms of reference stated that the SEA process had to start immediately after completion of the consultative process programme (RSA. North West Provincial Government, 2002b: 2). So, the SEA process did not include a separate participation or consultation process (KPI 3.1), although some felt that it should have (Koivisto, 2003: 2). There was general consensus among interviewees that the consultation programme was disappointing and added very little value to the SEA and the planning process in general (Bos, 2004: personal communication; Chinonge, 2004: personal communication; Cilliers, 2004: personal communication; Koivisto, 2004: personal communication) (KPI 3.4). The

main criticism was that the process was poorly attended. Moreover, the purpose of the consultation exercise, as well as the envisaged outcomes of the provincial SDF and Zoning Plan, was also not well communicated to those who did attend with the result that almost no feedback was received from district or local municipalities on the draft SDF and Zoning Plan (Chinonge, 2004: personal communication).

In terms of implementation no formal commitment was ensured from those expected to implement the SEA outcomes (KPI 4.2). The funding agency indicated that they assumed the authorities at provincial, district and local levels would get on board and accept responsibility but unfortunately this turned out to be assuming too much (Koivisto, 2004: personal communication). As stated (Bos, 2004: personal communication; Chinonge, 2004: personal communication), and described in the documentation (Maxim, 2003d: 13-16), the expectation was that by the end of the process, the Land Use Bill would have been enacted, and thereby provide a legal mechanism assigning responsibilities to ensure implementation. But it turned out that the Land Use Bill was not enacted in time and thus left the status of the provincial SDF, Zoning Plan and ultimately the SEA, unresolved.

Surprisingly, it was found that only 5% (R100, 000) of the total spatial planning project budget (almost R2 million) was allocated to the SEA component. Although no clear indication exists of what SEA should typically cost, this is considered a small percentage, especially in view of the important weight placed on the overall contribution of the SEA. However, the SEA consultant highlighted time, rather than funding, as a more significant limiting factor in terms of efficiency (Cilliers, 2004: personal communication) (KPI 5.2). The planning consultant maintained that the total project budget was unrealistic (Bos, 2004: personal communication), while the provincial project manager felt that the final product was rushed in order to meet the project deadline (Chinonge, 2004: personal communication).

6.1.2 Methodology

The terms of reference states that the SEA should be based on the 2000 South African SEA Guidance (RSA. North West Provincial Government, 2002b: 3). However, from a methodology point of view the guidance is considered weak because it only presents broad principles and process elements with limited focus on specific methodological aspects. The review results show that the SEA methodology was lacking in all key departments except the situation analysis with non-conformance to nine and conformance to only one of the 16 indicators. This section discusses the SEA methodology performance, in relation to the KPAs and KPIs 6.2, 6.3, 7.1, 7.3, 8.3, 9.1, 9.2 and 10.1 (see Tables 1 and 2).

To start with, no formal screening was conducted to determine the need for the SEA. It was interesting to note that no mention was made of SEA in the first project document of the 'Support to environment and sustainable development in the North West Province' project (RSA. North West Provincial Government, 2001b). A year later, after several workshops and additional discussions, a second project document was produced which did include brief mention of SEA, as part of the spatial planning component. This cursory and sketchy inclusion did not clarify exactly why SEA was included or what it had to achieve. Interviews suggest that the main reason for including SEA was to pro-actively deal with anticipated requirements of the new Land Use Bill (Bos, 2004: personal communication; Koivisto, 2004: personal communication). So it was considered progressive in terms of compliance with emerging national legislation to include SEA. However, the terms of reference for the provincial SDF and Zoning Plan did not provide much more clarification except to state that the South African SEA guidance should be used, and that the deliverables would include draft and final SEA reports which should be separate from the provincial SDF report (RSA. North West Provincial Government, 2002b: 2-3). Interviews also confirm that when the provincial SDF and Zoning Plan were initiated those involved were not clear about what SEA was, why it was needed (KPI 6.2) and what it had to achieve (KPI 6.3) (Bos, 2004: personal communication; Chinonge, 2004: personal communication; Cilliers, 2004: personal communcation). To quote the funding agency,

> *It seems to me that we did not take the screening phase seriously. We required the SEA in the terms of reference, but after that nobody really asked the question if the SEA was needed. Based on that discussion we could have set more detailed visions and purpose for the SEA. In my mind (the purpose of the SEA) was too broad and obvious and it was not really context specific (Koivisto, 2003: 1).*

It seemed that the expectation from the funding agency and the North West Provincial Government was that the appointed consultants would develop and tailor SEA in accordance with the South African guidance. However, the guidance proved to be much too broad and allowed for different interpretations, which ultimately led to misunderstandings between the consultants and the funding agency (Bos, 2004: personal communication; Chinonge, 2004: personal communication; Cilliers, 2004: personal communication).

The main methodological focus seems to have been on the situation analysis. The recently completed state of the environment report for the province (DACE, 2002) as well as a provincial biodiversity site inventory and database (Strategic Environmental Focus, 2003) provided valuable information for the situation analysis. What was particularly useful was that these studies were done on a provincial scale, which provided some information on the biophysical environment that aligned well with the level of detail required for the SEA (KPI 7.1). Based on the situation analysis, specialist workshops and the consultation process, key issues were identified and grouped under four clusters namely, spatial planning, socio-economic, infrastructure and natural resource base. At the same time, opportunities and constraints were identified for each issue (KPI 7.3), objectives were formulated and targets were set. This 'cluster approach' isolated the social, economic and biophysical issues into separate clusters. The main contribution of the SEA was considered to be with regards to the biophysical aspects dealt with in the 'natural resource base cluster', which also formed the basis of the Zoning Plan. The other three clusters dealt with the social and economic issues and formed the basis for the provincial SDF. A number of points need to be highlighted regarding what could be considered the scoping phase of the SEA. The first was a lack of focus with generally too many issues, objectives and targets that were poorly defined and very ambiguous (KPI 8.3). They gave the impression of an unviable and ultimately unsustainable 'wish list'. This conclusion was acknowledged, although reluctantly, by the consultants and North West Provincial Government

(Bos, 2004: personal communication; Chinonge, 2004: personal communication; Cilliers, 2004: personal communication). The SEA consultant specifically stated that

> *You never really knew when to draw the line, sometimes you had too little detail and sometimes too much and sometimes you were expected to provide information that did not exist (Cilliers, 2004: personal communication).*

Secondly, the sustainability objectives were not evaluated in terms of relative significance nor were 'trade-offs' between them considered. For example, the objectives and targets "To increase private land ownership with 5% per annum as part of land reform and a rural development strategy" (Maxim, 2003c: 13) and "Achieve and sustain a minimum annual economic growth rate of 2% for each district in the province" (Maxim, 2003c: 41) had significant implications for the objective, "Conservation of representative areas of all terrestrial habitat types in formally and informally protected areas" with the target "to ensure that at least 5% of the surface area of all habitat types and 10% of the surface area of high priority habitats are included in formally and informally protected areas within 10 years" (Maxim, 2003c: 71-72). In this case the expansion of protected areas would have implications for land ownership, be it tribal land currently held in trust by the state or privately owned commercial agricultural land, as well as implications for economic growth, especially if the land reform programme was going to impact on commercial agricultural productivity. The project manager from the North West Provincial Government and the consultants explained that they expected the provincial departments and the local authorities, within their mandate, to interpret, refine and prioritise these objectives further and to make the necessary trade-offs as a next phase (Bos, 2004: personal communication; Chinonge, 2004: personal communication; Cilliers, 2004: personal communication). Finally, the targets set for the objectives were, as the consultant puts it, "a thumb suck exercise", not confirming who was going to implement the objectives and ultimately monitor progress (Cilliers, 2004: personal communication) (KPI 10.1). The view of the North West Provincial Government in this regard was that they were waiting for completion of the provincial restructuring process and the establishment of the integrated environmental management system before such roles and responsibilities could be assigned (Chinonge, 2004: personal communication).

Ultimately the Zoning Plan was put forward as the main outcome of the SEA. It provided a spatial representation of natural resources and ecologically sensitive areas throughout the province. Surprisingly the proposals contained in the provincial SDF were never assessed against the Zoning Plan (KPI 9.1). The main analysis of the provincial SDF considered areas of social need and areas with economic potential without considering the resource base and biophysical aspects (Maxim, 2003d: 72-74). For example, the areas identified as 'main mining zones' and 'priority development zones' on the provincial SDF also lie in areas identified as 'high biodiversity areas' and 'dolomitic aquifer areas' on the Zoning Plan. Similarly several 'rural intervention zones' on the provincial SDF lay within the 'Griekwaland West area of endemism', 'dolomitic aquifer areas' and in 'high biodiversity areas'. The only reference to the natural resource base as a limiting factor for development was a brief reference to water scarcity in certain key development locations (Maxim, 2003d: 74). It thus seems as if the provincial SDF was a 'product' aiming to address the social need and optimising the economic potential of the province while the Zoning Plan was a separate 'product' reflecting the resource base and sensitive areas. Ideally the two should have been merged and jointly interpreted, or at least the implications of the one for the other should have been highlighted. The lack of alternatives and scenario setting, related to the previous point, was also specifically pointed out as a key weakness during the external project review (Virtanen, *et al.*, 2004: 20) as well as during interviews with the North West Provincial Government (Chinonge, 2004: personal communication).

6.1.3 Documentation

As required by the terms of reference, a separate SEA report was prepared (Maxim, 2003c). However, the SEA report could not stand on its own and had to be read in relation to three volumes of planning reports (Maxim, 2003a; 2003b; 2003d). The documentation review thus had to consider the linkages between these other reports and the SEA report. The results show that the SEA documentation conformed to only one, partly conformed to four and failed to conform to 10 of the 15 indicators, which suggests a particularly 'poor' performance. This section reflects on the performance with specific reference to the following KPIs 11.1, 11.2, 11.3, 12.1, 13.1, 13.5, 14.1, 14.2 and 14.3 (see Tables 1 and 2).

The SEA documentation was particularly weak in describing the context. No indication was given of the SEA process followed (KPI 11.3), justification for the SEA or specific objectives it intended to achieve (KPI 11.1). This made it difficult to determine the exact scope of the SEA and its relation to the broader planning process (KPI 11.2). Moreover, the SEA report did not provide any indication or reference to who was involved in the consultation process (KPI 11.4). A positive aspect was that the SEA report did manage to show linkages between the key issues and the status quo analysis (where the state of the environment was described) (KPI 12.1). The different SEA methods used, such as specialist workshops and consultation, were only briefly referred to (KPI 13.1), with no indication of difficulties experienced and subsequent uncertainties in results (KPI 13.5). Referencing throughout the report was substandard (KPI 14.1) and the different sections were not always logically arranged (KPI 14.2) with duplication common. Lastly, an executive summary was not included (KPI 14.3).

6.2 Output effectiveness components: review results and analysis

The effectiveness review was conducted 10 months after completion of the SEA. This section reflects on the review results in relation to the direct and indirect outputs.

6.2.1 Direct outputs

Based on the interviews and documentation reviewed and in relation to the indicators described in Table 1, the effectiveness reviewed results show that the SEA achieved a 'poor' effectiveness performance with conformance to none of the set indicators. Moreover, conformance to two of the nine indicators could not be established during the review due to weak terms of reference that did not stipulate specific SEA project objectives, and the failure to establish any form of environmental monitoring to gauge trends

in environmental quality. This section discusses the effectiveness of the SEA with special reference to KPIs 15.1, 15.2, 16.2, 17.2, 17.3 and 18.2 (see Tables 1 and 2).

It was confirmed through interviews that the provincial SDF and Zoning Plan had not been formally adopted by the province as a decision support tool (KPI 17.2) and that no progress had been made in implementing the set sustainability objectives (KPI 16.2) (Chinonge, 2004: personal communication; Mangold, 2004: personal communication). The external review report, published six months after completion stated that

> *For both the provincial SDF and the pilot SEA their eventual effectiveness depends on their formal adoption and implementation by the respective provincial and municipal authorities, which is still lacking. If duly revised and formally adopted, their effectiveness is likely to be high (Virtanen et al., 2004: 23).*

This point was raised no less than six times in the final review report (Virtanen *et al.*, 2004: 9, 18-19, 23, 38, 44). The fact that almost a year after completion of the SEA no further progress towards implementation had been made, prompted the planning consultant to state bluntly that he felt North West Provincial Government were undermining two years of hard work by not finalising the departmental restructuring process and their management system (Bos, 2004: personal communication). The province needed to decide if the responsibility for implementation would stay with the Department of Development, Local Government and Housing (DDLGH) or if it should be handed over to Department of Agriculture, Conservation and Environment. Worryingly, the external review report also came to the conclusion that, "At present the human resources in both DACE and DDLGH are insufficient for the task (of implementing the provincial SDF and Zoning Plan)", a point reiterated by the provincial project manager (Chinonge, 2004: personal communication).

The lack of a legal basis for the SEA also exacerbated the problem of assigning responsibility. The Land Use Bill was still not enacted by mid 2004, with no expectation of enactment during that year. The restructuring process, combined with the lack of a legislative basis, seem to have been important barriers to effectiveness. In the meantime the consultant proposed that the province should ensure that district and local authorities incorporated the provincial SDF and Zoning Plan into their local SDF review processes during late 2004 and early 2005 (Bos, 2004: personal communication). This would at least give some alignment at the local level. In this regard two cases were identified where local authorities considered the Zoning Plan as part of their local SDF review processes (KPI 15.1). Both were pilot projects initiated as an extension of the spatial planning project, to test the application of the provincial SDF and Zoning Plan. The responses from the consultants involved were mixed, where one stated that the information assisted them a great deal, especially in their awareness of dolomitic aquifers and other sensitive surface water bodies such as pans and wetlands. The other indicated that the Zoning Plan had limited use because the provincial scale was just too large to effectively incorporate spatially at a local level (Bos, 2004: personal communication; De Bruin, 2004: personal communication).

Based on the contents of the reports and interviews it emerged that the biophysical aspects and the related sustainability objectives mostly were dealt with separate from the social and economic issues. The primary contribution of the SEA was to the Zoning Plan with limited influence on the provincial SDF. The review results show that the SEA was partly effective in integrating the biophysical aspects into the planning process through the formulation of sustainability objectives and the Zoning Plan (KPI 15.2). In relation to EIA, no proof could be found that the Zoning Plan had any effect on EIA decision making (KPI 17.3). The previous head of the EIA section highlighted the fact that from the start nobody from Department of Agriculture, Conservation and Environment was formally assigned to the project, which seriously hampered communication between departments (Boshoff, 2004: personal communication). Interviews with the new head of the EIA section within Department of Agriculture, Conservation and Environment confirmed that he was not even aware of its existence, a result also symptomatic of the large turnover of personnel within the department (Nkosi, 2004: personal communication).

Although environmental quality could not be reviewed directly because of a lack of monitoring arrangements, it was pointed out that the SEA might have missed some significant key strategic environmental issues (KPI 18.2), the two primary ones being waste management and air quality (Koivisto, 2003: 3). The SEA consultant did acknowledge this but explained that they found it extremely difficult to incorporate issues that could not be addressed or presented spatially in the final Zoning Plan (Cilliers, 2004: personal communication).

6.2.2 Indirect outputs

The review suggested one input performance area where the SEA performed relatively well, the situation analysis. The external review report (Virtanen, *et al.*, 2004: 44) as well as the project manager from the North West Provincial Government (Chinonge, 2004: personal communication), agreed that the SEA and the planning process provided a valuable database. However, delays in implementation could lead to the data becoming dated and systematically erode its value, a point also raised in the external review report as well as during interviews with the consultants (Bos, 2004: personal communication; Cilliers, 2004: personal communication). Finally, it was also stated in the external review report with reference to the broader project that,

> *Already at this stage the project inputs have had an impact on the national level debate through individuals who follow the project in the supervisory organs and participate in national level policy formulation processes in such forums … . (Virtanen et al., 2004: 18)*

To what extent this could be said specifically of the SEA is uncertain, and the review data could not shed any more light on this. However it was acknowledged by those involved that the SEA was an important learning process (Bos, 2004: personal communication; Chinonge, 2004: personal communication; Cilliers, 2004: personal communication; Koivisto, 2004: personal communication), although for some a more painful one than for others.

7. CONCLUSION

It is safe to conclude that based on the research results the particular case could not be considered as a best practice example. Although it would not be possible to make sweeping generalisations on the performance of SEA in South Africa the poor input

quality and output effectiveness results did flag the following key aspects which need to be considered when SEAs are conducted in relation to spatial planning:

The first fundamental weakness was a lack of clarification why the SEA was needed and what it intended to achieve in the first place. The case was an example of a poorly defined understanding of SEA culminating in poor quality inputs and eventual ineffectiveness. It was evident that the role players involved with the SEA did not have a clear understanding of the concept, let alone a common understanding. Future attempts at applying SEA to SDFs needs to ensure, as a point of departure, that the particular interpretation and aims of SEA is clear and unambiguous.

Secondly, the fact that no actual 'assessment' could be distinguished strengthens the notion that the SEA resembled more of a biophysical data gathering exercise as part of the situation analysis phase of a planning process than an actual assessment. Ultimately the biophysical component (reflected by the zoning plan) was never integrated or considered in the final provincial SDF. Stated otherwise, the implications of the provincial SDF for the Zoning Plan was never considered. The lack of an 'assessment' activity raises the obvious question, whether the SEA qualifies to be regarded as a strategic 'assessment' at all?

The third fundamental weakness relates to the lack of understanding of the decision making context the SEA aimed to inform. The almost total disregard and lack of importance given towards integrating SEA with decision making processes reflects what could be considered a technical rational approach to SEA. This approach supports the notion that more and better 'scientific' information will lead to better decision making, ignoring the understanding that decision making (especially as strategic level) is essentially a value driven process driven by political and personal value systems. Such an approach to environmental assessment has been severely criticised and discredited in the literature especially from the political and decision making sciences (see amongst other Bartlet & Kurian, 1999; Kornov & Thissen, 2000; Nilsson & Dalkmann, 2001; Weston, 2004; Richardson, 2005).

Finally the results of the performance evaluation should raise some concern about the expertise available to conduct SEA within the country. If high profile cases at provincial level deliver such performance one could assume that the capacity and expertise does also not exist at local level. The poor performance results could possibly serve as a warning that SEA should not be legislated before its identity are clearly defined and some effort has been made to extend capacity and expertise across the board. Therefore, to take the debate forward it is proposed that more planning related case studies be reviewed to allow for a comparative analysis of results. Furthermore, to deal more effectively with causality, real time action research could also be explored as part of a flexible research design. Only once a better understanding is gained of the performance of SEA as well as causality between inputs and outputs, can best practice be identified towards continual improvement in the application of SEA.

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