A critical evaluation of environmental assessment tiering in South Africa

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ABSTRACT

Environmental assessment (EA) plays an essential role in understanding the implications of our actions and the measures we implement to avoid unacceptable impacts. Internationally, tiering between policies, plans, programmes and projects contributed to the effectiveness of EA. In South Africa, EA is the foundation of the Environmental Right as contained in South Africa's Constitution to achieve ecological sustainability whilst promoting justifiable social and economic development. Therefore, this research aims to evaluate EA tiering in South Africa critically and share the results to improve EA practice for similar contexts internationally. To achieve this research aim, a conceptual and theoretical understanding of tiering in EA and the Theory of Change internationally, was developed. An evaluation framework for the functioning of EIAs within a tiered EA system in South Africa was developed to evaluate tiering within the South African EA system. Three case studies were evaluated on how EIAs functioned within the strategic context provided by Strategic Environmental Assessments and Environmental Management Frameworks, augmented by interviews of specialists in EA. The research found that EA tiering in South Africa is not functioning well. Tiering in EA is not addressed in any meaningful way in legislation, and the current institutional arrangements to support its implementation are inadequate. Through policy and law reform and capacity building, EA practices can be improved to use tiering in EA effectively to achieve sustainable development outcomes. The research findings apply to similar circumstances internationally where tiering in EA is not addressed in legislation and institutional resources are limited to support the implementation of EA tiering.

Keywords:

Tiering, environmental assessment, strategic environmental assessment, environmental impact assessment, environmental management framework

ABBREVIATIONS AND ACRONYMS

BA:	Basic Assessment
BAR:	Basic Assessment Report
CBA:	Critical Biodiversity Area
CoCT:	City of Cape Town
DEA&DP:	Western Cape Department of Environmental Affairs and Development Planning
DEA:	Department of Environmental Affairs (now the Department of Forestry, Fisheries and Environment)
DEAT:	Department of Environmental Affairs and Tourism (now the Department of Forestry, Fisheries and Environment)
DFFE:	Department of Forestry, Fisheries and Environment
DHS:	Department of Human Settlements
DoE:	Department of Energy
DMRE:	Department of Mineral Resources and Energy
DPME:	Department of Planning, Monitoring and Evaluation
DSDP:	District Spatial Development Plan
DWS:	Department of Water and Sanitation
EA:	Environmental Assessment
EAP:	Environmental Assessment Practitioner
EIA:	Environmental Impact Assessment
EIAMS:	Environmental Impact Assessment and Management Strategy for South Africa, 2014

EIP:	Environmental Implementation Plan
EIR:	Environmental Impact Report
EMF:	Environmental Management Framework
EMP:	Environmental Management Plan
EMPr:	Environmental Management Programme
IEM:	Integrated Environmental Management
IDP:	Integrated Development Plan
IRP:	Integrated Resource Plan
ISDF:	Integrated Strategic Development Framework
LUPO:	Land Use Planning Ordinance, 1985
NGO:	Non-governmental organisation
NDP:	National Development Plan
MEC:	Member of the Executive Council
NEMA:	National Environmental Management Act, 1998
PAJA:	Promotion of Administrative Justice Act, 2000
PPP:	Policies, Plans and Programmes
PPPP:	Policies, Plans, Programmes and Projects
REDZ:	Renewable Energy Zone
RSA:	Republic of South Africa
SDF:	Spatial Development Framework
SANBI:	South African National Biodiversity Institute
SANParks:	South African National Parks
SEA:	Strategic Environmental Assessment

SEIA:	Socio-Economic Impact Assessment
SEMA:	Specific Environmental Management Act
SPLUMA:	Spatial Planning and Land Use Management Act, 2013
ToC:	Theory of Change
UN:	United Nations
WC: LUPA:	Western Cape Land Use Planning Act, 2014
WCG:	Western Cape Government
WEF:	World Economic Forum

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CHAPTER 1: INTRODUCTION

This chapter first provides the background and context of the research (section 1.1), introduces the research by justifying the problem statement (section 1.2) and the related research aim and objectives (section 1.3). The aim and objectives provide the direction for the research in terms of design and thesis structure. For this reason, the research approach is briefly highlighted (section 1.4). The chapter concludes by explaining the structure of the thesis (section 1.5).

1.1 Background and Context

Globally, environmental pressures are increasingly impacting the quality of life of communities and individuals, especially in developing countries such as South Africa (Swedish Environmental Protection Agency, 2012; UNEP, 2019; Sandham *et al*., 2022; Alberts *et al*., 2022). The magnitude of the world's environmental challenges is presented in the World Economic Forum's Global Risk Report (WEF, 2023), where six environmental risks are ranked within the top ten global risks for the next decade. The realisation that we are not living in a world with limitless natural resources is hitting home, and the consequences of exceeding limits of sustainable use of natural resources are being recognised around the globe. This heightened awareness of the need for change is well-illustrated by the world's focus on achieving sustainability through the globally accepted Sustainable Development Goals (United Nations, 2015), as well as

The above reality inevitably results in citizens increasingly looking to their governments for leadership and guidance in ensuring that their environment and quality of life are maintained or improved. Arguably, the state of environmental management of a country does not rely only on the existence of good environmental legislation, but also on its practical implementation, as an indicator of good governance (Visser & Sunter, 2002; Ramzy *et al.*, 2019; Alberts *et al*., 2021). These governance instruments relate not only to command-and-control tools but also to market-based tools, agreement- or commitment-based tools, as well as civil-based tools (Nel & Wessels, 2010; Toxopeüs & Kotzé, 2017).[1] Responsible management of natural resources is a prerequisite to addressing poverty reduction and sustainable development challenges in developing countries (Feris, 2010). Unfortunately,

[1] With the understanding that all these tools must have some legislative or policy context to facilitate its implementation.

implementing and enforcing environmental legislation and other environmental management measures are often weak (Wingqvist *et al.,* 2012; Kidd *et al*., 2018).

The implementation of environmental assessment systems in countries must be seen in the context of citizens increasingly demanding governance excellence (Auriacombe, 2011; OECD, 2020a). In this research, the term environmental assessment (EA) is used as an 'umbrella term' and comprises project-related Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) for policies, plans, and programs (PPP). Within this broader notion of environmental assessment, EIAs form one of the mainstays of citizens' expectation that regulatory processes will deliver sustainable development outcomes (Morrison-Saunders & Retief, 2012; Yang, 2019). However, project-level assessments and decision-making do not result in the level of sustainable development outcomes as envisaged (Harriman & Noble, 2008; Cashmore *et al.,* 2010; Gunn & Noble, 2011; Morrison-Saunders & Retief, 2012; Retief, 2013). Alberts *et al.* (2019) in questioning the fundamentals of South Africa's EIA system through the identification of assumptions underlying EIA evaluations, listed the assumption that EIAs represented "*informed decisions regulating future activities, that are lawful, reasonable and procedurally fair, (that) will lead to progressive realization of the Section 24 environmental right*" (Alberts *et al.,* 2019:7). The concern that achieving a broader sustainability goal cannot be achieved through project level EIAs *per se*, also gave rise to SEAs for policies, plans and programmes (as explained by Wood & Djeddour, 1992; see also Thérivel *et al*., 1992; UNECE, 1992), and subsequently the notion of tiering to inform decision-making at different sequential and cascading levels or tiers of assessment and decision-making (Wood & Djeddour, 1992; Lee & Walsh, 1992; Nooteboom, 2000; Cashmore *et al*., 2004; Thérivel & Ross, 2007; Nooteboom, 2007; Arts *et al*., 2011; Gibson *et al.*, 2015; Arts & Fischer, forthcoming).

1.2 Problem statement and rationale for the research

In many countries, including South Africa, the EA journey is closely linked to the increased focus on SEA as a remedy for the failure of project-level EAs and decision-making to deliver on the promise of sustainable development outcomes (Wood & Djeddour, 1992; Lee & Walsh, 1992; Thérivel & Ross, 2007; Cashmore *et al.*, 2004; Nooteboom, 2007; Fonseca, 2022; Fischer *et al*., 2023). Globally, SEAs are now an entrenched component of EA practices (Harriman & Noble, 2008; Gunn & Noble, 2011; Fischer & González, 2021) and are applied in more than 60 countries (Fundingsland-Tetlow & Hanusch, 2012), but it also coincided with the international drive to improve the time and cost efficiency of regulatory EA processes (Bond *et al*., 2014; Fischer *et al*., 2023).

The international debate on the efficiency and effectiveness of EA also introduced the notion of tiering, where different levels of decision-making are envisaged based on tiered or cascading levels of EA. In discussing tiering internationally, Arts *et al.* (2005) stated that: "[a]*lthough tiering is an important notion to SEA and EIA in academic literature, it is hardly discussed in a critical manner (Tomlinson & Fry, 2002). Surely the concept of tiering might provide a means to address the complexity of planning and decision-making, which environmental assessments must operate. However, its implicit assumption of a linear planning process does not fit well with the dynamic nature of planning and decision-making in practice. For instance, there may be still a considerable gap between a strategic plan subject to SEA and project development with EIA. In planning practice all too often project decisions and EIAs may precede strategic plans and the SEAs that should provide the framework for project decision-making. Nevertheless, it is clear that good coordination between planning levels and between SEA and EIA is needed to achieve sound (sustainable?) planning, efficient and effective decision-making. The question is: how can the link between SEA and EIA that is all too often missing made operational and what is the actual and potential role of tiering?*" (Arts *et al.*, 2005:1). A survey done by Thérivel and González (2021), highlighted that tiering in EA still has not been mainstreamed to address the benefit thereof as proposed by Arts *et al.* (2005; 2011).

Arts *et al.* (2005) also highlighted that most of the literature focuses on the theory of tiering and the different forms thereof, assuming linear relationships between tiers but lacking a critical debate on the implementation thereof. This theoretical focus is confirmed by Arts *et al.* (2011) and Kalle and Arts (2013), as well as Thérivel and González (2021), who found only a few examples of tiering being captured in legislation, whilst reporting on several challenges that are still hampering the implementation of tiering in EA.

Focusing on South Africa, concerns related to EIAs only came into the spotlight in the early 2000s following the formalisation of the EIA system in 1997 with the promulgation of the first EIA Regulations (Retief *et al*., 2007; DEA, 2008; Kidd & Retief, 2009; Retief, 2010; Bond *et al.,* 2014; Retief *et al*., 2016; Kidd *et al*., 2018; Roos *et al*., 2020). The ongoing concern about the efficiency and effectiveness of EIAs has led to an increased call to turn to strategic-level instruments as they are more suited to deal with strategic level concerns, alternative cumulative and synergistic impacts, and better suited to achieve sustainable development outcomes.

In a parallel drive to improve the time and cost efficiency of regulatory processes, the South African government turned to strategic-level EAs to enable changes to the legal framework governing EA. These law reforms purposefully pursued the development of other

environmental management instruments to replace or reduce the need for regulatory project-level assessment and decision-making, especially related to large-scale infrastructural developments[2] (DEA, 2014; Cape *et al*., 2018; Retief *et al.*, 2021; Alberts *et al*., 2023; Alberts, *et al*., 2024).

In South Africa, using SEAs to inform strategic-level assessments and decision-making has undergone different stages. Between 1995 and 2003, SEAs were used extensively but dropped after that. These initial SEAs lacked any meaningful regulatory effect (Retief, 2007; Retief *et al*., 2007). However, the use of SEAs again increased over the last 10 years, primarily driven by the national government, focusing on improving regulatory efficiency through the development of regulatory instruments to support or replace EIA procedures (Cape *et al.*, 2018; Fischer *et al*., 2019; Retief *et al*., 2021).

Unique to South Africa, Environmental Management Frameworks (EMFs) are also a strategic-level environmental instrument used to inform EIAs. EMFs are governed by separate legislation, namely the EMF Regulations (South Africa, 2010). The use of EMFs has intensified since the promulgation of its enabling legislation in 2010 (Marais *et al.*, 2015; Cilliers & Retief, 2016; Retief *et al*., 2021). EMFs are discussed in more detail in Chapter 4.

The lack of critical debate and understanding of tiering in EA is also evident in South Africa. There are no articles dedicated to the notion of tiering in EA in South Africa, and where tiering is mentioned (Alberts *et al*., 2013; Retief *et al*., 2019; Fischer *et al.*, 2019; Retief *et al*., 2021), it is done uncritically. This lack of focus on tiering was also one of the indirect contributing factors that resulted in the drafting of a report by the national Department of Forestry, Fisheries and Environment (DFFE) in conjunction with provincial Departments responsible for environmental management on the development and use of integrated environmental management instruments (DFFE, 2023). The problem statement in the report states that "[*t*]*here is a lack of development and implementation of other integrated environmental management (IEM) instruments, beyond the over-reliance on the EIAs, to perform regulatory functions and achieve sustainable development outcomes whilst ensuring environmental protection" (DFFE, 2023: 7)*[3]*.* The report differentiated between strategic-level instruments and project-level instruments, using the following categories: "……. *strategic instruments that are aimed at influencing strategic planning efforts across different functional areas (e.g.,*

[2] In terms of section 24(2)(c), (d) and (e) of the NEMA, (regulatory) environmental instruments can be developed that remove the need for requiring environmental authorisations (and its associated EIA process) before conducting certain development activities (South Africa, 1998a)

[3] Page 7 of DFFE (2023).

agriculture, development planning, mining, etc.) at all spheres of government …[and] *regulatory (project level) instruments that directly informs regulatory decision-making (e.g. EIAs and Standards)" (DFFE, 2023: 11).* Although tiering is not explicitly discussed in the report, the categories of instruments listed indicate an acknowledgment of tiering in EA. However, the problem statement that the report sets out to address reflects on the poor implementation of tiering in EA in South Africa. Several stakeholders who participated in the drafting of the report also reflected on this challenge by calling for a clarification of the relationship between the various instruments[4]. The challenge of weak differentiation between different instruments was also highlighted by Retief *et al*. (2021).

The above discussion highlights the lack of critical debate on the issue of tiering in EA, particularly how EIA, as the most established EA instrument, functions within a tiered EA system.

This research specifically focuses on South Africa for the following reasons:

- South Africa is representative of developing countries that face the challenge of balancing developmental pressures with environmental management. Its Constitution provides a strong focus on environmental protection as an integral part of sustainability and environmental governance (Feris, 2010; King *et al*., 2018), especially considering its rich biological diversity (SANBI, 2024) and its international commitments towards achieving the international Sustainable Development Goals (Sachs *et al*., 2023).
- South Africa has a long history in EA spanning more than two decades (Alberts *et al*., 2023; Kidd *et al*., 2018).
- South Africa has a dynamic EA practice and a long tradition of academic research that reflects on its EA journey over more than two decades (Retief *et al.*, 2021; Alberts *et al*., 2023; Kidd *et al*., 2018).

Based on the above, South Africa can make a valuable contribution to the international debate on tiering in EA. However, there is a dearth of information that critically debates the conceptual, technical, legislative, and other institutional requirements that should inform and support tiered EA and decision-making in South Africa.

[4] Table 2 of DFFE (2023).

1.3 Research aim and objectives

Considering the problem statement, this research aims to critically evaluate EA tiering in South Africa and to share the results towards improving EA practice for similar contexts internationally.

To address the overall research aim, the following research objectives were identified:

- Research Objective 1: To develop a conceptual and theoretical understanding of tiering in EA, as well as theory of change, internationally.
- Research Objective 2: To develop an evaluation framework for the functioning of EIAs within a tiered EA system in South Africa.
- Research Objective 3: To critically evaluate tiering within the South African EA system.
- Research Objective 4: To make recommendations towards improving tiering within the South African EA system.

1.4 Research approach

To achieve the research aim and objectives, the research approach uses case studies to evaluate actual (real-life) phenomena within its real-world setting (Yin, 2018). According to Auriacombe (2011) and the DPME (2011), evaluation research is often used to determine if policies and plans of programmes as forms of intervention are effective in achieving the desired change. The AEA Evaluation Policy Task Force (2009) also highlighted that applied evaluation research plays an increasingly valuable role in measuring the extent to which government programmes are achieving its aims/goals. Within the context of evaluation research, Theory of Change (ToC) is increasingly being used to evaluate the effectiveness of plans, policies, and programmes in meeting the desired legislative and institutional outcomes (DPME, 2011; Auriacombe, 2011; Vogel, 2012). According to Auriacombe (2011) "*policy change programmes, which are based on an appropriate theory of change and implementation strategies that are based on appropriate programme logic, must be developed to help transform an unsatisfactory status quo into more desirable future conditions*" (Auriacombe, 2011: 41). ToC was also used in an evaluation study on the effectiveness of the EIA system in South Africa (DEA/DPME, 2019; Alberts *et al*., 2019).

An evaluation research approach was therefore used in this research to critically evaluate the implementation of tiering in the EA system in South Africa. 'Theory of Change' (ToC) (Weiss, 1995; Vogel, 2012; De Silva, 2014) was used to develop a logical framework (inner logic) for how EIA operates within the South African tiered EA system. Based on the logical framework,

an evaluation framework was developed to evaluate case studies that included EIAs that were conducted within the context of strategic-level EAs in the form of EMFs or SEAs. A simplistic, multiple-case study design was selected as the most appropriate research method - to study and understand these cases in-depth, how it worked, and its interaction with complex, contextual real-world environments (Rowley, 2002; Ridder, 2017; Yin, 2018).

In summary, this research followed an evaluation approach, using the qualitative evaluation of case studies to achieve the research aim and objectives.

1.5 Structure of the thesis

The research included five (5) phases structured in ten (10) chapters as illustrated in Figure 1-1. The following sections describe the various phases and associated chapters.

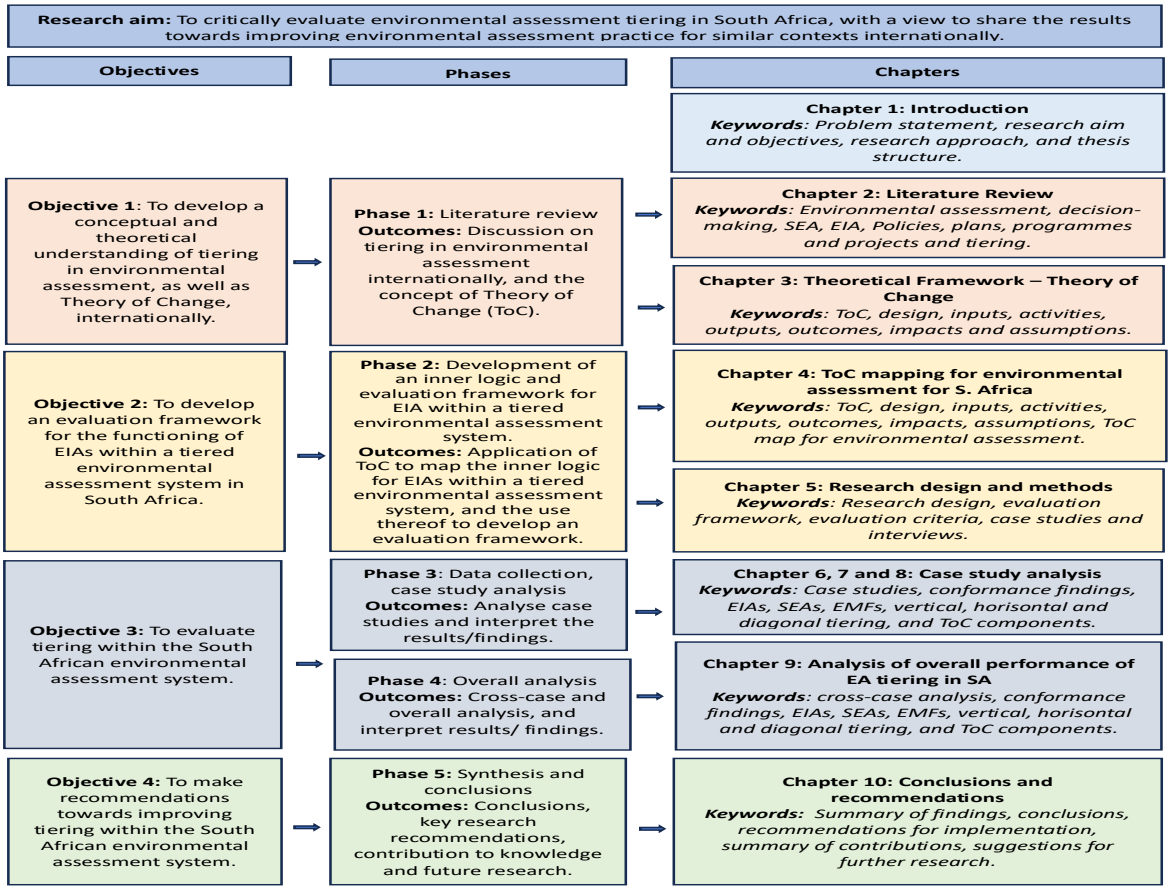

Figure 1-1: Thesis Structure

Chapter 1 provides an introduction to the research. It explains the problem statement and the research aim. It reflects on the international understanding and application of tiering in EA, and how this relates to the challenge of strategic-level decision-making versus project-level

decision-making. The five phases in Figure 1.1 are further described in sub-sections 1.5.1 to 1.5.5 below.

1.5.1 Phase 1: Literature Review

Chapter 2 reviews the international literature on tiering in EA. It discusses the purpose of tiering; influencing factors; challenges experienced in creating a rational link between tiered policies, plans, programmes, and projects; the EAs that inform them; and decision-making.

Chapter 3 provides a literature review on 'Theory of Change' (ToC). It describes the different ToC components, i.e., the impacts to be achieved, intermediate and immediate outcomes (pre-conditions), outputs, activities, inputs, and design components. It also discusses the role of assumptions associated with the causal link between the various components to create a logical framework.

1.5.2 Phase 2: Developing an inner logic and evaluation framework

Chapter 4 develops a logical framework for how EIAs function within a tiered EA system in South Africa, by using ToC and mapping out the different ToC components. Thereby, this chapter builds on the findings of chapters 2 and 3 and combines it with the results of an analysis of South Africa's EA system. The latter reflects the legislation, policy documents, evaluation studies, and academic publications on South Africa's EA system.

Chapter 5 uses this logical framework, or inner logic for how EIAs function within a tiered EA system, to develop an evaluation framework. The chapter sets out the research design and methods to be followed for the in-depth evaluation of case studies.

1.5.3 Phase 3: Case Studies

Chapters 6, 7, and 8 evaluate the effectiveness of EA tiering, seen from an EIA perspective, for selected case studies by applying the evaluation framework developed in Chapter 5. The case studies evaluate how EIAs function within strategic EA tiers, and associated legislation, policies, and plans.

1.5.4 Phase 4: Cross-case and overall analysis

Chapter 9 applies a cross-case analysis approach to identify possible patterns, relationships and causal factors related to tiering in the South African EA system emerging from the findings of the evaluation of case studies, as well as from the review of policies and legislation in South Africa, augmented by the results from general interviews with specialists in EA. This chapter,

based on the learning from the previous chapters, presents overall findings and discusses the causal factors affecting the effectiveness of tiering in EA in South Africa.

1.5.5 Phase 5: Synthesis and Conclusions

Chapter 10 concludes by demonstrating the extent to which the research aim and objectives related to tiering in EA in South Africa have been achieved. Recommendations are made to improve the application of EA tiering in practice in South Africa, as well as suggestions for future research. The chapter also reflects on the contributions of this research to the international literature on tiering in EA.

CHAPTER 2: LITERATURE REVIEW – EA TIERING

This chapter addresses research objective 1 by reviewing the conceptual and theoretical understanding of tiering in the international literature to capture how tiering in EA is approached internationally. It reflects on the journey from EIA to SEA (section 2.1), the history of tiering (Section 2.2), the purpose of tiering (section 2.3), tiered assessments and decision-making (section 2.4), influencing factors on tiering (2.5), follow-up in tiering (section 2.6), the role of rationality in tiered environmental assessment and decision-making (section 2.7) and the relevance of power dynamics in tiering (section 2.8). The chapter concludes by discussing tiering in EA in South Africa (section 2.9), covering some aspects dealt with in the previous section but with a specific focus on South Africa.

2.1 Environmental assessment – from EIA to SEA

Internationally, environmental impact assessment is arguably at the core of good environmental governance (Caldwell, 1982; Yang, 2019; Morrison-Saunders, 2023). Since its inception in the 1970s in the USA, EIA has been the most widely used and institutionalised EA instrument, and in most instances, it is mandated by legislation (Morgan, 2012; Morrison-Saunders & Retief, 2012; Lyhne *et al.,* 2016; Yang, 2019; Morrison-Saunders, 2023). However, in the last three decades, EIAs have increasingly been scrutinised and criticised and often have been subjected to regulatory reform in an effort to address the (perceived) lack of regulatory efficiency and substantive effectiveness (Morrison-Saunders & Retief, 2012; Bond *et al.*, 2014; Morrison-Saunders *et al*., 2014; Lyhne *et al.,* 2016; Retief *et al*., 2016; Kidd *et al.*, 2018; Fischer *et al*., 2023; Alberts *et al*., 2024).

In many countries, including South Africa, the EA journey is closely linked to the increased focus on SEA as a possible remedy for the failure of project-level EIAs and decision-making to deliver on the promise of sustainable development outcomes (Fischer & González, 2021; Fonseca, 2022; Hanna, 2022). Partidário (1999) indicated that "[*t*]*he reasons [for SEA] are various but initially related to the timing of project EIA, i.e. it enters the decision-making process at too late a stage to be able the final decision in a satisfactory way*" (Partidário, 1999:60). The idea was that "*by preparing a sequence of EAs at different planning levels and linking them, foreclosure may be prevented, postponement of detailed issues may be permitted, and assessments can be better scoped*" (Arts *et al.,* 2011: 415). Whilst the efficiency and effectiveness of EIAs have been an international concern since the late 1980s (Wood & Djeddour, 1992; Lee & Walsh, 1992; Thérivel & Ross, 2007; Cashmore *et al*., 2004; Nooteboom, 2007), this concern only came into the spotlight in South Africa in the early 2000s

following the formalisation of the EIA system into legislation in 1997 (Retief *et al*., 2007; DEA, 2008; Kidd & Retief, 2009; Retief, 2010; Kidd *et al*., 2018). In South Africa, this ongoing concern has led to an increased call for turning to strategic level assessments and environmental management frameworks (hereafter referred to as "strategic instruments") as being better suited to address strategic level impacts, cumulative and synergistic impacts, and achieving sustainable development outcomes (DEA, 2014; Retief *et al*., 2021). This experience is consistent with that of the international community (Partidário, 2012; Bina, 2007; Pope *et al.*, 2013; Morrison-Saunders *et al.*, 2014; Fischer & González, 2021).

Although it is generally accepted that SEA, rather than EIA, is the preferred instrument to assess policies, plans, and programmes (PPPs) (Fischer & González, 2021; Fonseca, 2022; Hanna, 2022), a clear distinction should be made between promoting SEA as the appropriate assessment instrument based on the failure of EIA to extend beyond its project scope and the notion that EIA was not intended to apply to PPPs. Bina (2007) highlights that "[i]*t is one thing to argue that a new instrument (SEA) was needed because of the widespread failure of regulations (and subsequent implementation) to extend EIA beyond the scope of projects. It is another to apparently ignore such failure, building a case on the erroneous assumption that EIA was not meant to apply to PPPs*" (Bina, 2007:590). Originally, Lee and Wood (1978) referred to EIA as an instrument to assess PPPs. Morrison-Saunders *et al.* (2014) also highlighted that while many impact management systems worldwide cater for the separation of EIA and SEA, such distinctions do not acknowledge that their practices are rooted in the same foundations. Although the general aspects of EIAs (e.g., scoping of issues and impacts, identification of alternatives, significance rating of impacts, mitigation, etc.) can be broadly applied to both SEAs and EIAs, the regulation of EIAs in most countries, including South Africa, has led to the promulgation of legislation that only applies EIA as a project-level assessment instrument (Retief, 2010; Morrison-Saunders *et al.*, 2014; Kidd *et al.*, 2018; Yang, 2019; Fonseca, 2022; Hanna, 2022).

Therefore, over the last two to three decades, SEA has been promoted as the primary assessment instrument for PPPs and EIA as a project-level instrument. For this research, EIAs and SEAs represent a continuum along which SEA constitutes the more strategic-level assessment instrument and EIA the project-level assessment instrument. This continuum between EIA and SEA also introduces the notion of tiering, where different levels of decision-making are linked based on tiered or cascading levels of EA information.

2.2 The history and definition of tiering

In essence, tiering can be described as different levels of sequential Policies, Plans, Programmes, and Projects (PPPPs) for which EAs are conducted to inform these various levels (Wood & Djeddour, 1992; Wood, 2003; Arts *et al.*, 2005; Arts *et al.*, 2011; Fischer, 2005; Kalle & Arts, 2013; Thérivel & González, 2021; Arts & Fischer, forthcoming):

- *Policies* provide strategic guidance at a broader (often national) scale without being time- and space-specific, on the general direction or course of action that is being pursued and which guides ongoing decision-making.
- *Plans* represent a purposeful, forward-looking strategy or design, often with coordinated priorities, options, and actions, that facilitates policy implementation, generally at a smaller scale and more spatially focused, compared to policies.
- *Programmes* are coherent, planned schedules of project proposals that implement a plan, policy, or policy direction. They are often focused geographically and/or in specific sectors.
- *Projects* are site-specific development proposals (e.g., residential or solar energy).

The notion of tiering is not new, and the concept was first introduced in the EA by Lee and Wood (1978), leading to the frequently referenced term “policies, plans, and programmes” (PPPs). Originally, Lee and Wood referred to EIA as being used to assess all PPPs. However, over the years, the consensus emerged from EA literature that SEA is used to assess PPPs, with EIAs being reserved for project-specific assessments (Wood & Djeddour, 1992; Arts *et al.*, 2005; White & Noble, 2013; Lobos & Partidário, 2014; Noble & Nwanekezie, 2017; Kidd *et al.*, 2018), leading to many countries formalising this separation into legislation. Most countries promulgated legislation that applies EIA as a specific project-level assessment instrument, whereas SEAs, although not captured into legislation as extensively as EIAs, are commonly reserved for strategic application beyond project-level assessments (Morrison-Saunders *et al.,* 2014; Kidd *et al*., 2018; Fischer & González, 2021; Thérivel & González, 2021; Fonseca, 2022; Hanna, 2022; Morrison-Saunders, 2023; Kusters *et al.*, 2024).

The concept of cascading PPPs (or PPPPs when including also ‘projects’) was readily adopted in literature as the theoretical benchmark for how tiering should be conducted. It represents a systematic, sequential, and transparent approach to planning and implementing PPPPs (see Figures 2-1 and 2-3). For example, Arts and Fischer (forthcoming) stated that tiering can be considered a major driver behind SEAs and their existence. They argued that conducting a sequence of linked EAs at different planning levels can reap benefits such as preventing the foreclosure of relevant issues and concerns, assessments can be better scoped, and follow-up of issues can be improved. Tiering in EA is defined by Arts *et al.*, (2011) as “[t]*he deliberate,*

organized transfer of information and issues from one level of planning to another, which is being supported by EAs ….” (Arts *et al*., 2011:417).

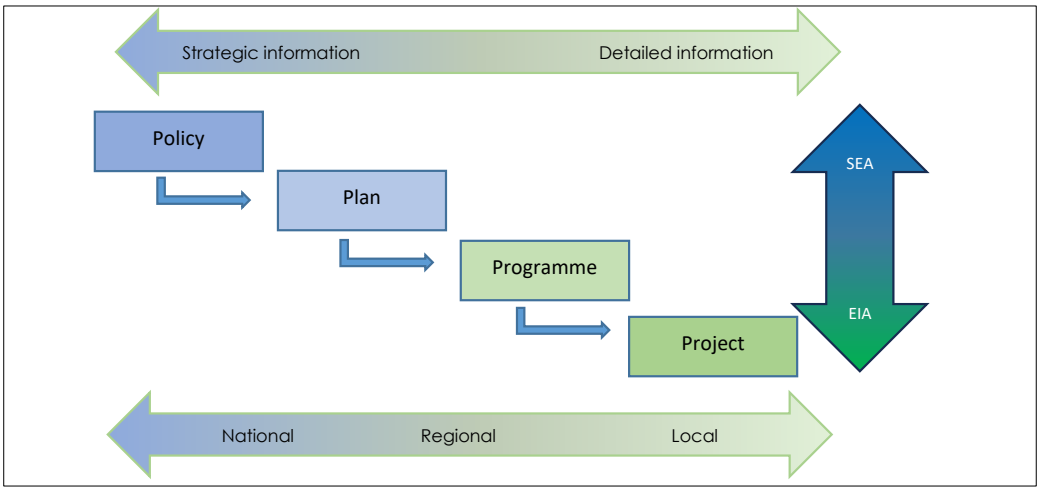

Figure 2-1: Theoretical concept of tiering (based on Wood & Dejeddour, 1992)

Arts *et al.* (2005) also stated that “[a]*ccording to the rational planning background of EIA, also the concepts of SEA and tiering seem to be grounded in rational planning approach in which hierarchic mechanisms and clear means-ends relations are assumed*.” (Arts *et al*., 2005:3) It is acknowledged, however, that in practice, tiering rarely works in this perfectly timed, hierarchical, sequential manner as reflected in Figure 2-1 (Arts *et al.*, 2005; Bina, 2007; Arts *et al.*, 2011; Thérivel & González, 2021; González & Thérivel, 2022; Arts & Fischer, forthcoming). This discrepancy between theory and practice is discussed further in section 2.4.1 and reflected in Figure 2-2.

2.3 The purpose of tiering in environmental assessments

The concept of tiering is increasingly being applied to unpack the relationship between SEA and EIA (Nooteboom, 2000; Arts *et al.*, 2005; Arts *et al.*, 2011; Fundingsland *et al.,* 2012; Noble & Nwanekezie, 2017; Thérivel & González, 2021; Arts & Fischer, forthcoming), where the primary purpose of tiered EAs is to inform the development of a hierarchy of policies, plans, programmes and projects. Although much more complex in practice, tiering, in its simplistic theoretical form, means that the higher order tier influences and provides guidance to subsequent tiers, improving the efficiency and effectiveness of decision-making:

- Tiered EAs provide cascading levels of information to inform the development of PPPPs to increase the ability of these products to deliver sustainable development outcomes

(Partidário & Arts, 2005; Arts *et al.*, 2005; Arts *et al.*, 2011; Thérivel & González, 2021; González & Thérivel, 2022; Arts & Fischer, forthcoming).

- Tiered EAs provide contextual information not necessarily contained in policies, plans, and programmes (Retief *et al*., 2021) or that inform other assessments and planning processes beyond the scope of a PPP (Fischer & González, 2021).
- Tiered environmental decision-making involves cascading levels of decisions, where the strategic-level decisions inform, streamline, or reduce the scope of subsequent project-level decision-making (Nooteboom, 2000; Partidário & Arts, 2005; Arts *et al.*, 2005; Arts *et al.*, 2011; Thérivel & González, 2021).

The tiering relationship between PPPPs and associated SEAs and EIAs is also reflected in the statement that "….*first a SEA is carried out for a plan or program then an EIA for the project that is developed to implement the policies of the plan/program. The plan/program and the SEA set the framework for the project and the EIA*" (Arts *et al.,* 2005:3). This reflection on tiering is also consistent with Thérivel *et al.* (1992), where SEA is described as " *the formalized, systematic and comprehensive process of evaluating the environmental impacts of a policy, plan or programme and its alternatives, including the preparation of a written report of the findings of that evaluation*" (Thérivel *et al.,* 1992: 19).

However, tiering in practice is often found to be more complex, not necessarily reflecting a linear, hierarchical, sequential relationship (Arts *et al.*, 2005; Arts *et al.*, 2011; Thérivel & González, 2021; Arts & Fischer, forthcoming). A more meaningful way to reflect on tiering relationships is to refer to the "splash effect" (Partidário & Arts, 2005) of a strategic initiative or SEA that can influence policies, plans, programmes, and projects in any direction and not necessarily in sequence. (see Figure 2-2). For example, a SEA on shale gas development in the Karoo region of South Africa (DEA, 2017a) triggered the need for an investigation into the readiness of the government to deal with increased service delivery demands flowing from any large-scale development in the Karoo (DEA&DP, 2021).

2.3.1 Providing contextual information

Tiering in EA provides information on the strategic level context to inform subsequent tiers of assessment (Wood & Djeddour, 1992; Noble, 2000; Arts *et al*., 2005; Gunn & Noble, 2011; Partidário, 2012; Thérivel & González, 2021; González & Thérivel, 2022). The flow of information between tiers is the foundation thereof – the information in a specific tier influences and shapes a subsequent tier (Arts *et al*., 2005; Arts *et al*., 2011; Thérivel & González, 2021).

Therefore, legislation and policies should inform the development of plans and programmes, and projects should be informed by the contextual information flowing from legislation, policies, and plans.

EAs operate within complex socio-ecological systems (Nooteboom, 2000; Cilliers, 2005b; 2008; Arts *et al.,* 2011; Audouin & De Wet, 2012). Within these complex systems, identities, boundaries, and limits of acceptable change are developed through the interactions and relationships within communities (Cilliers, 2008; Jones, 2011). In strategic assessments and planning initiatives, this is expressed through their participation in creating visions for the future development of their living environments, including sustainability (Arts *et al.*, 2011). At the project level, EIAs, if used as stand-alone instruments or if they operate within a strategic void, are not adequately equipped to deal with controversial development proposals and in communities with poorly developed identities., i.e. weakly developed networks of interaction and poorly defined, boundaries or limits of acceptable change (Hardcastle & Gerber, 2009). Arts *et al.* (2011) highlighted that the complex nature of planning and decision-making calls for a tiered approach, and achieving sustainability objectives requires a broader approach beyond the scope of project-level assessments. They also refer to this complexity in discussing the dynamic nature of planning and decision-making due to variables such as environmental changes, the diversity of stakeholders, and changing socio-economic dynamics. It is only at a strategic level that the future vision of communities should be determined through ongoing community participation and contribution. It is at this level where the integration of scientific/technical information and normative/value-based inputs (Audouin & De Wet, 2012) shapes the development of a clear sense of community identity and boundaries (Cilliers, 2008; Hardcastle & Gerber, 2009; DEA, 2017; Elling, 2009).

Tiering in EA partly addresses the challenge of tackling the complex and multi-scaled nature of environmental problems. It facilitates the flow of contextual information between tiers and the integration of science into plans and policies across different scales, guiding lower-level tiers to achieve sustainable development outcomes (Nooteboom, 2000; Arts *et al.*, 2011; Partidário, 2012; Thérivel & González, 2021).

2.3.2 Reduction of information requirements through tiering

Tiering can be seen as a process of rationalising information requirements and avoiding duplication of information and knowledge (Nooteboom, 2000; Arts *et al*., 2005; Fischer, 2005; Gibson *et al.*, 2015; Thérivel & González, 2021; González & Thérivel, 2022).

Tiering can reduce the level and scope of assessment required by narrowing the range of alternatives considered at lower levels of tiering, especially at project-level EIAs (Nooteboom, 2000; Arts *et al*., 2005; Fischer, 2005; Thérivel & González, 2021; González & Thérivel, 2022). Strategic-level assessments are better suited to consider strategic alternatives and assess large-scale, cumulative, and synergistic impacts, including the avoidance thereof, making project-level assessment more time and cost-efficient. Gibson *et al.* (2015) noted that "[e]*fficiencies are gained by addressing appropriate issues at higher assessment tiers and using the results to shape project level decisions, not by artificially or arbitrarily limiting the scope of any assessment*" (Gibson *et al.,* 2015: 261).

EIA, as a project-level assessment instrument, was never intended to operate in isolation (Hardcastle & Gerber, 2009; Morrison-Saunders, 2023). Its substantive effectiveness and time and cost efficiency depend on the existence of appropriate strategic, contextual information (flowing from higher levels of tiered assessments) to inform the identification of environmental issues and assessment of associated impacts (Nooteboom, 2000; Hardcastle *et al.*, 2009; Partidário, 2012; Thérivel & González, 2021; González & Thérivel, 2022; Morrison-Saunders, 2023). A poorly defined or absent strategic context will raise strategic-level impacts during project-level assessment processes. However, the scope of these project-level assessment processes is ill-equipped to address such impacts (Arts *et al.*, 2011; Partidário, 2012; Kalle & Arts, 2013; DEA, 2017; Bond *et al.*, 2022).

The rationalisation for tiering to lead to the reduction of information requirements at the subsequent EIA level includes the following:

- Assessment of cumulative impacts: Cumulative impacts transcend the time and spatial scope of project-level assessments. While EIAs should identify and investigate cumulative impacts, such impacts can only be addressed when considering these EIAs within their context provided by the broader environments (Nooteboom, 2000; Hardcastle *et al*., 2009; Bragagnolo & Geneletti, 2012; Kalle & Arts, 2013; DEA, 2017; Fischer *et al.*, 2019; Thérivel & González, 2021; González & Thérivel, 2022).
- Strategic alternatives that may be relevant to address strategic or cumulative impacts identified during project-level assessments. These alternatives transcend the scope of project-level assessments and can be better assessed at the strategic level, reducing the need for strategic alternatives to be dealt with at a project-level assessment (Nooteboom, 2000; Arts *et al*., 2005; Kalle & Arts, 2011; Arts *et al.,* 2011; Gibson *et al.,* 2015; DEA, 2017; Fischer *et al.*, 2019; González & Thérivel, 2022).

- Reduction of information requirements: Information provided at higher tiers may reduce the need for such information to be gathered at the project level. It can also reduce the scope and focus of issues to be assessed at a lower tier, provide context that influences significance ratings during project-level assessments, and direct attention to the impacts that require further investigation (Arts *et al*., 2005; Kalle & Arts, 2011; Arts *et al.*, 2011; Gibson *et al.*, 2015; Fischer *et al.*, 2019; González & Thérivel, 2022).
- Efficiency of project-level assessment: All these aspects contribute to the efficiency of project-level assessments, specifically, reducing the need for information at this stage translates into improved time and cost efficiency (Arts *et al*., 2005; Nooteboom, 2000; Kalle & Arts, 2011; Gibson *et al.*, 2015; DEA, 2017; Fischer *et al*, 2019; Thérivel & González, 2021; González & Thérivel, 2022).
- Improved cooperative governance: Tiering also provides opportunities for cooperation between decision-making authorities in different sectors, especially where there is overlap (and even alignment) between strategic planning initiatives within these different sectors, as well as the overlap of regulatory decision-making based on these strategic contexts informing the various regulatory decisions (DEA, 2014; DEA, 2017; Fischer *et al.*, 2019; González & Thérivel, 2022). Therefore, cooperation relates to horizontal and diagonal tiering between sectors and spheres (Arts *et al.*, 2011; Thérivel & González, 2021).

Based on the above, the ability of EIAs to achieve their efficiency (time and cost) and effectiveness (sustainability) goals depends on being contextualised within the broader framework provided by tiering. Considering information flowing between tiers is essential for reducing information requirements at the EIA level.

2.3.3 Preventing foreclosure on important issues and impacts

The existence of tiered assessments can prevent the premature closure (scoping out) of certain issues and alternatives, which may have a significant impact on the environment, without the impacts associated with such issues being assessed and concluded rationally (Arts *et al*., 2005; Gibson *et al.*, 2015; Thérivel & González, 2021; González & Thérivel, 2022; Arts & Fischer, forthcoming). Equally so, it can assist in scoping out issues of insignificant impact.

Thérivel and González (2021) noted that "[e]*ven where higher-tier assessments are broad and non-spatially specific, the issues identified and data collected at that tier can set terms of reference for lower-tier assessments….*" (Thérivel & González, 2021:9). Tiering guides the scoping of issues and alternatives, including information on policy imperatives, cumulative

impacts, strategic alternatives, sensitive socio-ecological attributes and opportunities, and other contextual information (Arts *et al*., 2011; Gibson *et al*., 2015; Thérivel & González, 2021; Bond *et al*., 2022). Gibson *et al.* (2015) stated that "[t]*he main tiering idea links the project and strategic levels and has two parts—to use law-based strategic assessments for policies, plans and programmes to address big issues and opportunities, broad alternatives and cumulative effects that cannot be covered as effectively and efficiently at the project level, and to use the strategic level findings as authoritative guidance for project planning and assessment*" (Gibson *et al*., 2015: 259).

Scoping at a strategic level sets the agenda for project-level EIA processes, identifying issues that need further assessment (or not) at the EIA level. It helps EIA processes to focus on the relevant issues, therefore improving efficiency by reducing the cost and time spent on unnecessary issues while identifying relevant concerns that require further assessment (Sánchez & Silva-Sánchez, 2008; Arts *et al*., 2011; Gibson *et al*., 2015; Cape *et al.*, 2018; Thérivel & González, 2021; González & Thérivel, 2022).

Although tiering cannot ensure that all important issues will be addressed at an EIA level, it can provide a strategic context highlighting the importance of certain issues and alternatives. Therefore, the strategic context is important in supporting informed decision-making in the scoping of issues and alternatives during the EIA process (Arts *et al*., 2005; Arts *et al*., 2011; Gibson *et al.*, 2015; Thérivel & González, 2021; Arts & Fischer, forthcoming).

2.3.4 Improved deliverance on sustainability outcomes through tiering

All the aforementioned aspects discussed as part of the purpose of tiering contribute to the ability of different EA tiers to deliver sustainable development outcomes collectively. The relationship between EA (especially SEAs) and sustainability is generally acknowledged (Thérivel *et al.,* 1992; Pope *et al.,* 2004; Gibson *et al*., 2005; Morrison-Saunders & Retief, 2012; Pope & Morrison-Saunders, 2013; White & Noble, 2013; Partidário, 2015; Morrison-Saunders *et al*., 2019; González Del Campo *et al*., 2020; Ravn Boess *et al*., 2021; Bond *et al*., 2022; Polido, 2023). Thérivel and González (2021) noted that "[e]*ven where higher-tier assessments are broad and non-spatially specific, the issues identified and data collected at that tier can set terms of reference for lower-tier assessments….. Such information flows and feedback loops enhance the knowledge base, and improve both the assessments and the sustainability of plans and projects*" (Thérivel & González, 2021:9). Arts *et al*. (2011) specifically argued that "…. *systematic tiering of EA is a prerequisite for decision-making for*

sustainable development. Large-scale, cumulative environmental problems need structured and systematic approaches to decision-making and assessment from the most strategic level to concrete, operational level. Tiering may provide a vehicle for explicit transference of planning objectives to other PPP or project levels of planning" (Arts *et al.*, 2011:43).

Nooteboom (2000) highlighted that SEAs can improve decision-making systems to deliver sustainable development outcomes. He noted that project-level EIAs in isolation are not appropriate to evaluate if developments are consistent with policy objectives, especially in considering how the cumulative effects of individual EIAs contribute to larger (positive and negative) impacts – i.e., where the negative impacts contribute to the exceedance of impact thresholds, and positive impacts insofar as it contributes to achieving a sustainability goal or objective. This interdependency between SEAs and EIAs is consistent with Rossouw *et al.* (1997), who regarded one of the purposes of SEAs as being to assess cumulative impacts and to identify sustainability indicators.

There is, however, ongoing debate on how SEAs are to achieve this goal. It advocates for a shift in the focus of SEAs beyond the assessment of impacts towards being used to promote sustainability through a more flexible, consultative approach of democratic deliberation (Wiklund, 2005; Audouin & De Wet, 2012; Pope & Morrison-Saunders, 2013; Lobos & Partidário, 2014; Partidário, 2015; Bond *et al*., 2016). Bond *et al.* (2016), in their application of game theory to environmental decision-making, found that *"…. EA does function as originally intended – to apply instrumental rationality to decision making. However, the inability of the technical-rational model to deal with the more contested goals of sustainable development has led to calls for deliberative rationality to be applied. The application of game theory has suggested that EA in its current form is not designed for deliberation and will continue to suffer from legitimacy problems*" (Bond *et al*., 2016:193). Fischer (2005), whilst also highlighting the role of SEA in contributing to sustainability, strongly believed that the environmental pressures that society faces demand a rational, structured, systematic, tiered EA focus to achieve the required sustainability outcomes. Bond *et al*. (2014) also highlighted that the complexity of sustainability discourses in EA also provides opportunities for power dynamics where powerful role-players can influence the outcomes of EA to serve their vested interests.

The above discussion illustrates the complexity of the socio-economic and socio-ecological systems within which EA operates (Nooteboom, 2007; Audouin & Hattingh, 2008; Audouin & De Wet, 2012; Pope & Morrison-Saunders, 2013) and that EAs themselves are therefore complex (Arts *et al*., 2011; Gibson *et al.*, 2015; Arts & Fischer, forthcoming). Using complexity theory to reflect on EA outcomes, sustainability can, therefore, become an emergent property

of assessment processes, achieved through deliberation and an appropriate diversity of stakeholder views (Nooteboom, 2007; Audouin & Hattingh, 2008; Audouin & De Wet, 2012; Pope & Morrison-Saunders, 2013).

Tiered assessments and decision-making are important in setting cascading sustainability objectives at different tiers. Objectives form part of the strategic context that should guide to lower tiers (González Del Campo *et al*., 2020; Ravn Boess *et al*., 2021; Polido, 2023) and set limits of acceptable change (Thérivel & González, 2021). Nooteboom (2000) highlighted that the relationship between SEAs and EIAs is needed to 'trickle down' sustainability objectives to evaluate if decisions across different sectors achieve such objectives. Jones (2017), in commenting on impact assessment law reform efforts in Canada, highlighted that sustainability was founded on the understanding that many elements cannot be assessed at the project level. She highlighted that adopting a tiered approach to EA is required, where strategic and regional impact assessments are to be conducted to guide and provide contexts for project-level assessments. Arts *et al.* (2011) specifically noted that "[i]*t can be argued that systematic tiering of EA is a prerequisite for decision-making for sustainable development. Large-scale, cumulative environmental problems need structured and systematic approaches to decision-making and assessment from the most strategic level to concrete, operational level. Tiering may provide a vehicle for explicit transference of planning objectives to other PPP or project levels of planning.*" (Arts *et al.*, 2011: 43).

Based on the above, and from a tiering perspective, EIAs cannot deliver sustainable development outcomes without a strategic-level assessment and planning context to provide a sustainability focus that stretches beyond the scope of project-level assessments. Tiering can also assist in cascading sustainability objectives to guide implementation at the EIA level.

2.3.5 Facilitating knowledge brokerage through tiering

Knowledge brokerage extends beyond the mere sharing of information (Sheate & Partidário, 2010; Kørnøv *et al*., 2011; Juhola *et al*., 2024; Scodanibbio *et al*., 2023). The Canadian Health Services Research Foundation (2003)[5] defined knowledge brokering as follows: "*Knowledge brokering is one of the human forces behind knowledge transfer. It's a dynamic activity that goes well beyond the standard notion of transfer as a collection of activities that helps move information from a source to a recipient. Brokering focuses on identifying and bringing together*

[5] As quoted in Sheate and Partidário (2010).

people interested in an issue, people who can help each other develop evidence-based solutions. It helps build relationships and networks for sharing existing research and ideas and stimulating new work. Knowledge brokering supports evidence-based decision-making by encouraging the connections that ease knowledge transfer". (Canadian Health Services Research Foundation, 2003: ii). This definition of knowledge brokerage involves several key aspects, including creating opportunities for developing networks/interactions, mutual learning, and building and exchanging knowledge.

Considering the above definition of knowledge brokering, strategic level assessments and the techniques they use, such as stakeholder engagement and capacity building, the setting of objectives and indicators, the use of GIS, etc., act as knowledge exchange platforms between stakeholders (Sheate & Partidário, 2010; Kørnøv *et al*., 2011). To create this enabling environment for knowledge brokerage, strategic-level information provides a broader context to inform project-level EIA processes and empower stakeholders involved in EIA processes (Nooteboom, 2000; Arts *et al*., 2005; Hardcastle *et al.,* 2009; Cilliers, 2015; Thérivel & González, 2021; González & Thérivel, 2022). Also, considering the definition of tiering (see section 2.2), the knowledge brokerage value of EA processes is integrally linked to the creation and transfer of knowledge between stakeholders and between tiers (Fischer, 2003; Sheate & Partidário, 2010; Arts *et al*., 2005; Thérivel & González, 2021; González & Thérivel, 2022).

Effective knowledge brokerage facilitates the empowerment of stakeholders, especially in the complex interrelationship between social, economic, and biophysical components of the environment (Audouin & Hattingh, 2008). In discussing the knowledge brokerage capacities of SEA, Sheate and Partidário (2010) maintain that it is not mere learning from the SEA or strategic assessment processes but the active exchange and transfer of knowledge already owned by stakeholders, including decision-makers (i.e., promoting informed decision-making). This knowledge brokerage capacity is equally true at the EIA level (Petts, 2003; Morgan, 2012). Sheate and Partidário (2010) maintained that "[k]*nowledge brokerage has become a strong driver in current sustainability discourses, with a body of literature in multiple scientific areas that is promoting the importance of knowledge sharing and transfer as a way of breaking down barriers that impede interaction, healthy communication and collaboration*" (Sheate & Partidário, 2010: 278). Knowledge brokerage is also inherent in the principle of just administration, as argued by Alberts *et al*. (2021; 2022) and Retief *et al*. (2019), in providing reasons and reasoning for decisions.

The complexity of the socio-ecological and socio-economic environments (Cilliers, 2005; 2008; Audouin, 2009; Jones, 2011) within which tiering operates has a significant influence on knowledge brokerage (Audouin & Hattingh, 2008; Audouin & De Wet, 2012) This relates

to the complexity of the science/policy interface (Von der Heyden *et al.*, 2016; Duncan *et al.*, 2020; Juhola, *et al*., 2024), and in EA (Bond & Morrison-Saunders, 2011; Audouin & de Wet, 2012; Pope & Morrison-Saunders, 2013; Bowd *et al*., 2015). Two significant 'divides' that influence knowledge brokerage in these complex socio-ecological and socio-economic systems are:

- that the integration of social, economic and biophysical dimensions of the broader environment, as called for to achieve sustainability outcomes (Hacking & Guthrie, 2008; Bond *et al*., 2012; Morrison-Saunders & Retief, 2012; Retief, 2013), has never been fully attained and still presents an uncomfortable fit in most EA processes (Audouin & Hattingh, 2008; Audouin & De Wet, 2010 and 2012; Morrison-Saunders & Retief, 2012). Audouin and Hattingh (2008) partly attribute this socio-economic and biophysical divide to the conceptual difference between natural and social science fields; the former is founded on scientific, quantitative, and objective information, whereas the latter focuses on a normative, value-based approach, and
- linked to the above, EAs, especially EIAs, are often criticised for being too technocentric and not allowing value judgments to inform the outcomes of EIA and decision-making processes (Audouin & Hattingh, 2008; Elling, 2009; Audouin & De Wet, 2010; 2012). According to Audouin and Hattingh (2008), value judgments are often seen as separate from the technical/scientific process instead of being an integrated part or allowing it to influence and shape how technical information is being analysed and evaluated.

EAs, at both EIA and SEA levels, are often advocated for their communicative capacity, especially in facilitating sustainability outcomes in the complex science/decision-making environment (Dalkmann *et al.*, 2004; Bina, 2007; Weaver *et al*., 2008; Sheate & Partidário, 2010; Retief, 2013; Partidário & Sheate, 2013; Partidário, 2015). These authors advocate the social and communicative capacity of EAs beyond being instruments for technical analysis and focusing on producing technical/scientific rational information to facilitate broader knowledge brokerage. Therefore, tiering, in the form of PPPPs and the assessments that inform them, provides not only cascading levels of information but also empowers stakeholders through mutual knowledge sharing, learning and power-sharing (Audouin & De Wet, 2012; Sheate & Partidário, 2010; Partidário & Sheate, 2013; Arts & Fischer, forthcoming). The importance of knowledge brokerage at strategic level EAs and environmental planning frameworks cannot be over-emphasised. It facilitates all stakeholders' cooperation and participation in co-creating a strategic context for sustainability as an emerging property, which, in turn, can facilitate sustainable development outcomes at project level assessment and decision-making (Nooteboom, 2000; Nooteboom, 2007; Hardcastle *et al.,* 2010; Audouin

& De Wet, 2012; Partidário & Sheate, 2013; Arts & Fischer, forthcoming). It also emphasises the role of EA practitioners and authorities as knowledge brokers in complex systems and their role in managing complexity to facilitate sustainability outcomes to emerge from EA processes (Nooteboom, 2000; Nooteboom, 2007; Weaver *et al.*, 2008; Audouin & De Wet, 2012; Partidário & Sheate, 2013).

The above discussion highlights the knowledge brokerage value of tiering. Effective tiering of PPPPs and their tiered assessments can facilitate the generation and sharing of knowledge to empower stakeholders. It reflects the role of EAs beyond a technical rational use (Fischer, 2003) towards a more interactive, communicative application, particularly at a strategic level (Dalkmann *et al.*, 2004; Bina, 2007; Sheate & Partidário, 2010; Audouin & De Wet, 2012; Partidário & Sheate, 2013; Partidário, 2015; Bond *et al*., 2016).

2.4 Tiered assessments and tiered decision-making

The use of EA in facilitating decision-making on tiered PPPPs has been well-researched (Arts *et al.,* 2005; 2011; Partidário & Arts, 2005; Bina, 2007; Acharibasam & Noble, 2014; Noble & Nwanekezie, 2017; Thérivel & González, 2021; González & Thérivel, 2022). Tiering enables 'the right issues to be considered for decision-making at the right time' based on cascading levels of EA information (Arts *et al.,* 2011; Thérivel & González, 2021; Arts & Fischer, forthcoming). This description also highlights the different components of tiering: an assessment component (i.e. generating information), a decision-making component (i.e. using information), and the transfer of information.

2.4.1 The relationship between tiered assessments and PPPPs

A distinction should be drawn between tiered assessments *per se* (ranging from strategic level assessments to project level assessments), and the policies, plans, programmes and projects that flow from, and are informed by these assessments. In Arts *et al.* (2005), it is stated that "[t]*he underlying idea is that, first a SEA is carried out for a plan or program then an EIA for the project that is developed to implement the policies of the plan/program. The plan/program and the SEA set the framework for the project and the EIA" (*Arts *et al.*, 2005:3)*.*

There is a huge diversity of SEA practices and flexibility application thereof in practice (Fischer & González, 2021; Retief *et al*., 2021; Bond *et al.,* 2022). While this diversity in application

contributes to the success thereof, it does, however, result in the link between a SEA and PPP not always being clear. For example, Retief (2007) and Retief *et al*. (2008) reported instances where SEAs are used more as a planning instrument to identify opportunities and constraints or understand the environment rather than the PPP. Retief *et al*. (2021) also reported that a significant percentage of "…. *SEAs were not integrated or linked to PPP processes. In other words, they could not be understood as explicit policy, plan or programme linked SEAs. In these SEA cases, the boundary between planning and environmental assessment became blurred and SEAs filled a void between policy and project level requirements*" Retief *et al*., 2021:355). In such instances, the information contained in SEAs also becomes an output. Fischer and González (2021) note that "*SEA is usually legislated as a decision support procedure for plans and programmes, and, in some cases, policies and strategies; however, it is also a framework which goes beyond a procedure, embracing different decision tiers in which environmental impacts, as well as particular issues and alternatives are systematically addressed at the levels of strategies and PPPs*" (Fischer & González, 2021:425). In such instances, strategic-level assessments *per se* can provide information to influence or guide lower levels of EA and subsequent decision-making processes, especially at the project EIA level. Ideally, EAs should provide both information, have a clear linkage to PPP deliverables, and provide clear decision-making guidance for subsequent tiered assessments. Retief *et al.* (2008) and Bina *et al.* (2011) specifically argued that PPPs should have a statutory decision-making effect, as the provision of information *per se* does not automatically translate into better decision-making. For strategic-level assessments to be effective, they must have a meaningful effect on project-level assessment processes "….*to use the strategic level findings as authoritative guidance for project planning and assessment*" (Gibson *et al.,* 2015:259).

A useful theoretical benchmark is a linear relationship between PPPs and the EAs informing them. It represents the ideal to aim for, where a SEA resulted in tiered PPPs, with strategic policies informing plans and programmes, followed by projects. However, as already noted, in practice, the ideal of sequential relationships across multiple scales over time is not always clear (Noble, 2001; Arts *et al*., 2005; 2011; Kalle & Arts, 2013; Thérivel & González, 2021). Arts *et al*. (2011) highlighted that "[t]*iering is not easily found in practice, often absent or lacking at certain planning levels. The relationships between planning levels are not simply downwards but far more complex*" (Arts *et al*., 2011:431). The relationship between PPPPs and the SEAs that inform them is better explained by the "splash effect" as proposed by Partidário and Arts (2005), where an SEA or a PPP may result in reactions in any direction (Figure 2-2).

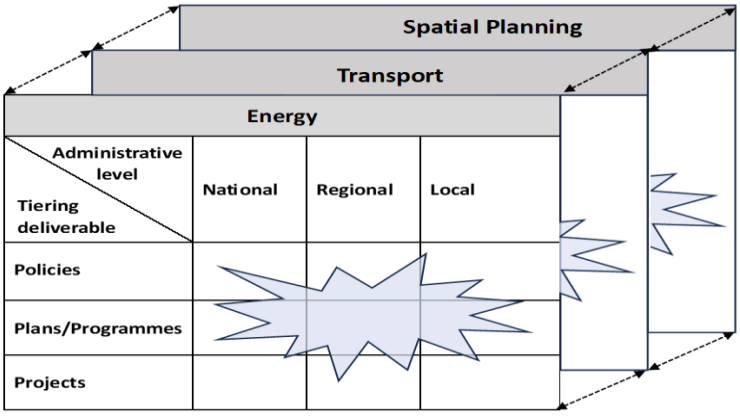

Figure 2-2: The "splash effect of SEAs and PPPs (based on Partidário & Arts, 2005)

In terms of the “splash effect”, EIAs are not always preceded by SEAs, and PPPs do not always precede projects. In practice, a specific SEA or PPP can potentially have an effect across different PPPs, different administrative levels and across sectors, especially as assessment, planning and decision-making across sectors and administrative spheres do not function in isolation but are interconnected (Partidário & Arts, 2005; Arts & Fischer, forthcoming).

2.4.2 Different forms of tiering and influence between tiers

Although the existence of logical, sequential, tiered EAs in practice can be disputed, there is general agreement that different levels of assessment should be linked or aligned with each other (Arts *et al.*, 2005; Partidário & Arts, 2005; Arts *et al.*, 2011; Gibson *et al.*, 2015; Thérivel & González, 2021; Arts & Fischer, forthcoming).

Gibson *et al.* (2015) stated that “[t]*iers in assessment processes recognize that the design, approval and implementation of most undertakings that have important socio-economic and ecological implications are influenced by decisions at different levels, ranging from broad policy making to regulatory licensing, and that much can be gained by linking the decision making at all of these levels*” (Gibson *et al.,* 2015: 259). Arts *et al.* (2005) noted that “*many forms of tiering might be distinguished. However, it can be said that the dimension of time is essential to tiering; the idea is that environmental assessments at whatever level should be attuned to the preceding assessments*” (Arts *et al.*, 2005:2). Regardless of practical challenges, tiering provides a benchmark against which practices can be measured to guide

best practice in aligning planning, assessment and decision-making at all levels (Partidário & Arts, 2005; Arts et al., 2011; Gibson *et al.*, 2015; Thérivel & González, 2021).

Tiering can, therefore, be applied to various areas of implementation (Figure 2-3), such as administrative, planning, geographical, or sectoral dimensions (Partidário & Arts, 2005; Arts *et al*., 2005; Thérivel & González, 2021):

- Vertical tiering between a hierarchy of levels:
  - Administrative jurisdictions and government spheres or levels: international, national, provincial (sub-national) and local (municipal) spheres of government.
  - Planning levels represented by cascading levels of policies, plans, programmes, and projects (PPPPs).
  - Geographical spaces, cascaded from global, continental, national, and regional down to local areas.
- Horizontal tiering at the same (administrative) level:
  - Tiering across sectors, for example, agriculture, human settlements, transport, water management, waste management, conservation, mining, etc.
  - Horizontal tiering also involves cooperation between different organs of the state (state entities) operating at the same administrative level, for example, the coordination of land use planning across adjacent local authorities.
- Diagonal tiering:
  - Diagonal tiering represents a combination of vertical and horizontal tiering, where a strategic tier in a different sector can influence other tiers in another sector; for example, the strategic land use plan of a local authority or a regional transport plan can influence a project-level EIA.

  Figure 2-3 depicts the different hypothetical vertical, horizontal and diagonal tiering arrangements. Vertical tiering represents tiering within a sector, horizontal tiering represents the interaction between different sectors at the same tiering level, and diagonal tiering represents a specific tiering level in one sector influencing different tiering levels in other sectors.

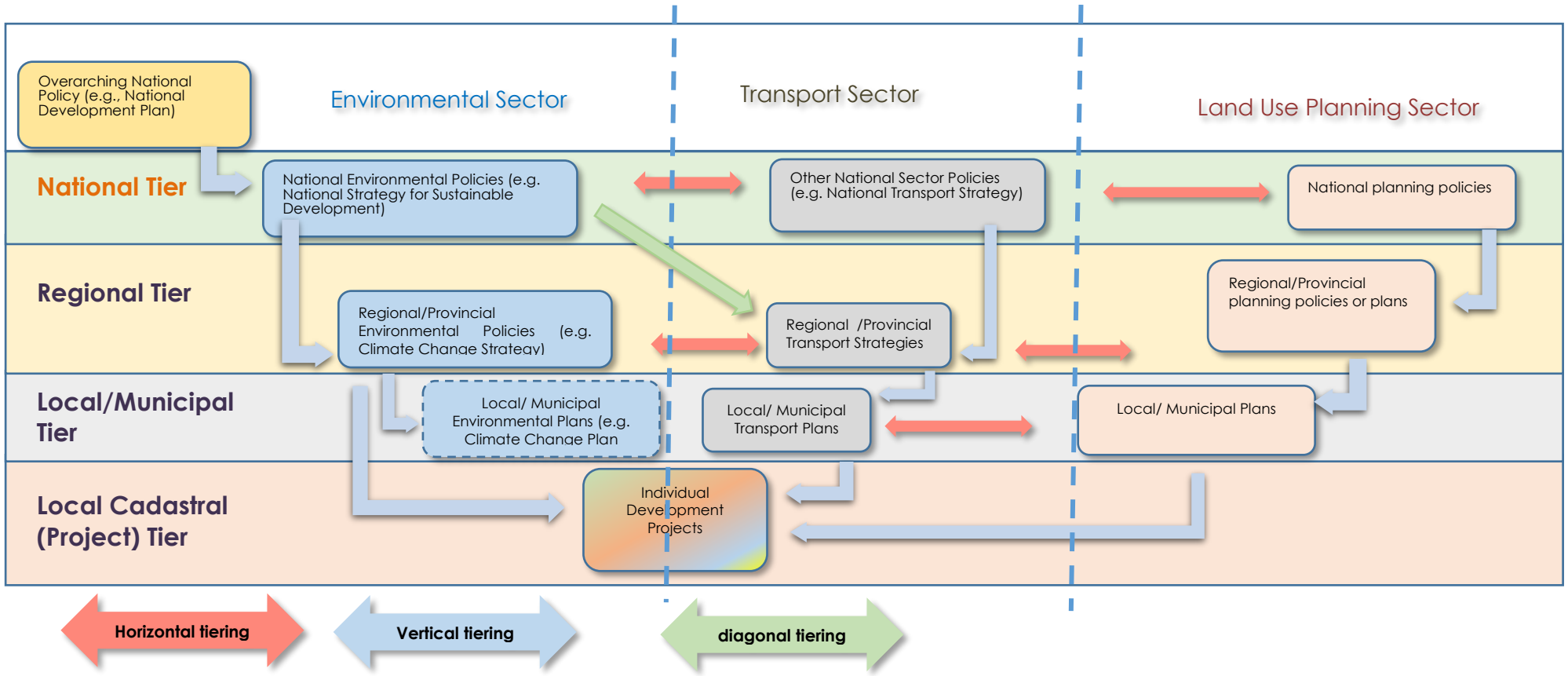

Figure 2-3 - Vertical, horizontal, and diagonal tiering (based on Arts et al., 2005)

2.5 Influencing factors in tiering

Several factors can influence the effective implementation of tiering in practice (Arts *et al*., 2005; Partidário & Arts, 2005; Bond *et al*., 2022; Arts *et al.*, 2011; Thérivel & González, 2021; Arts & Fischer, forthcoming). These factors can enable or inhibit tiering. It must be noted that although these influencing factors are discussed separately below, they are interrelated.

2.5.1 Tiering captured in legislation

The extent to which the requirement for tiering *per se* is captured in EA legislation influences its implementation in practice (Thérivel & González, 2021) and is consistent with Bond *et al*. (2022), who also found that legislation is a contextual factor that influences the effectiveness of EA. Although the concept of tiering in EA is increasingly being accepted (Arts & Fischer, forthcoming), there are only a few examples where tiering is explicitly provided for in legislation by setting the requirement for different levels of EA and the relationship between tiers (Thérivel & González, 2021). In most countries where EAs were formalised into law, they include enabling provisions for assessment instruments at different tiers, especially SEAs and EIAs (Hanna, 2022; Fonseca, 2022; Arts & Fischer, forthcoming). However, in most instances, legislation is silent on tiering itself. Thérivel and González (2021) reported two clear examples of tiering being captured in legislation, namely in the United States (CEQ, 2020) and the European Union (European Union, 2001), with the former being the most explicit. The primary focus of including tiering requirements in legislation is to improve the efficiency of regulatory processes.

In the United States, the requirement for tiering has been incorporated into the 'Final Rule Modernising its NEPA Implementing Regulations' (CEQ, 2020):

> *"§1508.1 Definitions: … Tiering refers to the coverage of general matters in broader environmental impact statements or environmental assessments (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basin-wide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared. §1500.4 Reducing paperwork: Agencies shall reduce excessive paperwork by: (…) Using programmatic, policy, or plan environmental impact statements and tiering from statements of broad scope to those of narrower scope, to eliminate repetitive discussions of the same issues.*

§ 1501.11 Tiering:

(a) Agencies should tier their environmental impact statements and environmental assessments when it would eliminate repetitive discussions of the same issues, focus on the actual issues ripe for decision, and exclude from consideration issues already decided or not yet ripe at each level of environmental review. Tiering may also be appropriate for different stages of actions.

(b) When an agency has prepared an environmental impact statement or environmental assessment for a program or policy and then prepares a subsequent statement or assessment on an action included within the entire program or policy (such as a project- or site-specific action), the tiered document needs only to summarize and incorporate by reference the issues discussed in the broader document. The tiered document shall concentrate on the issues specific to the subsequent action. The tiered document shall state where the earlier document is available.

(c) Tiering is appropriate when the sequence from an environmental impact statement or environmental assessment is:

(1) From a programmatic, plan, or policy environmental impact statement or environmental assessment to a program, plan, or policy statement or assessment of lesser or narrower scope or a site-specific statement or assessment.

(2) From an environmental impact statement or environmental assessment on a specific action at an early stage (such as need and site selection) to a supplement (which is preferred) or a subsequent statement or assessment at a later stage (such as environmental mitigation). Tiering in such cases is appropriate when it helps the lead agency to focus on the issues that are ripe for decision and exclude from consideration issues already decided or not yet ripe."

The European Union SEA Directive (European Union, 2001) is another example where tiering is provided insofar as the requirement for EA of plans and programmes is set. Article 1 of the SEA Directive states that:

"*The objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an EA is carried out of certain plans and programmes which are likely to have significant effects on the environment*."

A review report on the effectiveness of the EU SEA Directive recommended that *"…..more comprehensive guidance materials could be usefully developed for …..clarification of tiering and the relationship between different levels of assessment*" (European Union, 2016:212).

EIAs are well catered for in law but less so for SEAs (Fonseca, 2022; Hanna, 2022; Morrison-Saunders, 2023). However, tiering requirements are largely missing (Thérivel & González, 2021). The capturing of EAs as a legal mandate has resulted in the allocation of institutional resources to implement these mandates (Kidd *et al.*, 2018; Monteiro *et al*., 2018; Fonseca, 2022; Hanna, 2022; Morrison-Saunders, 2023). It follows, therefore, that the capturing of tiering in legislation will also influence the allocation of institutional resources towards its implementation. The capturing of tiering in legislation can potentially also address the disconnect and the time lag often experienced between SEAs and EIAs (Thérivel & González, 2021)

Based on the above, the extent to which tiering is implemented is influenced by how the requirement for tiering is captured (or not) in legislation. In general, whilst EAs at different tiers are captured in legislation, the requirement for establishing tiered PPPs and EA systems is not.

2.5.2 The sequential nature of tiered assessments

The (theoretical) sequential nature of PPPPs and their associated EAs is depicted in Figures 2-2 and 2-3 as a hierarchy of policies, plans, programmes and projects that are informed by sequential/cascading levels of assessments. In Arts *et al.* (2005) it is stated that "[a]*ccording to the rational planning background of EIA, also the concepts of SEA and tiering seem to be grounded in rational planning approach in which hierarchic mechanisms and clear means-ends relations are assumed. The underlying idea is that, first a SEA is carried out for a plan or program then an EIA for the project that is developed to implement the policies of the plan/program. The plan/program and the SEA set the framework for the project and the EIA*" (Arts *et al*., 2005:3). Fischer (2005), in responding to criticism against rational tiered EAs and planning, highlighted that tiering is not only a theoretical concept, and illustrated its practical value through several examples where tiering has been applied in practice.

However, the sequential timing of tiered assessment is not always well aligned in practice, meaning that SEAs do not always exist at the time when projects are planned (Arts *et al.,* 2005; Arts *et al.,* 2011; Fischer & González, 2021). At the project level, numerous examples have been cited where project-level EIAs preceded strategic-level assessments (Nooteboom, 2000; Fischer, 2005; Arts *et al.*, 2011; Fischer *et al*., 2019; Thérivel & González, 2021). For example, the EIA for renewable energy development in South Africa preceded the development of a SEA to inform

the roll-out of a renewable energy programme (Cape *et al*., 2018; Fischer *et al.*, 2019). Thérivel and González (2021) acknowledged the time lag between SEA and EIA and recommended that a legal mandate for tiering can overcome the silo approaches often followed to better enable tiering to play its intended guiding role.

At a policy level, the timing disjunct between research information and policy formulation is also highlighted by Von der Heyden *et al.* (2016) as one of the challenges that hamper evidence-based decision-making. At both SEA and EIA levels, the timing disjunct often leads to a strategic contextual void that contributes to why EIAs are often regarded as ineffective and not delivering sustainable development outcomes (Nooteboom, 2000; Arts *et al.*, 2011; Thérivel & González, 2021; Bond *et al*., 2022).

The lack of coordination between PPPPs and their associated tiered assessments will always remain a challenge, especially if the requirement for establishing tiering systems is not captured in law. However, this challenge of uncoordinated tiering does not negate the value of PPPPs and tiered assessments to still provide important linkages to providing cascading information on goals/ objectives, alternatives, scoping of issues, mitigation actions, and follow-up (Fischer & González, 2021) that apply across different spheres (administrative levels) and different sectors, beyond a specific time and space (Arts & Partidário, 2005; Arts *et al*., 2005; Arts *et al*., 2011; Fischer & González, 2021; Bond *et al*., 2022).

2.5.3 Different conceptualisation of PPPs in practice

Different settings (between different countries, sectors, and legislative frameworks) influence how PPPPs are developed, and tiered assessments take place (Dalal-Clayton, 2005; Partidário & Arts, 2005; Arts *et al*., 2011; Monteiro *et al*., 2018; Fischer & González, 2021; Bond *et al*., 2022). Although the notion of PPPPs has been well-established in theory, it does not have the same meaning and may not be defined and catered for in the same manner in different countries or sectors (Dalal-Clayton, 2005; Bina, 2008; Arts *et al*., 2011; Silva *et al*., 2014; Monteiro *et al*., 2018; Thérivel & González, 2021; Bond *et al*., 2022). The requirements to compile PPPPs, the purpose thereof, when, and how these have to be developed are not always well-defined or similarly catered for in legislation (Retief *et al.*, 2008; Dalal-Clayton, 2005; Hanna, 2022; Fonseca, 2022; Bond *et al*., 2022; Arts & Fischer, forthcoming). In certain instances, the full scope of PPPPs may not be implemented or may be applied differently in different sectors (Arts *et al*., 2011; Fischer & González, 2021). In addition, the “splash effect”, as described by Partidário and Arts (2005), is also of value in understanding the non-linear nature of tiering in practice and how specific strategic initiatives may have different influences on how vertical, horizontal, and diagonal tiering on PPPs are approached and implemented in a specific institutional context.

From a tiering perspective, the different conceptualisations of PPPPs influence how tiering in EAs is implemented.

2.5.4 Different operating environments for PPPPs

Several contextual factors influence different dimensions of EA tiering, how it is perceived, institutionalised and implemented in practice, and its effectiveness. These factors include geo-politics, legislation, governance contexts, institutional capacities, organisational structures, governance cultures, and formal and informal networks (Nooteboom, 2000 and 2007; Partidário & Arts, 2005; Arts *et al*., 2011; Monteiro *et al*., 2018; Fischer & González, 2021; Bond *et al*., 2022; Hanna, 2022; Fonseca, 2022; Arts & Fischer, forthcoming). The development of PPPPs in different governance contexts and institutional settings also creates diverse operating environments within which sectors approach tiering differently (Monteiro *et al*., 2018; Fischer & González, 2021; Bond *et al*., 2022; Hanna, 2022; Fonseca, 2022) - for example, in the renewable energy sector (Cape *et al*., 2018; Fischer *et al*., 2019), the transport sector (Fischer, 2006; Faith-ell & Fischer, 2021) or the land use planning sector (Jones *et al*., 2005; Retief *et al*., 2021). In the renewable energy sector in South Africa, political support created an operating environment in which resources were made available to conduct an SEA and develop new legislation (Fischer *et al*., 2019). Monteiro *et al*. (2018) found that differences in governance contexts in countries (as illustrated by values, cultures, traditions, relationships and power dynamics) influence how SEAs are institutionalised and implemented. Therefore, EA systems and their institutionalisation are not context-free but context-influenced.

Legislation on how 'environment' and 'sustainability' are defined and how EAs are catered for also creates different operating conditions that influence how tiered EAs are implemented (*Bond et al*., 2022; Hanna, 2022; Fonseca, 2022). In addition, differentiated mandates are allocated to different spheres of government - i.e., different administrative levels (Partidário & Arts, 2005; Arts *et al*., 2011; Kidd *et al*., 2018; Monteiro *et al*., 2018; Bond *et al*., 2022). These different mandates also relate to the application of the subsidiarity principle in how decision-making mandates are devolved to the most appropriate level of government (MacCormick, 1997; Arts *et al*., 2011; Murcott & Van der Westhuizen, 2015; Kidd *et al*., 2018). Arts *et al*. (2011) believe that the subsidiarity principle influences tiering by determining the extent to which strategic tiered outputs (such as policies) can prescribe or merely guide decision-making at subsequent tiers. Therefore, from a tiering perspective, the differentiated distribution of functional and legal mandates and decision-making competencies across spheres and sectors influences how tiering is implemented.

2.5.5 Currency of environmental assessment information

For tiering to be relevant, there needs to be a flow of information between tiers (Arts *et al*., 2011; Thérivel & González, 2021). It is assumed that such information remains relevant and current (up-to-date). However, in practice, this is not the case, and information is often outdated (Nooteboom, 2000; Arts *et al*., 2011; Thérivel & González, 2021). Although the relevancy and currency of EA information are context-specific, the changing, complex environments within which such assessments are conducted often result in its information having a limited period of relevancy (Arts *et al*., 2011; Thérivel & González, 2021; Bond *et al*., 2022).

At a policy level, the availability of current information is often a challenge for evidence-based policy formulation (Paine Cronin & Sadan, 2015; Von der Heyden *et al.,* 2016; OECD, 2020a; 2020b). In EAs, where SEA-EIA tiering links are weak, it is often due to the contextual information provided by SEAs being outdated at the time when an EIA is conducted (Thérivel & González, 2021; Bond *et al*., 2022). The currency of information in EAs, especially at a strategic level, is also linked to follow-up, or the lack thereof (Morrison-Saunders & Arts, 2004; Partidário & Arts, 2005; Morrison-Saunders *et al*., 2021; Arts & Morrison-Saunders, 2022; González, 2022). Both the relevancy and the currency of information should be addressed in the follow-up. Thérivel and González (2021), acknowledging the reality of time lags between SEA and EIA, recommended that the establishment of mandatory tiering in legislation can overcome the silo approaches often followed and better enable tiering to play a guiding role.

Various contextual factors influence the currency of information, some of which have been highlighted above (Bond *et al*., 2022), also include legislative contexts (e.g., how tiering and follow-up are catered for in law), the state of the economy (i.e. influencing budget allocations towards maintaining the currency of information), and political will (e.g., to prioritise follow-up) (Bond *et al*., 2022; González, 2022).

2.5.6 Time and financial constraints

The allocation of time and financial resources towards EA depends on prioritising them within institutions. EIAs are legally required in most countries (Morrison-Saunders & Retief, 2012; Lyhne *et al.,* 2016; Yang, 2019; Bond *et al*., 2022; Hanna, 2022; Fonseca, 2022), resulting in the authorities responsible for the administration thereof, having to allocate institutional resources towards the implementation of this mandatory function (Cilliers *et al*., 2020). SEAs are not as

extensively legislated for (Hanna, 2022; Fonseca, 2022), and their use is dependent on political will, which is influenced by SEA's transactional effectiveness where the benefit or value thereof outweighs its cost (Thérivel & González, 2021).

Bond *et al*. (2022) reflected on several contextual factors that could inhibit or facilitate the effectiveness of EA and, by implication, tiering, including legislative frameworks, organisational structure, and allocation of institutional resources for the execution of legal mandates. The allocation of adequate institutional resources, meaning human, time and financial resources towards EAs (Retief & Chabalala, 2009; McCullough, 2017; Cilliers *et al*., 2020; Fonseca, 2022) is important for the effectiveness of EAs and tiering in EA. An example of political will as a contextual influence on tiering is using SEAs in South Africa to improve regulatory efficiency in the renewable energy sector (Cape *et al*., 2018; Retief *et al.*, 2021). Although SEA is a voluntary instrument in South Africa (i.e. there is no legal requirement to conduct SEAs), resources were allocated toward conducting an SEA for renewable energy and developing revised regulatory EIA procedures to streamline the implementation of renewable energy developments (Cape *et al*., 2018; Fischer *et al*., 2019; Retief *et al.*, 2021).

2.5.7 The influence of power dynamics

Power dynamics are inherent in all relationships within social systems (Cilliers, 2001), including the relationships at play in EA at all tiers (Nooteboom, 2007; Elling, 2009; Cashmore & Alexsson, 2013; Hansen *et al*., 2013; Bond *et al.,* 2014). Cashmore and Richardson (2013) stated that "*environmental assessment [EA] is inescapable, and fundamentally, concerned with power*" (Cashmore & Richardson, 2013:2), especially when considering the complexity of socio-economic and socio-ecological systems and the contested concept of sustainability itself, as the operating arena for EA and formulation of PPPs (Cilliers, 2001; Cilliers, 2008; Nooteboom, 2007; Audouin & Hattingh, 2008; Audouin & De Wet, 2012; González Del Campoa *et al.*, 2020).

As an influencing factor in tiering, the power dynamics between stakeholders affect how tiering in EA is implemented. Power dynamics emerge when stakeholders influence the flow of information, when and how alternatives are considered, what information is considered relevant (i.e., the scoping of issues), the determination of significance rating of impacts, as well as voicing different expectations of assessment process outcomes (Audouin & Hattingh, 2008; Hansen *et al*., 2013; Audouin & De Wet, 2012; Cape *et al*., 2018). EAs, and by implication tiering, operate in a world of diverging (and often contested) rationalities, world views, and value expectations that influence EA differently through relationships and its inherent power dynamics (Audouin & Hattingh, 2008;

Elling, 2009; Audouin & De Wet, 2012; Hansen *et al*., 2013). According to Cashmore and Alexsson (2013), the effectiveness of EAs is influenced by power dynamics. In terms of sustainability, Bond *et al.* (2014) highlighted that the search for "*sustainable development ……can provide opportunities for powerful development interests to push forward their own agendas*…" (Bond *et al.,* 2014:48).

Without going into the normative debate on the good or bad thereof, power dynamics can be seen in all relationships involved in EA at all tiers. They can either enable or constrain the effectiveness thereof (Cashmore & Richardson, 2013).

Beyond the brief reflection on the presence of power as a relational characteristic that is inherent in and influences all tiers of EAs, a more expanded discussion of the analytical and normative aspects of power is provided in paragraph 2.8.

2.6 Follow-up and tiering

Follow-up in EIA and SEA is defined by Arts and Morrison-Saunders (2022) as follows:

"Follow-up is a fundamental component of IA and essential if outcomes of a plan or project subject to IA are to be known. Thus, a commitment to follow-up should be present for every IA whether this is through inclusion in legislative provisions for IA or within individual approval decisions. This includes appropriate resourcing for all IA follow-up undertakings throughout the life-cycle of development" (Arts & Morrison-Saunders, 2022:1).

Follow-up plays an important role in monitoring if the cascading flow of information between tiers is effective, especially between SEAs and EIA (Morrison-Saunders, 2004; Morrison-Saunders *et al*., 2007; Arts *et al*., 2011; Morrison-Saunders *et al*., 2021; Arts & Morrison-Saunders, 2022; González, 2022).

The primary aim of follow-up in EA is to determine if the outcomes of the assessments of a relevant policy, plan, programme, or project, with the purpose of ongoing improvement/management thereof, inclusive of the impacts thereof (Morrison-Saunders & Arts, 2004; Morrison-Saunders *et al*., 2007; Arts *et al*., 2011; Morrison-Saunders *et al*., 2021; Arts & Morrison-Saunders, 2022; González, 2022). According to these authors, follow-up in EA includes several components:

- Monitoring and reporting, involving the collection of data to be used in evaluating the performance of the relevant PPPP.

- The evaluation of the monitoring data against objectives, performance standards/criteria, or anticipated impacts/outcomes flowing from the EA.
- The implementation of management actions or interventions in response to the evaluation results to ensure continuous improvement of performance and ongoing management of impacts.
- The communication of the monitoring results and actions and interventions flowing from it to stakeholders contributes to knowledge sharing.
- The governance requirements, i.e., the processes and arrangements to enable the implementation of EA follow-up activities.

For follow-up to be effective, the above must be supported by relevant institutional arrangements such as legislative provisions, institutional processes, and resource allocations required for the implementation of follow-up in EAs (Partidário & Fischer, 2004; Arts *et al*., 2011; Arts & Morrison-Saunders, 2022; González, 2022).

From a tiering perspective, follow-up of the previous EA may provide relevant input information for the (scoping of) subsequent EA tier (Arts *et al.*, 2011; Morrison-Saunders *et al*., 2021; Arts & Fischer, forthcoming). In the 'IA Follow-up International Best Practice Principles of IAIA' (Arts & Morrison-Saunders, 2022), this is laid down in Principle 13: "[i]*nform and be informed by follow-up for other relevant activities at different levels of decision-making…..IA follow-up should facilitate the transfer of information between different levels of IA application – tiering the various strategic and operational planning stages of policies, plans, programs and projects*" (Arts and Morrison-Saunders, 2022:2). Some of the value contributions[6] that can be achieved through follow-up, is informing future EAs (Morrison-Saunders & Arts, 2004; Marshall & Arts, 2005; Arts & Morrison-Saunders, 2022; González, 2022), including:

- Creating awareness about and improving the transference of identified objectives in policies, plans and programmes. This transference is important to facilitate the continuation of strategic direction between tiers and could contribute significantly to the cascading of sustainability objectives between tiers and administrative levels.
- Improving the transfer of knowledge between tiers and knowledge sharing between stakeholders. This can include information on cumulative impacts, alternatives, and mitigation measures, supporting the continuous learning and improvement of future EA practices.
- Improving the transfer of responsibilities within government institutions and between stakeholders, related to both follow-up *per se* and tiering requirements.

[6] Also included as some of the principles underpinning effective follow-up practices (Morrison-Saunders & Arts, 2004; Morrison-Saunders et al., 2007; Arts & Morrison-Saunders, 2022)

- The management of risks and liabilities can be improved through follow-up results, providing more clarity on risks associated with information gaps and uncertainties, as well as risks associated with implementation failures. These risks could also include the identification of emerging risks and socio-ecological sensitivities and vulnerabilities.

Arts and Morrison-Saunders (2022) highlight an additional objective of EA follow-up to be "…*to learn about IA* [impact assessment] *performance, and to enhance efficacy and legitimacy of decision-making and impact assessment for projects or plans, including future IA applications for other development assessment of projects or plans in order to inform ongoing management of that development*." (Arts & Morrison-Saunders, 2022:1). This objective speaks more to the performance of EA systems rather than specific policies, plans, programmes or projects (Morrison-Sanders & Arts, 2004; Morrison *et al*., 2007; Arts & Morrison-Saunders, 2022) and is a crucial component highlighting the strategic importance of EA follow-up in improving environmental governance.

Follow-up in project-level EIA is well catered for as it is inherently linked to monitoring compliance with regulatory decisions issued, either through self-monitoring by proponents or compliance monitoring by authorities against regulatory decisions issued (Morrison-Saunders *et al*., 2007; Kidd *et al.*, 2018). As such, EIA follow-up is often legislated as part of compliance monitoring and enforcement of EIA-level regulatory decision-making, as well as third-party verification and self-monitoring (Kidd *et al*., 2018). However, this is (often) primarily focused on legal compliance and less on substantive performance (Sadler, 1996; Kolhoff *et al*., 2016) - i.e., improved performance towards achieving sustainability outcomes. In a recent review study on the effectiveness of the EIA system in South Africa (DPME/DEA, 2019), a clear finding was that the lack of sustainability objectives makes it impossible to evaluate the substantive value of EIAs towards achieving sustainability. However, to become sustainability-led, tiering is required to provide a broader perspective beyond project-level EIAs (Arts *et al*., 2011) that can, through follow-up, facilitate a move away from mere regulatory compliance towards measuring performance in achieving sustainability outcomes (González, 2022).

Follow-up and monitoring[7] the implementation of SEAs are still weaknesses because SEAs and SEA follow-up are usually not legislated for. In addition, follow-up at the strategic level is more complex compared to project-level EIA follow-up. This complexity includes long timeframes for the outcomes of SEAs to be realised, the strategic and often the multi-directional implications of

[7] In literature the reference is often made to monitoring rather than follow-up.

SEA outcomes, and a lack of experience and methods for SEA follow-up (Partidário & Arts, 2005; Arts *et al*., 2011; Thérivel & González, 2021; González, 2022).

2.7 The role of rationality in tiered environmental assessment and decision-making

Arts *et al*. (2005) noted that – like EIA – "……*the concepts of SEA and tiering seem to be grounded in rational planning approach in which hierarchic mechanisms and clear means-ends relations are assumed*". Inherent in this statement is the notion that rationality is linked to achieving predetermined outcomes or objectives. There is an increased realisation that effective governance is a prerequisite for addressing environmental challenges (Wingqvist *et al*., 2012; Strydom, 2018; OECD, 2020), and EA is an integral component (Yang, 2019). Within this context, governments are increasingly focusing on accountable, evidence-based decision-making (Gisselquist, 2014; Paine Cronin & Sadan, 2015; Parkhurst, 2017; OECD, 2020a; OECD, 2020b) and just administration (Retief *et al*., 2019; Alberts *et al*., 2022).

In EA, the call for effective decision-making has resulted in an increased focus on the effectiveness and efficiency of EA instruments at all tiers (Cashmore *et al.,* 2010; Fischer *et al*., 2023; Thérivel & González, 2020; Alberts *et al.,* 2023). Through the years, most of the attention has been focused on technical-rational information as the foundation of evidence-based decision-making at the project level (Bond *et al.*, 2016) and a strategic level (Cashmore *et al.,* 2010; Owens *et al.,* 2006; Von der Heyden *et al.,* 2016; Pakhurst, 2017; OECD, 2020a; 2020b; Kano & Hayashi, 2021).

In general, therefore, EAs have been associated primarily with the supply of scientific/technical information – equated to the technical-rational approach of EAs (Arts *et al.*, 2005; Arts *et al.*, 2011; Gibson *et al.*, 2015; Bond *et al.*, 2016). These authors emphasised the aim of tiering in PPPPs and EAs to be a systematic and logical (technical-rational) approach to decision-making, allowing for issues to be addressed at the right time and level and preventing foreclosure of issues. Arts *et al*. (2005) noted that "……*the concepts of SEA and tiering seem to be grounded in rational planning approach in which hierarchic mechanisms and clear means-ends relations are assumed"*. Inherent in these statements is the notion that rationality is linked to achieving predetermined outcomes or objectives associated with effective environmental governance.

Bond *et al.* (2016) found that *"…. EA does function as originally intended – to apply instrumental rationality to decision making. However, the inability of the technical-rational model to deal with the more contested goals of sustainable development has led to calls for deliberative rationality to be applied. The application of game theory has suggested that EA in its current form is not*

designed for deliberation and will continue to suffer from legitimacy problems" (Bond *et al*., 2016:193). This statement reflects the ongoing debate on rationality and the strong voice emerging on the role of communicative (or deliberative) rationality in EA and decision-making (Fischer, 2005; Elling, 2009; Audouin & De Wet, 2012; Bond *et al*., 2016; Elling, 2016). Elling (2009), in debating the relationship between rationality and effectiveness of EA, acknowledged that SEAs have often been associated with the technical-rational side of planning. However, he argued for EA processes to be geared towards reaching a mutual understanding between stakeholders. In doing so, Elling challenged the approach where the effectiveness (or efficiency) of EAs is characterised by being a goal-oriented (or a teleological) process. Such goals may refer to time and cost efficiency or substantive goals such as addressing environmental concerns based on achieving specific scientific/technical targets. As an alternative, Elling (2009; 2016) called for a more consensus-seeking approach - i.e., communicative rationality, where different views of stakeholders must be 'unmasked in public debate' to be transparent and known to other stakeholders. However, according to Audouin and De Wet (2012), the dilemma is that "*society's emphasis on instrumental rationality has eroded our ability to undertake effective value-deliberation. This erosion is particularly problematic if environmental assessment is to enable the achievement of sustainability goals, as contextually defined*" (Audouin & De Wet, 2012:265).

The call for (just) focusing on a more communicative or deliberative approach to rationality in EA and decision-making is not shared by all. Fischer (2005) called for rational, evidence-based decision-making, arguing that the nature of environmental challenges the world faces[8] requires a strong scientific response. In discussing the value of SEA as part of a rational tiering system, Fischer (2005) noted that the "*current global environmental problems need structured and systematic approaches to decision making and assessment; leaving decision making entirely to local communities in communicative processes may mean environmental sustainability problems are not effectively considered in planning……. It has lately been argued that decision making for sustainable development means communicative, local community driven planning should be pursued, because local communities need to determine their own fate and local solutions are to be found….. it is potentially at odds with a substantive, outcome oriented understanding, at least with regard to global environmental problems*" (Fischer, 2005:4 -5). Certainly, if one considers the magnitude of the world's environmental challenges as reflected in the global risks identified by the World Economic Forum (WEF, 2023), it leaves little room, or what McClaren (2003) referred to as 'environmental space',[9] to deviate from the interventions based on scientific evidence.

[8] The World Economic Forum's Global Risk Report for 2023 risks (WEF 2023) lists 6 out of the top 10 risks for the next 10 years as environmental risks.

[9] The concept of environmental space is presented as a "rights-based" approach to sustainability that allocates an equitable share of an environmental resource available within the limits earth's capacity (i.e., the "environmental space" of a resource per capita). This considers sustainable consumption of renewable resources, the use of non-renewable

However, as Gardiner (2006) illustrates, societal/political debates and decision-making often deviate from what science informs us based on the consideration of a limited selection of information. This limited (and selective) consideration of information is also consistent with the notion of 'bounded rationality' presented by Nilsson and Dalkmann (2001). They noted, following Simon (1957), that "…. *a rational decision making process takes place within the boundaries of the limited capability of human beings to be entirely value free and objective. According to Simon, since individuals' decisions are limited in their rationality, full rationality can never be achieved. Rationality is also constrained by institutional norms such as laws, policies and codes of conduct. Bounded rationality also embraces the limitations of information processing, perception, memory and judgement*" (Nilsson & Dalkmann, 2001:313).

A level of complexity is added to the debate on rationality in EA if one considers that stakeholders perceive rationality differently in a social context, compared to a scientific context – especially in complex socio-ecological and socio-economic systems where stakeholders have diverse world views (Audouin & Hattingh, 2008; Cilliers, 2008). In the science world, rationality is predominantly linked to the successful achievement of context-specific, pre-determined outcomes or objectives, in comparison to the social world where success is measured in terms of reaching mutually agreed outcomes, based on communicative reasoning[10] – based on Wiklund (2005) and Elling (2009; 2016), as an interpretation of Habernas's view of rationality (Habarnas, 1994). Perhaps this complexity of relationships is also linked to the notion that, at a strategic level, envisaged futures are more informed by value-based opinions rather than empirical facts and scientific information, whereas project-level assessments focus more on empirical technical-scientific evidence (Audouin & De Wet, 2012). Put differently, there is an increased focus on technical-scientific rationality as one moves from policies, plans, programmes to project-level assessment/. This continuum is consistent with Nilsson and Dalkmann (2001), who highlighted that environmental impacts are generally less predictable at strategic levels than at the project level, and that the complexity increases in terms of the number of actors involved in the decision. Also, as highlighted above, EAs operate in a world of multiple and contested rationalities (Richardson, 2005; Audouin & Hattingh, 2008; Morgan, 2012) that are influenced by various contextual factors (Nilsson & Dalkmann, 2001; Bond *et al*., 2022) and ethical considerations (Elling, 2009; Audouin & Hattingh, 2008) and the complexity of 'sustainability' (Cilliers, 2008; Audouin & De Wet, 2012; Pope & Morrison-Saunders, 2013; Bond *et al*., 2016). It is also important that EA practitioners and decision-makers acknowledge that EAs operate within this complex world, as well as their

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at rates equal to their replacement by renewable alternatives, as well as implications of outputs and use (McClaren, 2003).

[10] Habarmas (1994) broadly refers to "*systems" that refers to economic, science and other systems, and "lifeworld*" as the societal world that exists outside of these systems.

role in managing this diversity, inclusive of contested rationalities, as an inherent part of EA and decision-making processes (Richardson, 2005; Morgan, 2012; Bond *et al*., 2016).

The above discussion points to the value that tiering in EA could contribute, specifically where the formulation of a strategic context in a consultative manner, to:

- overcome the challenges of integrating scientific/technical information into value conversations (Audouin & De Wet, 2012) – i.e., fostering relationships for interaction and knowledge brokerage takes time;
- allow time for interaction and deliberation as a way of dealing with (and allowing outcomes to emerge from) multiple rationalities that are inherent in all assessment processes (Morgan, 2012; Audouin & De Wet, 2012; Bond *et al*., 2016); and
- address some of the challenges of 'bounded rationality' (Nilsson & Dalkmann, 2001) by allowing more time for deliberation, knowledge sharing and learning.

Based on the above, it is important to acknowledge the presence of different rationalities (within its diversity of ethical positions) in operation in complex socio-ecological and socio-economic societies, and that there is an increased call for deliberative rationality to be applied (Bond *et al*., 2016), at least at the strategic tier.

2.8 The relevance of power dynamics in tiering

There is a growing understanding that relationships and their associated power dynamics are important in environmental governance (Nooteboom, 2007; Swedish Environmental Protection Agency, 2012). The Swedish Environmental Protection Agency (2012:3) noted that "……[t]*here is now a growing consensus emphasising that governance has a strong effect on environmental actions and outcomes. Rule of law, citizen´s rights of access to information, public participation and equal access to justice is a basis for poverty reduction and sustainable development*" and define 'governance' as describing "….*how power and authority are exercised and distributed, how decisions are made, and to what extent citizens are able to participate in decision-making processes*" (Swedish Environmental Protection Agency (2012:13).

Firstly, what is meant by power and power dynamics? Power dynamics are inherent in any relationship, and the exercise of power is present in any interaction between stakeholders (Cilliers, 2000; Cilliers, 2005b; Cilliers, 2008; Jones, 2011). In complex systems (which include the complex socio-economic and socio-ecological systems within which EA operates), power dynamics create non-linear relationships between components or stakeholders, meaning that all

relations are not equal in their influence. Within complex systems, these non-linear relationships create tensions (Cilliers, 2001; Cilliers, 2005a; Cilliers, 2005b; Nooteboom, 2000; Nooteboom, 2007; Jones, 2011). Also, within these complex systems there is a nexus between power dynamics, rationality and knowledge, where instrumental rationality is related to power in knowledge (Pope *et al*., 2013), but that power can also be used to control the flow of information and knowledge (Cashmore *et al*., 2008; Cashmore & Axelsson, 2013), and the challenge of value-based rationality finding a place in EA and decision making dominated technical rationality (Audouin & De Wet, 2012).

From an analytical perspective, the production of power and the omnipresence thereof is not intrinsically good or bad, as noted by Nooteboom (2000), Cashmore and Alexsson (2013) and Cashmore and Richardson (2013) in discussing power dynamics in EA.

Following on from the above, EA is inherently concerned with power dynamics (Kørnøv & Thissen, 2000; Richardson, 2005; Cashmore *et al.,* 2008; Richardson & Cashmore, 2011; Hansen *et al.*, 2013; Cashmore & Richardson, 2013). Cashmore and Richardson (2013) went further and primarily regarded EA as reconciling the needs and desires of different stakeholders involved in such assessments. According to them, "…..*environmental assessment [EA] is inescapable, and fundamentally, concerned with power*" (Cashmore & Richardson, 2013:2). EAs, therefore, act as mechanisms for conflict resolution – for example, how alternatives are being dealt with, mitigation measures, offsets, trade-offs and what constitutes sustainability. Bond *et al.* (2014) highlight that the search for "*sustainable development …can provide opportunities for powerful development interests to push forward their own agendas*…" (Bond *et al.,* 2014:48).

Analytically, it is important to understand where power is derived from and how it is produced. According to Cashmore and Richardson (2013), power production is partly a product of the institutional context (such as legislation, policies and formalised communication forums) within which EAs operate. These institutional arrangements often serve to give effect to power through governance norms and standard approaches (Cashmore & Alexsson, 2013; Cashmore & Richardson, 2013). Closely linked to this debate, the presence of power dynamics is also central to the application of "game theory" to EA and decision-making by Bond *et al*. (2016), where they reflect on how different role-players react (and exercise power) and what decision-making rationalities are applied. As noted before, EAs operate in a complex world of different governance contexts (Monteiro *et al*., 2018), and multiple ethical views, value systems and contested rationalities (Richardson, 2005; Audouin & Hattingh, 2008; Morgan, 2012; Pope & Morrison-Saunders, 2013).

These competing values, needs and interests and their associated power dynamics play out at all tiers of EA and have been extensively researched and documented (Kørnøv & Thissen, 2000; Richardson, 2005; Nooteboom, 2007; Elling, 2009; Richardson & Cashmore, 2011; Morgan, 2012; Hansen *et al.*, 2013; Bond *et al*., 2016). An illustration of power dynamics at a global policy level is the persistence of vested interests resulting in the decision-making inertia of political leaders in the global climate change arena, culminating in a failure to set firm country commitments for climate change targets (Gardiner, 2006). Also related to the policy tier, Nooteboom (2007) refers to "*power networ*ks" in creating "*barriers of vested interests*" that hamper policy reform initiatives by preventing positive feedback (i.e., a desire for change) towards the formulation of new policy directions. Nooteboom also emphasises that whilst an appropriate level of diverging views is required to achieve new policy positions[11], managing these conflicting views is equally important to prevent them from totally disrupting policy formulation processes. Arts *et al.* (2005) also highlighted that "[p]*olicy SEAs are prepared in a political context in which discussions are usually about normative, subjective arguments instead of (only) objective facts. This policy process is rather fluid, not linear, contains usually many feedback loops and may be subject to sudden changes*". At a programme/project tier, Hansen *et al.* (2013) documented an example of the significance of 'structural power' in SEAs that informed the decision-making process related to aluminium production in Greenland. They illustrated how power influenced the various decisions made throughout the SEA process. Lyhne (2012) also reported how power relations at a strategic level influenced the framing of alternatives in Danish natural gas planning. Ali (2024) also reported on power imbalances influencing EA and decision-making in New Zealand's largest proposed irrigation scheme. Richardson (2005) also reported on the effect of power dynamics in case studies involving both EIAs and SEAs. These examples illustrate how power dynamics are inherent in all EAs and can significantly influence the outcome of assessments and decision-making.

Nilsson and Dalkmann (2001), Kørnøv and Thissen (2000) and Hansel *et al.* (2013), in debating the role of rationality in decision-making, noted that pressure due to time limitations, power influences, the presence of formal rules and procedures, different world views, or the informal rules or culture of an organisation, may significantly influence decision-making outcomes. These influencing factors highlight the challenges of decision-making in complex socio-economic and socio-ecological systems and how rationality and power dynamics influence stakeholder relations within such systems, operating at all tiers (Partidário & Sheate, 2010; Audouin & De Wet, 2012; Cashmore & Richardson, 2013; Bond *et al*., 2016).

[11] That is, in deliberating policy positions, new positions can only emerge in the presence of different views.

The above represents an analytical perspective on power dynamics - to understand what it is, where power is derived from, and how it functions without being perceived as good or bad (Cashmore & Richardson, 2013). From a normative perspective, the focus shifts to how power dynamics are used and the effect thereof, reflecting on the good and the bad of power dynamics and the role of EA in managing conflicts between stakeholders (Nilsson & Dalkmann, 2001; Nooteboom, 2007; Cashmore & Richardson, 2013). In this regard, the role of diversity of interactions in balancing power relations in EA must also be highlighted – i.e., creating diversity in stakeholder interaction and participation to balance power relations (or knowledge and power-sharing) to avoid the undue influence of vested interests on decision-making processes (Wiklund, 2005; Gardiner, 2006; Nooteboom, 2007; Hardcastle & Gerber, 2009; Partidário & Sheate, 2010; Audouin & De Wet, 2012; Elling, 2016). This is also one of the cornerstones of the call for more deliberative approaches to EA - to promote openness and transparency through deliberation to create appropriate levels of diversity of stakeholder views, knowledge and power-sharing (Wiklund, 2005; Elling, 2016; Cilliers, 2000; 2001; Nooteboom, 2007; Partidário & Sheate, 2010) to counter vested interests and prevent undue power dynamics from disrupting EA processes. This view is consistent with the call for deliberative rationality to be applied in complex socio-ecological and socio-economic societies (Nooteboom, 2007; Elling, 2009; 2016; Audouin & De Wet, 2012; Bond *et al*., 2016), especially at strategic tiers.

The theory of limited rationality reflected on by Kørnøv and Thissen (2000) builds on the relationship between rationality, power and knowledge. They emphasised that one of the reasons why rational information does not necessarily lead to better, rational decisions is that decision-makers have limited capacities to consider limited volumes of new information (i.e., bounded rationality). The belief system of any individual is shaped by their level of knowledge, experience and understanding. However, decision-makers, especially those in leadership positions, are often required to make decisions 'in the interest of a greater course' that goes far beyond their experience, beliefs, and knowledge capacity as individuals (Gardiner, 2006). This demand being placed on decision-makers is certainly true when it comes to complex matters such as sustainable development, where decision-makers often (have to) represent the collective decisions of their institutions, their governments, or their constituency – i.e., they embody and represent the collective leadership cadre of their institutions and often are required to present the views of such institutions – i.e. an exercise of power dynamics (Kørnøv & Thissen, 2000; Nooteboom, 2007; Hansen *et al*., 2013). This dilemma is exacerbated when decision-makers are required to contribute to a collective decision-making process but operate under the mandated position of constituency, their entrenched institution's views, or their leadership teams - i.e., they embody the (predetermined) mandated position of a collective beyond them as individuals (Nilsson & Dalkmann, 2001; Richardson, 2005, Wiklund, 2005; Gardiner, 2006; Lyhne, 2012; Ali, 2024).

Bond *et al*. (2016) also aptly illustrated the role of power dynamics in their application of game theory to examine the rationality and legitimacy of decision-making processes operating in the context of EA. In reflecting on the use of knowledge as power in a technical-rational environment, they found that *"…. EA does function as originally intended – to apply instrumental rationality to decision making. However, the in ability of the technical-rational model to deal with the more contested goals of sustainable development has led to calls for deliberative rationality to be applied. The application of game theory has suggested that EA in its current form is not designed for deliberation and will continue to suffer from legitimacy problems*" (Bond *et al*., 2016:193).

Therefore, from a normative perspective, EA at all tiers can be unduly influenced by power dynamics as a result of vested interests (Elling, 2017), institutionalised (predetermined) positions (Gardiner, 2006), governance contexts (Monteiro *et al*., 2018) or individual decision-makers with belief systems shaped by a limited (mental) capacity to consider a limited volume or new information (Kørnøv & Thissen, 2000). Bond *et al.* (2014) highlighted that the search for "*sustainable development ……can provide opportunities for powerful development interests to push forward their own agendas*…" (Bond *et al.,* 2014:48). Hence the call for a transition in conducting EA processes to allow for more deliberation, consistent with Bond *et al.* (2016), who stated that although EAs focus on instrumental/technical rationality, there is a need for a transition to more deliberative rationality to better address the complexity associated with sustainability. Crucial, however, is that the duration of such assessment processes, in particular at a strategic level, must be adequate to facilitate the development of a diversity of learning/empowering network relationships within complex social systems (Cilliers, 2001; Nooteboom, 2007; Partidário & Sheate, 2010; Partidário & Sheate, 2013; Elling, 2016).

The above clearly illustrates that power dynamics are present at all tiers – at a policy level (Gardiner, 2006; Nooteboom, 2007), at a strategic planning/assessment level (Hansen *et al.,* 2013), and at a project level (Richardson, 2005). It is important to understand what power is, how it is derived and functions, and from a normative perspective, to understand how it affects the outcome of EA and decision-making processes at all tiers (Cashmore & Richardson, 2013). Within the complex socio-economic and socio-ecological systems within which EA tiering takes place, there is a nexus between power dynamics, rationality and knowledge, where instrumental rationality is related to power in knowledge (Pope *et al*., 2013), but that power can also be used to control the flow of information and knowledge (Cashmore *et al*., 2008; Cashmore & Axelsson, 2013).

2.9 Tiering in environmental assessment in South Africa

This section provides a literature review that focuses on tiering in EA in South Africa. This section reflects on some of the aspects dealt with in the preceding international literature section – the legislative context (section 2.9.1), the journey from EIA to SEA (section 2.9.2), tiered assessments and decision-making (section 2.9.3), foreclosure of issues (section 2.9.4), knowledge brokerage (section 2.9.5), different forms of tiering (section 2.9.6), the sequential nature of tiering (section 2.9.7), the role of rationality (section 2.9.8) and sustainability (section 2.9.9). The evaluation framework for tiering in South Africa in Chapter 4 also relied on this section to build a Theory of Change narrative.

2.9.1 Tiering captured in legislation

The EA legislation in South Africa provides enabling provisions for developing instruments at different levels/tiers, but no explicit provisions on tiering (DEA, 2014; Kidd *et al.*, 2018). EIAs, as the primary project-level EA instrument, are mandatory and well-regulated (Kidd *et al.*, 2018; Alberts *et al.*, 2023)[12]. SEAs are not legislated for beyond the inclusion of an enabling provision (South Africa, 1998a; Kidd *et al*., 2018)[13]. Unique to South Africa, environmental legislation also makes provisions for Environmental Management Frameworks (EMFs), which are legislated in the EMF Regulations (South Africa, 2010)[14]. EMFs include some elements of strategic EAs (Retief *et al.*, 2021). They also produce maps and environmental management guidelines (see Chapter 3 for a more detailed discussion of EMFs) – it is both a process and an output. There is, however, no legal/mandatory requirement in legislation to conduct such strategic-level assessments, and both SEAs and EMFs are 'voluntary' instruments. The information contained in these strategic-level assessments also does not have a legal effect other than the requirement that the EMF information must be "considered" in the evaluation of EIAs[15] (South Africa, 2010; Cilliers & Retief, 2017; Retief *et al.*, 2021). No such requirement is set for SEAs. The legislation, therefore, only provides for a weak tiering relationship between EIAs and SEAs/EMFs.

The reference to a weak tiering relationship in environmental legislation is best explained by comparing it to the tiering arrangements in the land-use planning sector. The land use planning legislation, the Spatial Planning and Land Use Management Act (SPLUMA) (South Africa, 2013),

[12] EIAs are regulated by the EIA Regulations (South Africa, 2014a).

[13] SEAs are included in the definition of environmental management instruments as contained in the framework of environmental legislation for South Africa, NEMA (South Africa, 1998a).

[14] EMFs are regulated in terms of the EMF Regulations (South Africa, 2010).

[15] See sections 24O (1) of the NEMA (South Africa, 1998) and regulation 5(3) of the EMF Regulations (South Africa, 2010).

explicitly provides for tiering in land use planning. The SPLUMA makes it a legal requirement to develop and regularly review spatial development frameworks (SDFs) at national, provincial, regional and municipal levels[16]. This legal context includes setting requirements for the relationship between tiers and its link with other sector policies. It also means that SDFs cover the whole country, setting tiered land use planning contexts to inform all project-level land use planning and decision-making[17] (South Africa, 2013; Wüst, 2022). The SPLUMA also dictates that no authority may make land development decisions inconsistent with municipal SDFs.[18] In comparison, the environmental legislation includes enabling provisions for assessments at different tiers, but does not explicitly require the interlinking of tiered EAs or PPPPs, and does not set clear requirements for the relationship between tiers.

The notion of tiering is included in the SEA Guideline (DEAT, 2007), where SEA is proposed to inform the development of PPPs and EIAs focusing on programmes and projects. The SEA Guideline highlights that "[t]*he key difference between EIA and SEA in South Africa is that EIA assesses the effect of a proposed development on the socio-economic and biophysical environment, while SEA typically focuses on the opportunities and constraints that that environment provides for future development, as well as the effect of the proposed PPP on the environment*" (DEAT, 2007:1). However, beyond this reference, little guidance on tiering is provided in the guideline.

The notion of tiering is also reflected in the discussion of integrated environmental management in the Environmental Impact Assessment and Management Strategy for South Africa (EIAMS) (DEA, 2014). The EIAMS highlights the role of SEAs, EMFs and EIAs at different levels, as well as the (proposed) role in creating cascading sustainability objectives. The EIAMS states that

> "*Integrated Environmental Management (IEM) requires that environmental concerns should be considered as early as possible in the planning and decision making processes, with the ultimate aim to avoid environmental impacts and where they cannot be avoided, to mitigate and minimise impacts. It should however be taken even further by determining how and if an activity could contribute positively to determined sustainability objectives, indicators and targets. The emphasis should therefore not only be on the minimisation of the potential negative impacts of proposed policies, plans and programs (PPPs), projects/ activities and the enhancement of positive benefits, but also on how a specific PPP, project or activity will contribute to the achievement of the contextually defined sustainability*

[16] Chapter 4 of the SPLUMA (South Africa, 2013).

[17] See Chapter 4, sections 12 – 22 of the SPLUMA (South Africa, 2013).

[18] See section 22(1) of the SPLUMA (South Africa, 2013).

objectives, indicators and targets. EIA practice, within the context of IEM, should fundamentally question the sustainability of a development proposal, moving beyond the mere mitigation of impacts…….. The adoption of a sustainability-led approach in Environmental Impact Assessment and Management will also promote the identification of sustainability objectives, indicators and targets in EMFs and SEAs by national, provincial and local authorities, and are intended to inform relevant provincial and local development planning frameworks and strategies, e.g. Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs). Requirements for and reporting mechanisms on how EMFs or SEAs have been incorporated into IDPs and SDFs will need to be provided for in NEMA. The adoption of a sustainability-led approach in all spheres of government should aim to cascade national sustainability objectives, indicators and targets downwards, for refinement and meaningful implementation at a local scale" (DEA, 2014: 88).

Figure 2-4 reflects the tiering in EA in South Africa. Figure 2-5 provides an expanded depiction of tiering within and between different sectors, including land use planning.

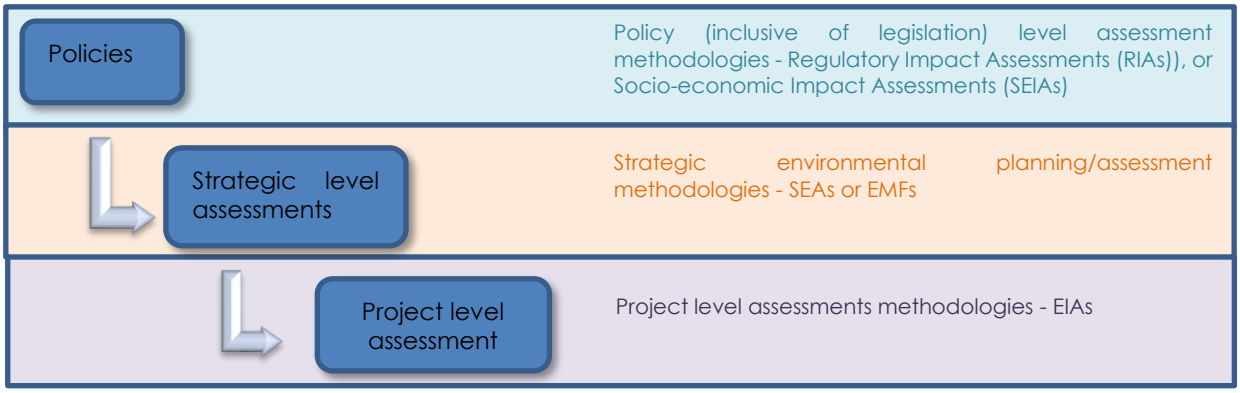

Figure 2-4: Tiering in environmental assessment in South Africa

In South Africa, debates on the success of EIAs have, since the inception of the legal dispensation for EIA in 1997,[19] resulted in two government-led studies reviewing the efficiency and effectiveness of the EIA system (DEAT, 2008b; DPME/DEA, 2019). The 2008 review study (DEAT, 2008b) and the subsequent development of the Environmental Impact Assessment and Management Strategy for South Africa (EIAMS) (DEA, 2014), specifically highlighted the persistence of two challenges, namely:

[19] With the promulgation of the first EIA Regulations, 1997.

- the inadequacies of the EIA system in addressing strategic impacts and cumulative impacts as a crucial prerequisite for attaining or contributing to the goal of sustainable development; and
- the cost and time inefficiencies of the EIA system.

Apart from resulting in various amendments to the legislation governing the EIA system, the above also contributed to DFFE's decision to pursue the development of regulatory instruments to reduce and/or replace the need for regulatory project-level EIAs and decision-making (DEA, 2014; Fischer *et al.*, 2019; Alberts *et al*., 2023). Insofar as tiering is concerned, although not explicitly legislated for, tiered EA and decision-making are catered for by including various enabling provisions in the environmental management legislation[20], albeit weak, as already mentioned.

As noted, SEAs and EMFs are the only strategic-level EA instruments[21] currently used in South Africa (DEA, 2014). The use of SEA and EMFs in South Africa to inform (contextualise) project-level assessments and decision-making has increased over the last 20 years (Retief, 2007; Fischer *et al.*, 2019; Retief *et al.,* 2021). The use of EMFs in South Africa as a strategic informant to EIAs has intensified since the promulgation of its enabling legislation in 2014 (Cilliers, 2015; Marais *et al.*, 2015; Cilliers & Retief, 2017). EMFs are unique to South Africa, and they are used proactively to avoid and manage potential conflicts between sensitive socio-ecological components (referred to as 'attributes') and proposed developments (Cilliers, 2015; Cilliers & Retief, 2017; Retief *et al*., 2021). The attributes of specific geographical areas are strategically assessed to identify environmental management zones with environmental management guidelines to promote sustainable development of resources, including land (South Africa, 2010). To a certain extent, this is similar to the planning approach of SEA practice that was developed in South Africa (Rossouw *et al.*, 2000; Fischer *et al*., 2019; Retief *et al*., 2021) and internationally (Bina, 2003; Fischer, 2006; Bina, 2008; Silva *et al*., 2014; Noble & Nwanekezie, 2017; Kusters *et al.*, 2024). This approach to using SEAs as a planning rather than an assessment instrument was also applied to the SEAs conducted for renewable energy and electricity grid infrastructure planning (i.e., strategic site selection) (Fischer *et al.*, 2019), primarily focused on the identification of opportunities and constraints that the biophysical environment places on development (rather than assessing the environmental impacts of PPPPs). Retief *et al.* (2021) also reflected on the similarities between SEA and EMF practices in South Africa, noting that the decline in the number of SEAs (compared to pre-2007) was potentially related to the increased use of EMFs since 2007. EMFs are now firmly entrenched in EA practice in South Africa, and Cilliers and Retief (2017)

[20] Section 24 of the NEMA (South Africa, 1998a) enables EIAs, EMFs and SEAs with specific regulations for EIAs (South Africa, 2014a) and EMFs (South Africa, 2010).

[21] Although the EIAMS (DEA, 2014) refers to SEAs and EMFs as environmental planning instruments.

reported that 45 EMFs were conducted between 2007 and 2015, mainly following the administrative boundaries of municipalities. No verified information is available on the number of EMFs developed since 2015. In terms of the future use of SEAs and EMFs, Retief *et al*. (2021) make the clear recommendation that "[d] *istinction from EMF is especially needed. We perceive a particular role for SEA in terms of assessing specific PPPs while EMF continues to provide a strategic context for the development of PPPs. Therefore, EMF remains more of an* environmental *planning instrument and SEA could then act as a designated assessment instrument…….the time has come to translate more than two decades of SEA practice into effective SEA legislation that allows for process flexibility and ensures integration with the strategic decision-making processes (i.e. PPP) it aims to inform. The initiative taken by the DEA in recent years to reignite interest in SEA (as separate from EMF) and consider possible legislative provisions should be commended and supported* …… "(Retief *et al*., 2021:359).

2.9.3 Tiered assessments and tiered decision-making

Legislation plays a crucial role in successfully converting information generated during assessments into decisions (Kidd *et al.*, 2018). While this conversion is well-captured for EIAs, it is less so for strategic-level assessments in South Africa (Kidd *et al.*, 2018; Retief *et al*., 2021). Especially during the earlier years of SEA, there was a lack of decision-making support for SEAs Retief *et al.,* 2008; Retief *et al.,* 2021). In discussing the state of SEA practice in South Africa, they highlighted that the lack of a clear decision-making support focus of SEAs was key to understanding the poor performance (i.e., effectiveness) of SEAs. However, from 2014 onwards, several SEAs were government-initiated for large infrastructure projects in certain sectors, such as renewable energy, telecommunication, electricity distribution, shale gas and aquaculture (see Chapter 4). These SEAs specifically included decision-making components focused on streamlining or rationalising the EIA processes and associated regulatory decision-making processes (DEA, 2015; DEA, 2016; Fischer *et al.*, 2019; Retief *et al*., 2021). Importantly, however, the use of SEAs in enabling tiered decision-making was not a result of any change in the legislation but based on the political will in government to use SEAs to drive regulatory reform related to large-scale infrastructural development (Cape *et al.*, 2018; Fischer *et al.,* 2019; Retief *et al*., 2021).

2.9.4 Tiering and the foreclosure of issues

In South Africa, Fischer *et al.* (2019) and Cape *et al.* (2018) reported how an SEA on renewable energy ensured that issues are adequately scoped (in or out) and that specialists are guided on the scope of specialist assessments. The SEA aimed to streamline the environmental regulatory processes for wind and solar developments in pre-assessed geographical areas by performing scoping-level assessments of the biophysical and social environments. The SEA produced sensitivity maps for the identified geographical areas within which renewable energy developments could be promoted, as well as protocols to guide specialist information requirements during more streamlined EIA processes (DEA, 2015). The SEA is also representative of the resurgence of SEAs in South Africa in the last decade, primarily driven by national government (DFFE) with a focus on enabling large infrastructural development (Cape *et al.*, 2018; Fischer *et al*., 2019; Retief *et al*., 2021). Other SEAs (discussed in Chapter 4) followed a similar approach of pre-assessing the biophysical and social environments at a scoping level to determine and guide information requirements of streamlined regulatory EIA processes.

2.9.5 Tiering and knowledge brokerage

As strategic informants, EMFs, SEAs and SDFs play an important knowledge brokerage role by providing a strategic context to inform project-level EIA processes (DEA, 2014). The extended stakeholder consultation processes associated with developing these instruments give communities more time to develop networks of relationships and interactions. It will enable such communities to come to terms with the diversity of needs and desires within them and allow these interactions to develop a sense of identity within certain boundaries or limits of acceptable change through learning and knowledge exchange. In general, the short statutory timeframes of EIA processes do not allow these relationships to develop and for a collective community identity to emerge (Hardcastle & Gerber, 2009; DEA, 2014). Developing these networks and empowering communities are important in bridging the ‘technocentric’ vs ‘value-centric’ divide, where EAs are often seen as too technocentric and not allowing value judgments to inform the outcomes of EIA and decision-making processes (Hattingh, 1999; 2001; Audouin & Hattingh, 2008; Audouin & De Wet, 2010; 2012). It is also important that the institutional arrangements (such as legislation, policies and institutional resources) are created to ensure evidence-based decision-making at the policy tier (Von der Heyden *et al.*, 2016) and in EA (Audouin & De Wet, 2012; Kidd *et al*., 2018; Retief *et al*., 2021).

EIAs in South Africa are often criticised for being too technocentric and not allowing value judgments to inform the outcomes of EIA findings and decision-making processes (Audouin & Hattingh, 2008; Audouin & De Wet, 2012). Public participation within EIA processes is often regarded as inadequate and seen as separate from the technical/scientific information-gathering process, instead of being an integrated part thereof or allowing it to influence and shape how technical information is being analysed and evaluated (Hardcastle & Gerber, 2009; Audouin & Hattingh, 2008; Audouin & De Wet, 2012). This view is also reflected in some of the recommendations from the multi-sectoral review of the 'Environmental Impact Assessment and Management Strategy' of South Africa (EIAMS), completed in 2014 (DEA, 2014). It was especially the non-governmental and civil society grouping in the multi-sector stakeholder steering committee for the EIAMS that strongly supported the need for enhanced stakeholder engagement as part of EA processes at both strategic and project-level tiers (DEA, 2014).

Cape *et al*. (2018) noted that capacity building and knowledge transfer and/or learning were a specific value expectation of government stakeholders during the renewable energy SEA process. This same expectation about EIA processes was also conveyed by Cilliers *et al.* (2020). This focus also flows from the imperatives for empowerment and knowledge transfer that are contained in the principles of section 2 of the NEMA, including -

> *"(f) The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.*
>
> *(g) Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.*
>
> (*h) Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means."* (South Africa, 1998a)

The above participatory focus of EAs also reflects the anthropocentric view of sustainability in South Africa (Hattingh, 2001; Audouin & Hattingh, 2008). It also highlights the EA practitioner's role as a knowledge broker (Weaver *et al*., 2008), both in contributing to new knowledge and empowering stakeholders through knowledge transfer.

The EIAMS (DEA, 2014) also refers to the importance of knowledge transfer between tiers by reflecting that "[a] *key success factor* [towards sustainability] *would be robust and effective information and knowledge transfer between the broader scale and site/project specific activities;*

the information/knowledge transfer should occur both ways so that the successes and failures at individual activity level influence the further broad scale strategic planning." (DEA, 2014:34). The EIAMS also confirms the knowledge brokerage role of EA practitioners as an integral part of being an environmental professional.

The above highlights the role of tiering in facilitating knowledge brokerage – the generation, deliberation, sharing and use of knowledge in the South African context.

2.9.6 Different forms of tiering and influence between tiers

The different types and levels of tiering that exist in South Africa (see Figure 2-4) are strongly influenced by the constitutional dispensation (Kidd *et al*., 2018). The Constitution (South Africa, 1996) sets out three separate but interdependent spheres of government, namely national, provincial and local (municipal) governments, with different constitutional mandates:

- Vertical tiering, tiering between a hierarchy of levels:

  Administrative jurisdictions and government spheres or levels: The Constitution (South Africa, 1996) provides for three spheres of government: national, provincial and municipal authorities. These spheres do not represent hierarchical levels of government but independent (though interdependent) spheres of government, each with its distinct constitutional powers and responsibilities (Kidd *et al*., 2018).

  Planning levels are represented by cascading levels of policies, plans, programs and projects. The most explicit provision for tiering can be found in the land-use planning sector. The planning legislation (South Africa, 2013) set requirements for national, regional, provincial and municipal spatial development frameworks (SDFs), with a distinct requirement for alignment between these different planning levels. This similar legislative context does not exist for EA.

  Geographical levels are cascaded from national, provincial, regional, and municipal areas. For example, in the functional area of biodiversity management, provision is made for the development of a national biodiversity framework, for bioregional plans for specific geographic regions that can be identified as a bioregion, as well as individual biodiversity plans for specific ecosystems, indigenous species, for migratory species (South Africa, 2004).

- Horizontal tiering at the same (administrative) level:

The separation of different constitutional mandates (South Africa, 1996) also translates into different sectors (including human settlements, transport, water management, waste management, conservation, spatial planning, and mining) across different spheres of government (Kidd *et al.*, 2018). Horizontal tiering relates to the interaction and cooperation between organs of state operating at the same administrative level (e.g., coordination of spatial planning across adjacent municipalities or where a provincial transport strategy influences a provincial SDF). The nature of horizontal tiering is primarily based on the different mandates and the need for coordination between sectors set out in the Constitution[22] (South Africa, 1996).

- Diagonal tiering:

  Diagonal tiering happens when a strategic tier in a sector influences a lower tier in a different sector. For example, a municipal SDF can influence an EIA process, or a provincial spatial development framework may influence local transport planning.

[22] See the different constitutional mandates set out in Schedules 4 and 5 of the Constitution (South Africa, 1996).

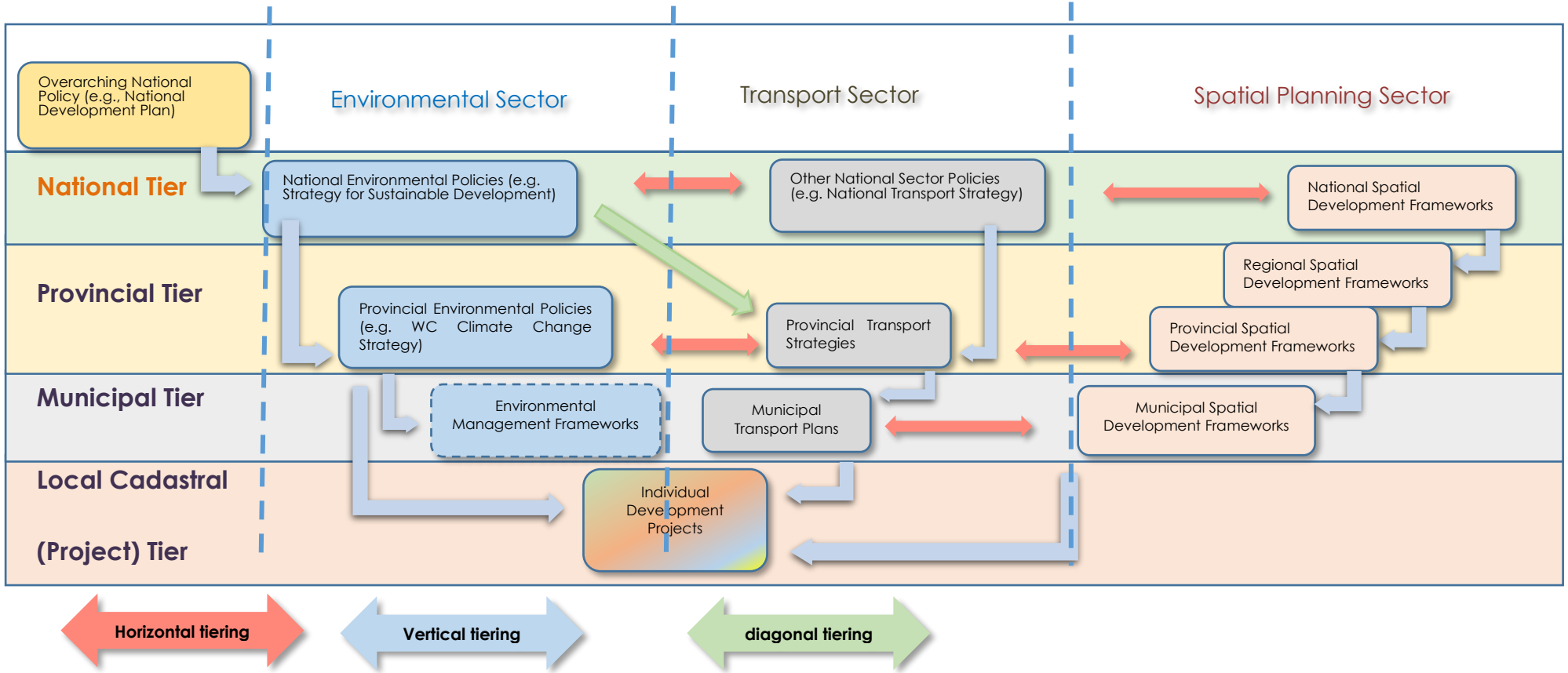

Figure 2-5: Vertical, horizontal and diagonal tiering in South Africa

2.9.7 The sequential nature of tiered assessments

The notion of tiering assumes that PPPPs are sequential and that the more strategic tier precedes the subsequent tier. However, this sequencing does not always happen in practice and projects often precede the development of a strategic tier. In addition, sequencing also relates to PPPPs being informed by an EA - i.e., that evidence flowing from an EA must precede and inform the development of the PPPP.

One of the most prominent examples of misalignment in timing is in the renewable energy sector. EIAs for renewable energy projects preceded the SEA for renewable energy, and it can be argued that the pressure to deal with EIA applications for such large-scale infrastructure consistently, contributed to the need for the SEA (Cape *et al*., 2018; Fischer *et al*., 2019; Retief *et al*., 2021). This timing disjunct often creates a void in the strategic context within which EIAs operate, resulting in the inability of EIAs to deal with strategic-level impacts raised during EIA processes, underscoring the criticism of why EIAs do not deliver sustainable development outcomes (Cilliers *et al.*, 2020; Roos *et al*., 2020). The lack of regulatory clarity on tiered EAs contributed to the above challenge. The legislative framework to determine when, how, and for what purpose tiered policies, plans, or programmes are to be developed, as well as the assessment thereof, does not exist within the environmental sector in South Africa – i.e. tiering is not legislated for (see Chapter 4 for a more detailed discussion). This lack of tiering arrangements in the environmental sector is in stark contrast to the South African land-use planning sector, where clear legislative provision is made for tiering of spatial planning frameworks through setting requirements for the compilation of national, regional, provincial and municipal SDFs[23] (South Africa, 2013). These clear tiering arrangements resulted in SDFs being drafted in all provinces throughout South Africa in different spheres (Wüst, 2022). The same cannot be said of EMFs and SEAs, as both are voluntary instruments (Kidd *et al*., 2018), and all geographical areas in the country are not covered by EMFs or SEAs.

Sequencing is also related to PPPPs being preceded and informed by an EA in support of evidence-based decision-making. In South Africa, the requirement to formulate evidence-based policies, plans or programmes is not set in legislation (Retief *et al*., 2008). However, the Constitution[24] and the Promotion of Just Administration Act, 2000 (PAJA) (South Africa, 2000b), calls for administrative action that is lawful, reasonable, and procedurally fair and that everyone whose rights have been adversely affected by administrative action has the right to be given

[23] See Chapter 4, section 12 – 21 of the Spatial Land Use Planning Act, 2013 (South Africa, 2013).

[24] Section 33(1) and (3) of the Constitution (South Africa, 1996).

written reasons (Alberts *et al*., 2021; Alberts *et al*., 2022). Consistent with the definition of 'administrative action' in the PAJA, the adoption of policies and plans also constitutes administrative actions, and it follows, therefore, that the PAJA creates a legislative context for the formulation of policies, plans and programmes to be evidence-based. Furthermore, the decision by the Cabinet to require that every policy and law reform proposal to be submitted to the Cabinet for endorsement must be accompanied by a Socio-Economic Impact Assessment (SEIA). The purpose of SEIAs is to provide information on the need for policy/law reform and the environmental, social and economic implications thereof (DPME, 2011). It can be argued, therefore, in theory at least, that provision is made for evidence-based policy and law reform in South Africa. In practice, however, there is still a poor translation of scientific information into formulating evidence-based PPPs (Retief *et al*., 2008; Von der Heyden *et al.*, 2016; Retief *et al*., 2021). For example, regulatory instruments should be developed to exclude certain agricultural-related developments from conducting EIAs and to obtain environmental authorisation before commencing (South Africa, 2021a; 2021b). The development of the regulatory instrument was not informed (preceded) by any SEA or SEIA.

2.9.8 The role of rationality in tiered environmental assessment and decision-making

In South Africa, the debate on rationality and EA, particularly related to regulatory decision-making, is strongly influenced by the institutional context, especially the legislation and ever-increasing body of jurisprudence on the application of rationality in regulatory decision-making (Retief *et al.,* 2019; Alberts *et al*., 2021; 2022).

Regarding the Constitution of South Africa (South Africa, 1996), administrative action by all persons performing a public function must be lawful, reasonable, and procedurally fair based on the principles of accountability, responsiveness, openness, and transparency[25]. Also, in terms of the PAJA (South Africa, 2000), all administrative actions must be based on the "relevant considerations". 'Need and desirability' constitute a relevant consideration, and more importantly, the application of 'need and desirability'[26] is integrally linked to considering the strategic context provided by other tiers of assessment/planning. By implication, considering the strategic context provided by other tiers becomes a relevant consideration in EIA decision-making. As such, tiered

[25] Section 33(1) provides a right to 'reasonable' administrative action that is 'procedurally fair'. Section 33 (2) gives people the right to be given reasons for administrative action that affects their rights (South Africa, 1996).

[26] The consideration of 'need and desirability' is a legal requirement in terms of the EIA Regulations (South Africa, 2014a) and the NEMA (South Africa, 1998a).

EAs are essential to evidence-based, rational decision-making[27] (DEA, 2017c; Kidd *et al*., 2018). Audouin (2009) and Audouin and De Wet (2010; 2012) confirmed that the EIA process in South Africa is primarily focused on objectivity and instrumental rationality to the detriment of value-rationality. They call for a more balanced approach between instrumental and value-based rationality – integrating objective, science-based, factual knowledge and subjective value-based knowledge. According to Audouin and Hattingh (2008), value judgments are often seen as separate from the technical/scientific process instead of being an integrated part thereof or allowing it to influence and shape how technical information is being analysed and evaluated. The reality of societies being complex socio-economic and socio-ecological systems with contested values and rationalities (Audouin & Hattingh, 2008; Audouin & De Wet, 2012) is especially prominent in South Africa, with its strong anthropocentric focus (Audouin & Hattingh, 2008; Toxopeüs & Kotzé, 2017) on sustainability and realisation of environmental rights (South Africa, 1996).

In conducting strategic-level assessments and planning frameworks (such as SEAs, EMFs and SDFs), stakeholders (communities) are also provided with to participate in the formulation of visions or future outcomes for their living environments (Hardcastle & Gerber, 2009). Apart from the consideration of technical/scientific inputs, visions can be informed by value-based opinions of stakeholders (Audouin & De Wet, 2012) - e.g., a community deciding on the level of change they are willing to accept, such as the extent of change in a rural environment that will be deemed acceptable to them to cater for agri-industries. These deliberated outcomes then become embedded in the strategic framework and become contextual information that informs the project-level planning and decision-making processes. In this way, value-based inputs (at a strategic level) become integrated into rational, evidence-based inputs into regulatory processes at the project level (Hardcastle & Gerber, 2009).

2.9.9 Tiering and sustainability

The scope of EAs is influenced by how the environment is defined in legislation. In South Africa, the terms 'environment' and 'sustainability' are defined in the NEMA (South Africa, 1998a) to include socio-economic aspects (Govender *et al.,* 2006; Feris, 2008; 2017; Toxopeüs & Kotzé, 2017; Kidd *et al.*, 2018). 'Sustainability' in the South African context reflects an inherent

[27] In terms of Regulation 18 of the EIA Regulations (Government Notice No. R. 982 of 04 December 2014), when considering an application for environmental authorisation, the relevant decision-making authority must have regard to several specific relevant considerations, including explicitly having to consider "the need for and desirability of the activity".

anthropocentric basis[28] that particularly highlights the need for intra-generational equity/justice (Hattingh, 2001; Audouin & Hattingh, 2008; Feris, 2008; 2017; Audouin & de Wet, 2012; Toxopeüs & Kotzé, 2017; Kidd *et al.*, 2018). Most politicians, policy- and decision-makers acknowledge that any extreme position along the ecocentric-anthropocentric continuum is inappropriate and that integrated (or balanced) solutions must be found (Hattingh, 2001), requiring a balanced consideration of human rights (Feris, 2008; 2017; Toxopeüs & Kotzé, 2017; Kidd *et al.*, 2018). According to Audouin and De Wet (2012), sustainability calls for a balance between instrumental and value-based rationality – the integration between objective, science-based, factual knowledge and subjective value-based knowledge. However, the complexity of this socio-economic and socio-ecological divide makes finding a balance (i.e., an equitable, sustainable outcome) extremely difficult to achieve in EAs and decision-making (Audouin & Hattingh, 2008; Audouin & De Wet, 2012; Morrison-Saunders & Retief, 2012; Retief *et al*., 2013; Retief, 2013; Kidd *et al.*, 2018).

The broad definition of 'environment' and 'sustainability' in the legislation governing EIAs (South Africa, 2014a) implies that the EIA process is well set up to achieve sustainability outcomes (Feris, 2017; Kidd *et al*., 2018). However, in practice, EIAs are still criticised for their lack of achieving sustainable outcomes (DEA, 2008; Swilling *et al*., 2012; Retief *et al*., 2013; Kidd *et al.*, 2018). In part, this challenge relates to the complexity of defining sustainability (Hattingh, 1999; 2001; Burns *et al*., 2006; Audouin & Hattingh, 2008; Audouin & De Wet, 2012; Bond *et al*., 2016). This was also substantiated by the most recent finding of the EIA system review in South Africa that it was not possible to determine the contribution of EIAs to sustainability due to the void of sustainability objectives against which to measure the merits of applications in progressively contributing to sustainability outcomes (Retief, 2013; DPME/DEA, 2019). The clear recommendation flowing from the review study is that "…*well defined and measurable* [sustainability] *objectives are developed*" (DPME/DEA, 2019:61).

In South Africa, SEAs are used by the DFFE to achieve the objective of streamlining regulatory requirements while protecting the environment (Fischer *et al*., 2019). Arguably, these SEAs are driven more by political pressure to release the regulatory burden on large infrastructural development (Retief *et al*., 2021) than environmental protection. Cape *et al*. (2018), in reporting on a SEA conducted for renewable energy in South Africa, noted that sustainability was not one of the value expectations expressed by stakeholders who participated in the SEA process. They suggested that not raising sustainability as a value expectation was perhaps due to sustainability

[28] Although Ferris (2010) maintains that the reference to ecological sustainability in the Constitution reflects an ecocentric perspective which maintains that all life on earth, not only human life, should be sustained. An ecocentric view is more holistic and focuses strongly on maintaining the integrity or value of all life with an emphasis on interdependency (Dresner, 2002).

being understood by stakeholders to be embedded into the SEA. Hence, there was no need to raise it as a value expectation to emerge from the SEA. From an EIA perspective, Swilling *et al.* (2012) expressed the opinion that EIAs will not deliver sustainable development outcomes as long as the focus is on impacts and cost of pollution – i.e., they expressed the need to set objectives and indicators that focus on economic growth that is decoupled from impacts associated with increased resource use. The review study on the EIA system in South Africa (DPME/DEA, 2019) also found that it is impossible to measure the contribution of EIAs to sustainability, as there are no sustainability objectives against which to measure such performance.

In the Environmental Impact Assessment and Management Strategy for South Africa (EIAMS) (DEA, 2014), tiering is proposed as a partial solution to address this challenge. The EIAMS states that there is:" …. *an urgent need for strategic environmental planning that results in the broad scale definition of sustainability objectives for the entire country that are translated into indicators and targets. These collective objectives, indicators and targets can then provide a framework within which better decision making can be effected on individual project applications" (DPME/DEA, 2019:61)*. The EIAMS emphasises the role of EMFs and SEAs in this setting and cascading of sustainability objectives and the role of EMFs and SEAs in this regard[29].

Therefore, in theory, tiered EAs in South Africa are well set up to achieve sustainability outcomes based on how the 'environment' and 'sustainability' are defined. However, in practice, the challenges of achieving sustainability outcomes within complex socio-ecological and socio-economic systems remain an elusive goal.

[29] Page 31-33 of the EIAMS (DEA, 2014)

CHAPTER 3: THEORETICAL FRAMEWORK - THEORY OF CHANGE

This chapter is part of Phase 1 of this research and contributes to research objective 1 by providing a theoretical foundation for the Theory of Change (ToC). It reflects the need for evidence-based policies and decision-making (section 3.2). The concept of ToC is explained (section 3.3), why ToC is used in this research (section 3.4), and describes the components of a ToC process (section 3.5).

3.1 Introduction

To critically evaluate how governments implement their duties has always been an inherent part of good governance (Jacob *et al*., 2020; OECD, 2020a; 2020b; Al Hudib & Cousins, 2022), and includes assessing the effectiveness of policies, plans, programmes and projects (PPPPs – see Chapter 2), to improve its benefits to society as a whole (Auriacombe, 2011; Wingqvist *et al*., 2012; Ghate, 2018; Jacob *et al*., 2020; OECD, 2020a). Reviewing the effective implementation of PPPs is especially true in today's society, where there is an increased demand for excellence in governance, accountability and a demand for evidence-based decision-making at all levels of government (World Bank, 2000; Wingqvist *et al*., 2012; OECD, 2020a; 2020b; Al Hudib & Cousins, 2022).

While it is the government's ongoing drive to understand societal challenges and to develop PPPPs to respond to these challenges, there is an equal ongoing evaluation and research drive to improve the efficiency and effectiveness of these PPPPs (Ghate, 2018; Jacob *et al*., 2020; OECD, 2020a; 2020b). Such research and evaluations focus on procedures and decision-making processes, the use of resources, and whether the use thereof effectively converts into outputs and outcomes that contribute to achieving the originally intended goals of policymakers (OECD, 2020a; Wingqvist *et al*., 2012; Auriacombe, 2011). In evaluating PPPPs, ToCs and programme logic models are often used as preferred instruments (Auriacombe, 2011; Jacob *et al.*, 2020; OECD, 2020a).

3.2 The need for evidence-based policies, planning and decision-making

Both policy formulation and reviewing the efficacy of its implementation are integral to governance (Jacob *et al.*, 2020; OECD, 2020a; OECD, 2020b). Monitoring and evaluation have emerged as essential components of governance frameworks. It provides both the government, citizens and other stakeholders with an accountability framework that can generate information (evidence) on

the effectiveness, efficiency and quality of PPPPs, as well as the performance of the government itself, its decision-makers and leaders (World Bank, 2000; Auriacombe, 2011; DPME, 2011; De Silva *et al.*, 2014; Breuer *et al.*, 2014; Thornton *et al.*, 2017; Jacob *et al.*, 2020; OECD, 2020a; 2020b; Al Hudib & Cousins, 2022).

According to the World Bank (2000), monitoring and evaluation also contribute to measuring the following good governance principles:

- *Accountability*: measuring performance in achieving substantive outcomes and the effective use of resources in achieving the intended impacts.
- *Transparency:* fostering transparency through the disclosure of all relevant information.
- *Combating corruption*: preventing, controlling and disclosing corruption and the undue use of power.
- *Participation*: ensuring stakeholder participation, cooperation and co-ownership (or partnerships) in policy reform.
- *Capacity development*: knowledge brokerage, capacity building and empowerment of stakeholders and institutions
- *Legal and judicial reform:* Creating and maintaining a stable legislative environment with an objective, reliable, and independent judiciary system.

The use of ToC is playing an increasingly important role in the formulation of policies as well as monitoring and evaluation (Auriacombe, 2011; Vogel, 2012; OECD, 2020a; Al Hudib & Cousins, 2022). In policy development, ToC is predominantly used in an *ex-ante* manner, and in monitoring and evaluation, it is used in an *ex-post* manner (OECD, 2020a).

3.3 Theory of Change as a concept

The concept of 'theory of change' (ToC) was developed in the United States in the 1990s to improve evaluation theory and practice in the field of community initiatives (Weiss, 1995; Anderson, 2004a; Anderson, 2024b; Stein & Valters, 2012; Valter, 2015). It is also used in other fields, including the medical research field (De Silva *et al.*, 2014), the mental health field (Breuer *et al.*, 2014), agricultural research (Thornton *et al.*, 2017; Allen *et al*., 2017)), environmental impact assessment (Alberts *et al*., 2019), social programmes (Ghate, 2018), human rights (Rogers, 2014), international development support (Stein & Valters, 2012; Vogel, 2012) and the policy field (United Nations, 2015). Its roots, however, can be traced back to the emergence of logic planning models (Weiss, 1977), such as the logical framework approach developed from the 1970s onwards (Weiss, 1995; Vogel, 2012; Stein & Valters, 2012; Auriacombe, 2011).

When considering the various examples of how ToC has been used, one of its emerging strengths is its flexible application (Anderson, 2004a; Anderson, 2004b; Vogel, 2012; Stein & Valters, 2012; Laing & Todd, 2015). In reflecting on the purpose of ToC, Stein and Valters (2012) identified four broad categories:

- It can be used predominantly *ex-ante* for strategic planning (Anderson, 2004a; Anderson, 2004b) or policy design (OECD, 2020a). In strategic planning, ToC assists institutions logically and practically in depicting the envisaged change processes and their anticipated outcomes, as well as facilitating project implementation.
- In monitoring and evaluation, ToC is used primarily in an *ex-post* manner to reflect the expected pathway of change processes and its intended outcomes, which are to be evaluated and reviewed over time (Auriacombe, 2011; OECD, 2020a; OECD, 2020b).
- In communication and information sharing, ToC is used by organisations to describe processes to internal and external stakeholders to strengthen such relationships - for a description of an initiative /functioning of an institution (De Silva *et al.*, 2014).
- In knowledge transfer (or learning), ToC assists an organisation in building and rationalising the inner logic of the organisation or its programmes – e.g., to support organisational development (Thornton *et al*., 2017).

Auriacombe (2011) and the OECD (2020a; 2020b) also highlighted the need for sound evidence as the foundation for good governance, creating a context for information sharing on the effectiveness, efficiency and quality of government programmes, for various stakeholders, including civil society and political decision-makers (i.e., a knowledge brokerage role). The OECD (2020a) stated, "*ex post evaluation is also important to facilitate learning, to understand if and when the objectives of policies were attained and spell out a theory of change*" OECD, 2020a:21).

In their reflection on ToC, Stein and Valters (2012) depicted its purpose and use as a continuum (see Figure 3-1). On the left, ToC is used as a technical and precise planning tool. In the middle, ToC is used as an implicit approach to reflect on how a policy/programme or initiative/project operates or is expected to operate. On the right, ToC is used as a more interactive approach to understanding the complexity within which policies/plans/initiatives and institutions operate and how change (should) happen (and is responded to).

Figure 3-1: Continuum on Theory of Change (Stein & Valters, 2012)

Furthermore, Laing and Todd (2015) highlighted several different approaches to the development of theories of change:

- Deductive models. When following this approach, ToCs are founded on existing research literature and current knowledge of how systems operate.
- Inductive models. In this approach, ToCs are developed based on observations rather than known information on how things should work. Inductive models are based on the view that practical realities, rather than theoretical understanding, often shape projects, programmes and policies and their implementation.
- Mental model. This approach strongly relies on stakeholder views, experiences, and knowledge and builds ToCs based on a facilitative process that reflects their collective inputs.
- Collaborative model. In this approach, ToCs are the collaborative outcome between academic inputs (evidenced by existing research/literature), practical experiences and expertise.

Based on the above, deductive models are often applied in monitoring and evaluating policies, plans and initiatives/projects, representing an *ex-post* application of ToC, whereas deductive and mental models apply ToC in an *ex-ante* manner.

When considering the application of the above models, this evaluation research favours a collaborative model - it applies both an inductive model and a mental model in building a logic framework for tiering in EA and an evaluation framework using ToC. From the above, ToC constitutes both a process and a product. As a process, it provides an approach to develop an inner logic (logical framework) of a change process, a policy, programme or project. The product flowing from such a process is a graphical depiction (ToC map) and narrative of the thought process.

3.4 Why use the theory of change for this research?

Major strides have been taken in evaluation research, acknowledging that applied research findings or evidence contribute significantly towards improving policy contents and processes (Hovland, 2007; Auriacombe, 2011; Li & Zhang, 2022). The AEA (2009) also stated that applied evaluation research plays an increasingly valuable role in measuring the extent to which government programmes achieve their aims/goals - the improvement of policies and plans is informed by the *ex-post* evaluation thereof.

In this research, ToC was used to:

- build an inner logic, or logical framework for tiering in EA in South Africa by reflecting how EIA functions within a tiered EA system (see Chapter 4), based on the current legal, policy and institutional context, international research literature, as well as practical experience;
- clarify the strategic impact of tiered assessments to be achieved, the preconditions required and assumptions to be met to achieve this change, as well as the contextual conditions and informants influencing it;
- build an evaluation framework that was used to (*ex-post*) evaluate the existing EA tiering practices in South Africa through analysing case studies on how EIAs function within a tiered EA context; and
- based on the research findings, the ToC for tiering in EA was redefined, but with the specific purpose of making recommendations for each component to improve the effectiveness and efficiency of tiering in EA in South Africa (see Chapter 10).

ToC was selected as a preferred approach considering the complex environment (e.g., policy, legislative, political, socio-ecological and cultural informants) within which tiering occurs (Bond *et al*., 2022). The intended contribution of ToC in this research was that it:

- allowed this research to focus on integrating research (literature) and practical experience/knowledge on EA internationally and in South Africa;
- focused attention both on the components of ToC for EA and on the complexity of relationships between these components;
- identified the assumptions made in building a logical framework for EA in South Africa and to test these assumptions; and
- facilitated the transition to focus on outcomes to be achieved by EA at different tiers by mapping backwards from impacts to inputs.

Consistent with what Laing and Todd (2015) termed a ‘collaborative model’, this research used ToC to integrate academic inputs (evidenced by existing research/literature) and practical experiences/expertise to build an evaluation research framework to analyse the efficiency and effectiveness of tiering in EA in South Africa, seen from a perspective of how EIAs operate within an EA tiering system.

3.5 The typical components of a theory of change process

The components of the ToC (Anderson, 2004a; Anderson, 2004b; Vogel, 2012; Stein & Valters, 2012) that are used to develop a logic framework for effective tiering in EA are depicted in Figure 3-2. Building a logical framework starts with the identification of the strategic aim (impact) and long-term goals (or outcomes) to be achieved and then mapping backwards to identify the

preconditions that must be in place to achieve these ultimate goals and, importantly, the assumptions associated with the various ToC components and the relationships between them within this causal pathway. The importance of assumptions in these causal relationships is reflected by the OECD (2020a) in stating that *"[A] theory of change can be defined as a set of interrelated assumptions explaining how and why an intervention is likely to produce outcomes*" (OECD, 2020a:86).

Figure 3-2 reflects the dilemma that often faces government in the development and implementation of legislation, policies, plans, programmes and projects, namely the disconnect between what is expected to be done based on a specific institutional context, the actual activities/outputs that are being implemented in practice, and the desired outcomes/impact to be achieved. One of the values of using a ToC is that it focuses primarily on the impacts and outcomes to be achieved when mapping backwards to inform the outputs and actions required.

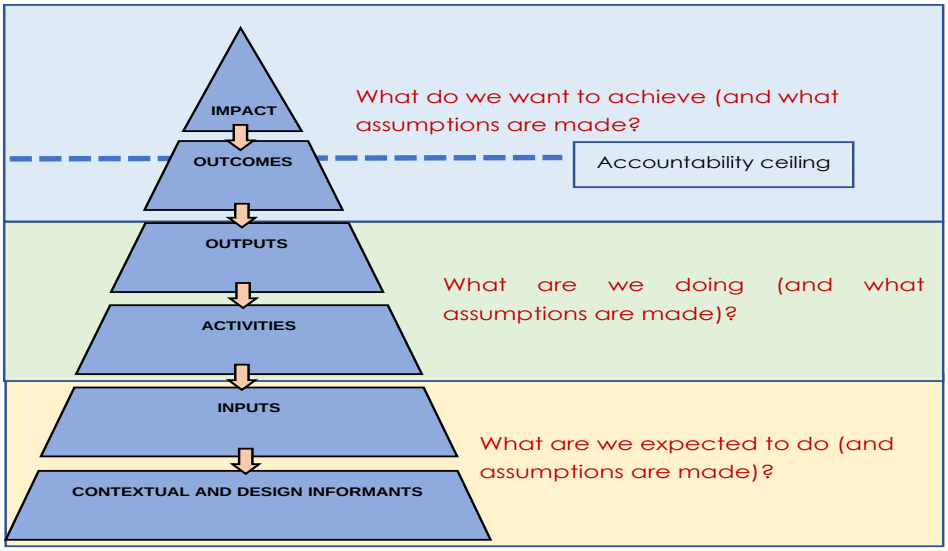

Figure 3-2: Hierarchy of the components of a ToC reflected as a logical framework (DPME, 2011)

The following subsections reflect the different components of a ToC in general (Anderson, 2004a; Anderson, 2004b; AEA Evaluation Policy Task Force, 2009; Stein & Valters, 2012; Auriacombe, 2011; Vogel, 2012; Taplin *et al.*, 2013; Laing & Todd, 2015; Valters, 2015; United Nations, 2015).

3.5.1 Strategic Impact and Outcomes

The strategic impact represents the ultimate goal(s) to be achieved. These goals are aspirational and are often not achieved through the sole influence of a specific policy/plan/programme/project to which the ToC is applied (also see discussion on accountability ceiling). In the context of

sustainability, such strategic impacts can be equated to achieving the UN's 2030 Sustainable Development Goals (UN, 2015).

Outcomes (immediate or intermediate) are distinguished from impacts insofar as the former are prerequisites for achieving the latter. In most instances, outcomes are the responsibility of the role-players involved and constitute preconditions to achieving the desired impact. Outcomes represent the (desired) change in status or condition to be achieved in people, communities, institutions, and natural and artificial environments (Anderson, 2004a; 2004b; Auriacombe, 2011; Stein & Valters, 2012; Vogel, 2012; Taplin *et al.*, 2013; UNDG, 2017). For example, in environmental management, outcomes may represent the changes to be achieved in policies, legislation, behaviour change, attitude, knowledge, the state of development, the state of the environment, well-being, etc. Notably, an outcome is not an action (i.e., 'what is to be done') but rather represents what an action leads to (i.e., 'what is to be achieved' by an action).

There can be intermediate as well as intermediate (long-term) outcomes. For example, an immediate outcome could be that decisions that are issued include sustainability considerations, whilst an intermediate outcome might be that regulatory decision-making is sustainability-led (DPME/DEA, 2019).

3.5.2 Accountability ceiling

Although not prominent in all literature, the presence of an accountability ceiling is an important concept in understanding the relationship between impacts and outcomes (Taplin & Clark, 2012; Taplin *et al.*, 2013). Apart from outcomes often being depicted as preconditions for achieving an impact (e.g., the goal of achieving sustainable development), the presence of accountability ceilings is another characteristic of ToC that reflects the difference between outcomes and impacts. The impact (ultimate goal) to be achieved by an institution, initiative, policy, or plan may transcend what can be achieved. As such, the institution, initiative, policy or plan is not accountable for achieving the ultimate goal/impact but can contribute.

For example, while poverty reduction is the ultimate goal of an organisation's initiative, they would not be able to achieve it on their own. The organisation's work may be to provide training and capacity building that will contribute to achieving the impact (or ultimate aim) of poverty reduction, but the organisation *per se* is not accountable for poverty reduction (Taplin *et al.*, 2013).

The location of an accountability ceiling (Taplin *et al.*, 2013) depends on the characteristics of the impacts, long-term or intermediate outcomes of the specific initiative, policy or programme that is

the subject of the ToC. In some initiatives, the ceiling of accountability may lie between immediate and intermediate outcomes, whereas for other initiatives, the accountability ceiling may lie between outcomes and impacts.

In summary, an accountability ceiling represents the point where the impacts or outcomes to be achieved lie beyond the control, abilities and influence of only the stakeholders involved in the specific initiative/policy/programme to which the ToC is applied.

3.5.3 Outputs, activities and inputs

When mapping backwards from outcomes, outputs represent the tangible deliverables or products. If implemented, the assumption is that these outputs will collectively achieve the desired outcomes. These outputs may include research products, policies, plans, programmes or projects (Vogel, 2012; Taplin *et al.*, 2013; Auriacombe, 2011; UNDG, 2017; Stein & Valters, 2012).

Actions or interventions that are implemented represent the 'what must be done' to produce a project, plan, programme, policy or initiative. These actions achieve specific outputs (Vogel, 2012; Taplin *et al.*, 2013; Auriacombe, 2011; UNDG, 2017; Stein & Valters, 2012). Examples may include drafting a report, conducting public consultation, or conducting research.

Inputs relate to the resources, such as information, time, skills, and human and financial resources, that are required for actions to be taken (Auriacombe, 2011; Stein & Valters, 2012; Vogel, 2012; Taplin *et al.*, 2013; Valters, 2015; UNDG, 2017).

3.5.4 Design and contextual informants

No plan, programme, project, or initiative operates within a vacuum - design and contextual information represent the strategic or broader informants that shape or influence the various ToC components (Auriacombe, 2011; Ghate, 2018; Laing & Todd, 2015; Bond *et al.*, 2022).

For ToC to be effective, it must explicitly incorporate external/contextual influences (Laing & Todd, 2015). For example, economic climates, geo-political differences, power dynamics, different constitutional frameworks, jurisprudence or even different institutional arrangements provide a context that influences how resources are made available or are used, how actions are performed,

or even how outcomes are perceived (Vogel, 2012; Taplin *et al.*, 2013; Auriacombe, 2011; Laing & Todd, 2015; UNDG, 2017; Stein & Valters, 2012; Ghate, 2018; Bond *et al*., 2022).

3.5.5 Assumptions

Assumptions are the underlying expectations of why and how an inner logic of the TOC functions – i.e., assumptions must be true for inner logic to function as reflected in the ToC. Assumptions primarily related to the relationships between ToC components and assist in recognising and explicitly addressing the uncertainties and perceptions that underlie policies, plans, programmes, projects, or initiatives (Vogel, 2012; Taplin *et al.*, 2013; Auriacombe, 2011; UNDG, 2017; Stein & Valters, 2012; OECD, 2020a; Jacob *et al*., 2020). For example, it is assumed that the findings of a research report will be used objectively by decision-makers. The importance of assumptions is reflected by the OECD (2020a) in stating that "[a] *theory of change can be defined as a set of interrelated assumptions explaining how and why an intervention is likely to produce outcomes*" (OECD, 2020a:86).

The identification of assumptions is also important because it assists in identifying critical factors that will influence the success of a policy, plan, or any initiative to achieve its impact. Therefore, the identification, monitoring and testing of the underlying assumptions made in the ToC are a key focus of evaluation research (Auriacombe, 2011; OECD, 2020b).

3.5.6 Indicators/Criteria

Indicators are "… *measurable and observable phenomena, furnish the evidence of achievement*" (Taplin *et al.*, 2013:7) - they reflect progress/change and achievement towards achieving a desired output, outcome or impact (Auriacombe, 2011; Taplin *et al.*, 2013; OECD, 2020a, OECD, 2020b). Indicators represent observable, measurable changes achieved over time that contribute toward realising a specific output or outcome. Indicators can be linked to assumptions of specific ToC components. Output indicators measure changes in activities (e.g., how busy people are) or the production of deliverables such as publications. Outcome indicators reflect how impactful actions are in achieving a strategic goal (OECD, 2020b). Indicators can be either quantitative (i.e., 'how many' or 'what percentage' questions) or qualitative (i.e., the 'to what extent' questions) (Taplin *et al.*, 2013).

3.5.7 Theory of Change Narrative and Map

The narrative represents a summary of the ToC, describes the pathways of change, highlights some of the assumptions and the different components, and conveys how the initiative, policy, plan, or institution intends to make a difference or achieve a specific aim. The purpose of the narrative is to succinctly convey how the key components of the ToC are linked and function as an integrated whole (Anderson, 2004a; 2004b; Vogel, 2012; Taplin *et al.*, 2013; Stein & Valters, 2012; UNDG, 2017).

The ToC map constitutes a visual presentation of the various ToC components of the initiative or subject matter (Auriacombe, 2011; Vogel, 2012; Taplin *et al.*, 2013; Stein & Valters, 2012; UNDG, 2017; OECD, 2020a; Jacob *et al*., 2020). It reflects all the ToC components of interconnected boxes and provides a quick visual overview of the change process that will achieve the desired impacts and outcomes.

A ToC narrative and map for tiering in EA in South Africa will be discussed and presented in further detail in Chapter 4 to follow.

CHAPTER 4: THEORY OF CHANGE NARRATIVE FOR EA TIERING IN SOUTH AFRICA

This chapter contributes to achieving research objective 2. It presents a graphic depiction, also referred to as a ToC map, that reflects the relationship between all the ToC components applicable to EA tiering in South Africa, but specifically viewed from an EIA perspective. An overview of tiering components and the ToC narrative for EA tiering in South Africa is presented (section 4.1), followed by a discussion on the various ToC components applied to the South African context (section 4.2).

4.1 Overview

In this chapter, the need for evidence-based, tiered PPPPs and tiered EAs that inform them is advanced using the ToC concept to build an inner logic (or a logic framework) for how tiered EAs work in South Africa.

The narrative describes how the different components of the EIA system function within the context of the EA tiering in South Africa. This narrative is based on the ToC map introduced in the previous section that describes the different system components of the EIA system, i.e., design, inputs, activities, outputs, as well as outcomes and impacts, within the context of EA tiering (described in the subsequent paragraphs of this chapter). These components (also visually presented in Figure 4-2) address the following key questions:

- Design component – How is EIA incorporated into tiering in the EA system?
- Input component – What are the prerequisites for conducting an EIA within a tiered EA?
- Activity component – What actions are required to conduct an EIA within the context of tiering in EA?
- Output component – What are the deliverables of an EIA within the context of tiering in EA?
- Outcome component – What are the outcomes of an EIA, in the context of tiering in EA, aim to achieve immediately and over an intermediate term?
- Impact component - What is the ultimate long-term impact that an EIA aims to achieve within the context of tiering in EA?

The ToC narrative (also visually presented in Figure 4-2) for the functioning of EIA within a tiered EA system in South Africa can be described as follows:

> *An adequate institutional context exists in the form of legislation, policies and institutional arrangements that provide tiered environmental assessment information, to inform and guide*

EA processes [(Assumptions 1 and 2](design component). Adequate human resources and other institutional resources such as information, time, finances, and skills are available to implement tiering in EA. Environmental impact assessment (EIA), as the lowest tier of EA in South Africa is informed by credible and current strategic contexts that are supported by all stakeholders [(Assumptions 3, 4, 5, 6, 7, and 8)] (input component) that are required to conduct, participate in, or review EIA processes (activity component). Conducting these EIA processes results in EIA reports as deliverables and the review thereof produces decisions (output component), to achieve tiered, aligned, [(Assumptions 9 and 10)] evidence-based, well-supported, sustainability-led decision-making [(assumption 11, 12 and 13)] (outcome component). These decisions will contribute toward the progressive realisation of the environmental right contained in Section 24 of the Constitution and also contribute to cooperative environmental governance [(Assumptions 14 and 15)] (impact component).

4.2 Tiering in environmental assessment in South Africa viewed from an EIA perspective

Tiering, in general, constitutes a series of interconnected and aligned policies, plans and programmes (PPPs) (Lee & Wood,1978), and projects can be added as the fourth component (i.e., PPPPs) – see Chapter 2 for further discussion. The hierarchy of PPPPs transposes visions, principles and strategic objectives to site-specific measurable outcomes and outputs. The interconnectedness of PPPPs is informed by tiers of EAs. This research focuses on critically analysing tiering in EA, viewed from a project-level EIA perspective, and how EIA, as the lowest tier of EA, interfaces with the broader EA, planning, policy and legislative context.

Consistent with this notion of tiering, EA in South Africa is broadly characterised by three tiers: 1) the legislation and policy context; 2) strategic level assessments and/or environmental planning frameworks; and 3) projects that are informed by EIAs (see Figure 4-1). The Environmental Impact Assessment and Management Strategy for South Africa (EIAMS) (DEA, 2014) reflects on the interconnectedness of these tiers by highlighting that SEAs and EMFs (as the primary strategic EA/planning instrument in South Africa) are better suited to capture and respond to strategic impacts, including cumulative impacts. The EIAMS regards SEAs and EMFs as important in providing strategic contexts that facilitate the increased realisation of sustainable development outcomes at project-level EIA processes.

The reference to both EA and environmental planning in this section is based on how environmental planning is defined in the EIAMS (DEA, 2014):

"Environmental planning relates to the creation of a strategic environmental context for decision making and performance monitoring which ensures that communities can achieve sustainable development through the wise use of resources (inclusive of land) in a way that is good for ecosystems and society. Environmental planning plays an important role in bridging the gap between strategic national objectives and setting and implementing local objectives to achieve sustainable development outcomes on the ground…… strategic environmental planning is linked to project level assessment and reporting by providing the strategic context against which such assessment and reporting is to be measured. As such, environmental planning is ideally suited for the introduction of sustainability-led thinking by assisting with the planning for a 'desired state' and determining sustainability objectives, indicators and targets. Currently, Strategic Environmental Assessment (SEA) and Environmental Management Frameworks (EMFs) are the two key instruments used in strategic environmental planning." (DEA, 2014: 84).

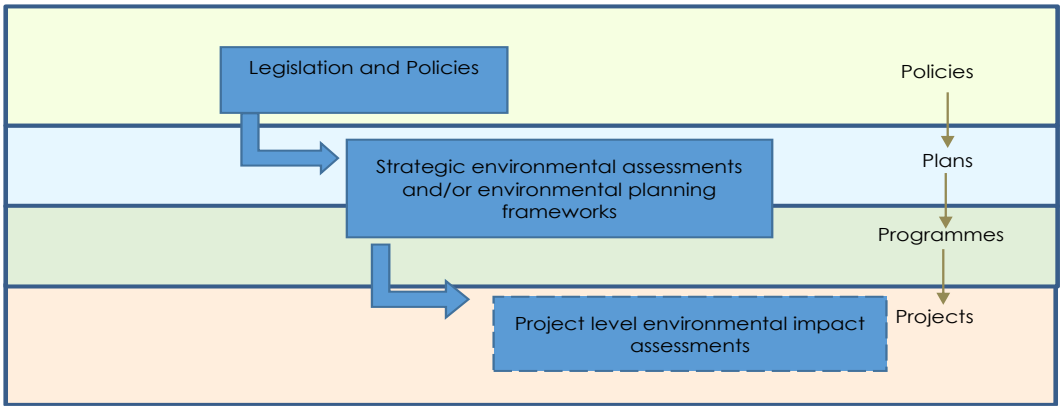

Figure 4-1: Environmental assessment tiering in South Africa

This chapter specifically developed a ToC map, a logical framework, for the functioning of an EIA within a tiered EA system in South Africa. The logical framework was used to develop an evaluation framework. The latter was used to review how the EIA system functions in practice within the context of tiering in EA in the country. The ToC map (see Figure 4-2 below) is based on the typical components of a results-based management pyramid, depicted in Figure 3-2.

The information contained in the ToC map was informed by the review of South African literature on EA, relevant legislation and policies, and includes the following:

- The different **ToC components** for EIAs (or an EIA system) within an EA tiering system in South Africa.
- The **relationships** (causal logic) between the different ToC components from the design of the EIA system within EAs tiering to the desired impact it aims to achieve.

- The **assumptions** intrinsic to the logic framework of how an EIA system functions within the context of tiers of EA. To understand how the EIA system operates within the context of tiered EAs, it is essential to engage in the underlying assumptions that support the logic framework.

The narrative for the ToC map is described in Section 4.1. A detailed discussion of the various TOC components follows below.

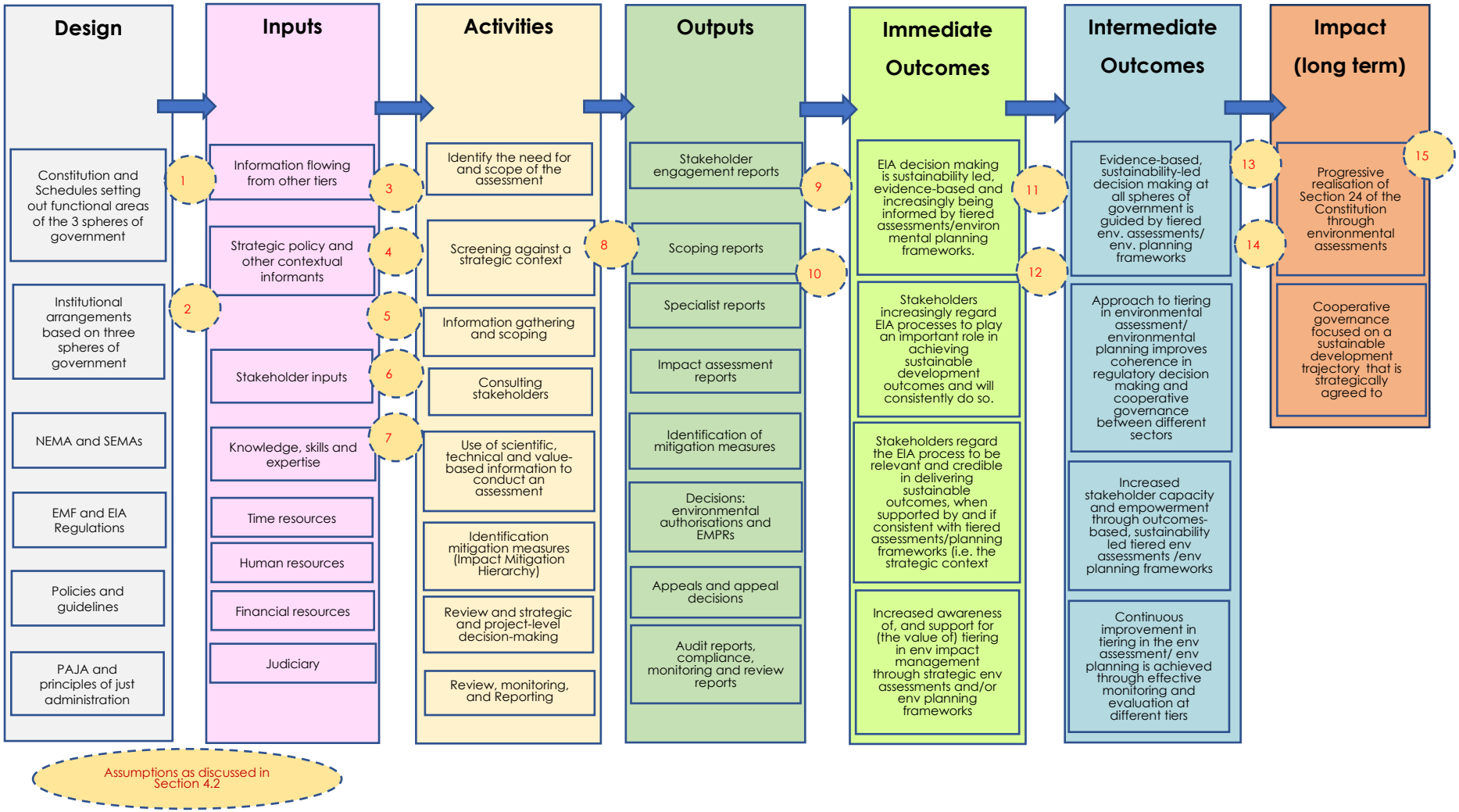

Figure 4-2: ToC map for EIA processes within the tiered EA system in South Africa

4.2.1 Design component – contextual policy and legislative framework

As highlighted by Bond *et al.* (2022), many contextual factors influence different dimensions of the effectiveness of EAs in achieving their goals. They can act as enablers or barriers. This section deals with some of the contextual elements listed by Bond *et al.* (2022) that are relevant to the South African context.

The South African Constitution (South Africa, 1996) is the supreme law of the country. It established three independent yet interrelated spheres of government - i.e., national, provincial and local government. Schedules 4 and 5 of the Constitution set out the constitutional mandates (legislative and functional areas) of the three spheres. The functional area related to the 'environment' is included as a concurrent provincial and national mandate, meaning that both national and provincial governments can draft legislation related to the environment and have executive power to implement such legislation. Importantly, there is a difference between constitutional mandates and constitutional responsibility towards the environment (and sustainability). In terms of section 24 of the Constitution, all organs of state are responsible for executing their mandates in an environmentally responsible manner. For example, municipalities (local governments), in exercising their constitutional mandate of municipal planning, have the responsibility to consider the effect of municipal planning on the environment. Put differently, municipalities have the responsibility to perform municipal land-use planning in an environmentally responsible, sustainable manner. This constitutional framework is particularly relevance in understanding how EIAs, SEAs and EMFs are approached at different tiers (Kidd *et al*., 2018).

As highlighted earlier, EA systems differ between countries based on diverse statutory and other governance and institutional factors that shape how the environment, EA and sustainability are defined (Morrison-Saunders & Retief, 2012; Monteiro *et al*., 2018). In particular, 'environment' is defined differently between countries, along a continuum that ranges from a predominant biophysical to a broad sustainability perspective (Hattingh, 1999; Morrison-Saunders & Retief, 2012). In South Africa specifically, the "environment" is defined in legislation as:

"… the surroundings within which humans exist and that are made up of -

(i) the land, water and atmosphere of the earth;

(ii) micro-organisms, plant and animal life;

(iii) any part or combination of (i) and (ii) and the interrelationships among and between them; and

(iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing" (South Africa, 1998a)

Based on the above definition of 'environment', South Africa employs a broad sustainability focus on EA, including biophysical as well as socio-economic considerations (Hattingh, 1999; Morrison-Saunders & Retief, 2012; Retief, 2013; Kidd *et al*., 2018).

4.2.1.1 The environmental legislative landscape

The NEMA (South Africa, 1998a), as the primary legislation framework governing environmental management, creates an enabling legal framework for both strategic and project-level EAs in South Africa (Kidd *et al*., 2018). Over and above the NEMA, various Specific Environmental Management Acts (SEMAs) provide the legislative context for different functional areas such as biodiversity, coastal management, climate change and waste management. This legislative landscape is depicted in Table 4-1

Functional (specialist) area	**Legislation**	**Provide for project-level assessment**	**Provide for strategic-level assessment**	**Provide for functional-specific environmental planning (PPPs)**	**Reference**
Overarching environmental legislation	National Environmental Management Act, 1998 (Act No 107 of 1998)	Yes	Yes	Yes	South Africa (1998a).
Water resource management	National Water Act, 1998 (Act No. 36 of 1998)	Yes		Yes	South Africa (1998b).
	Water Use Regulations	Yes			
Heritage resources management	National Heritage Resources Act (NHRA),1999 (Act No. 25 of 1999)	Yes		Yes	South Africa (1999).
Protected areas management	National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)			Yes	South Africa (2003).
Air quality management	National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)	Yes		Yes	South Africa (2004a).
Biodiversity management	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2000)	Yes		Yes	South Africa (2004b).
Coastal management	National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008)	Yes		Yes	South Africa (2008a).
Waste and chemicals management	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)	Yes		Yes	South Africa (2008b).
Environmental Impact	Environmental Impact Assessment Regulations, 2014	Yes			South Africa (2014a).
	Environmental Management Framework Regulations, 2010		Yes	Yes	South Africa (2010)

Assessment and Management[30]					
Climate Change	Climate Change Act, 2024 (Act No. 22 of 2024)			Yes	(South Africa 2024c)

Table 4-1: Legislation governing different functional areas in environmental management

The development of strategies, policies and plans is provided for differently in the above legislation per functional area. This research does not provide a detailed analysis of the tiering of PPPPs in the different functional areas within environmental management (as reflected in Table 4-1). However, it focuses on *EA*, as enabled through Chapter 5 of the NEMA (South Africa, 1998a). In this research, the development of policies, strategies, plans and programmes in the different functional areas is broadly referred to as 'functional-specific environmental planning' where relevant.

4.2.1.2 Integrated environmental management.

The NEMA also provides for integrated environmental management (IEM)[31] and forms part of the design component of the ToC for EA (see Figure 4-2). IEM is purposed to "…*promote the application of appropriate environmental management tools in order to ensure the integrated environmental management of activities*" (South Africa, 1998a).[32] Importantly, the reference to "activities" is consistent with the notion of tiering insofar as it refers to "…*policies, programmes, processes, plans and projects*…" (South Africa, 1998a).[33]

The objectives of IEM in the NEMA[34] that support the notion of tiering are:

- To promote the integration of environmental management principles (often referred to as the NEMA's sustainability principles)[35] into all decision-making, which may have a significant effect on the environment.
- To identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences, alternatives /options for mitigation of activities to minimise negative impacts, maximise benefits, and promote compliance with environmental management principles.

[30] SEAs are also environmental assessment instruments but are not legislated for in South Africa (i.e., defining its purpose, setting procedures and content requirements).

[31] Chapter 5 of the NEMA (South Africa, 1998a).

[32] Section 23(1) of the NEMA (South Africa, 1998a).

[33] Section 1 of the NEMA (South Africa, 1998a).

[34] Section 23 of the NEMA (South Africa, 1998a).

[35] Section 2 of the NEMA (South Africa, 1998a).

- To ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them (i.e., evidence-based decision-making).
- To ensure adequate and appropriate opportunities for public consultation in decision-making processes that may affect the environment.
- To ensure the consideration of environmental attributes in management and decision-making that may significantly affect the environment.
- To identify and employ the different modes of environmental management instruments best suited to ensuring that a particular activity is pursued sustainably – i.e., in accordance with environmental management principles[36].

The above objectives also confirm the broad scope of EAs in South Africa, including socio-ecological and socio-economic considerations (DEA, 2014; Kidd *et al*., 2018).

4.2.1.3 Environmental assessment and other environmental management instruments:

As another informant that shapes the design component of ToC (see Figure 4-2) for EA, NEMA enables various environmental management instruments to be used for EA related to activities[37] (i.e., policies, programmes, processes, plans, or projects), including:

- Voluntary organisation or sector-based instruments;[38]
- Spatial tools or environmental management instruments;[39]
- Norms and standards;[40]
- Environmental management frameworks (EMFs);[41]
- Strategic environmental assessments (SEAs);[42]
- Environmental risk assessments;[43]

[36] Principles in terms of section 2 of the NEMA (South Africa, 1998a).

[37] "Activities" is defined in section 1 of the NEMA as "policies, programmes, processes, plans and projects identified in terms of section 24(2)(a) and (b)" (South Africa, 1998a).

[38] Section 23A(1)(a) of the NEMA. (South Africa, 1998a).

[39] Section 1 as part of the definition of environmental management instruments and 24(2)(c) and (e) of the NEMA (South Africa, 1998a).

[40] Section 24(2)(d) and section 24(10) of the NEMA (South Africa, 1998a).

[41] Section 1 as part of the definition of an environmental management instrument (South Africa 1998a), and the EMF Regulations (South Africa, 2010).

[42] Section 1 as part of the definition of an environmental management instrument (South Africa, 1998a).

[43] Section 1 as part of the definition of an environmental management instrument (South Africa, 1998a).

- Environmental feasibility assessments;[44]
- Minimum information requirements;[45] and
- Environmental impact assessments (EIAs).[46]

The abovementioned instruments include strategic-level EAs (i.e., EMFs and SEAs) and project-level assessments (i.e., norms and standards, environmental risk assessments, feasibility assessments and EIAs). Other instruments do not specifically focus on a specific tier of decision-making (e.g., environmental management instruments and minimum information requirements) or other governance mechanisms (i.e., voluntary organisation or sector-based instruments). The NEMA does not clarify the different intended uses of these various instruments or the relationships between instruments. Collectively, the NEMA and the various SEMAs make provision for more than 80 different environmental management instruments. (DFFE, 2023).

Chapter 5 of the NEMA deals with EAs as an integral part of IEM. It enables the Minister to identify activities that may not commence without environmental authorisation. Any person who wants to perform an activity identified by the Minister (also referred to as 'listed activities') must apply for environmental authorisation. Although 'activities' are defined in the NEMA to include policies, plans and processes, no activities related to policies, programmes, processes or plans have been identified (South Africa, 1998a; Kidd *et al*., 2018). To date, the activities that the Minister identified[47] only include project-level activities. The EIA Regulations (South Africa, 2014a) set out the EIA process to be followed when applying for environmental authorisation.

Currently, insofar as EA is concerned, EIA is the only mandatory EA instrument (DEA, 2014; Kidd *et al*., 2018; Alberts *et al*., 2019). The other environmental management instruments provided for in the NEMA are voluntary, for which only two (i.e., Standards and EMFs) have been expanded on by setting content requirements in legislation (South Africa, 1998a; 2010). Therefore, in contrast to the mandatory requirement for EIAs, the strategic level environmental management instruments (i.e., EMFs and SEAs) are voluntary instruments, meaning that their development and use depend on political will. SEAs, although often used in South Africa (Retief *et al*., 2021), are voluntary instruments with no legislated procedural and content requirements (Kidd *et al*., 2018). EMF development is also voluntary, but its content requirements are legally prescribed (South Africa, 2010). Once formally adopted and published, the contents of EMFs must be

[44] Section 1 as part of the definition of an environmental management instrument (South Africa, 1998a).

[45] Section 1 as part of the definition of an environmental management instrument (South Africa, 1998a).

[46] Section 24(2)(a) and(b) and EIA Regulations, 2014 (South Africa, 2010).

[47] Section 24(2)(a) of the NEMA (South Africa, 1998a).

considered by decision-making authorities when reviewing EIAs and subsequent decision-making.[48] EMFs are extensively used in South Africa (DEA, 2014; Cilliers, 2015; Retief *et al*., 2021) and are considered a priority environmental management instrument for the future (DFFE, 2023).

Apart from the requirement that EMF information be considered during EIA processes, the NEMA does not legislate for tiering in EA in South Africa or the relationship between the various environmental management instruments. In the EIA Regulations, one of the key legal provisions that exists to assist in bridging the gap between policies, strategic-level assessments and project-level assessments is the requirement to consider 'need and desirability' (South Africa, 2014a).[49] The EIA Regulations do not provide any detail on the requirements for need and desirability, but a guideline was published to guide implementation (DEA, 2017c). Through a set of questions, the guideline requires environmental impact assessment practitioners and reviewers (decision-makers) to consider the applicability of policies and plans (including SDFs and EMFs) on the EIA being conducted, and during decision-making.

An emerging trend in South Africa is to use SEAs and EMFs to create tiered levels of EA, coinciding with the development of new legislative instruments or regulatory procedures as alternatives to EIAs (Fischer, 2018; Fischer *et al*., 2019; Retief *et al*., 2021). This trend is primarily driven by the political need to streamline regulatory procedures for infrastructural development. Some of these SEAs and EMFs and their associated regulatory instruments include the following:

- The Gauteng Province developed a provincial EMF (Gauteng Province, 2022) and Standards associated with the EMF (South Africa, 2018d) to allow for certain listed activities to be excluded from the requirement to obtain environmental authorisation, provided that the implementation of such activities adheres to the Standards.

- The DFFE conducted a SEA for the Square Kilometre Array (CSIR, 2016a) and an Integrated Environmental Management Plan (IEMP) associated with the SEA to allow for certain listed activities to be excluded from the requirement to obtain environmental authorisation, provided that the implementation of such activities adheres to the IEMP (CSIR, 2016b).

- The DFFE developed several Generic Environmental Management Programmes (Generic EMPRs) to allow for certain listed activities related to the government's Programme on Working for Wetlands and the LandCare Programme to be excluded from the requirement to

[48] Regulation 2(1) of the 2010 EMF Regulations (South Africa, 2010).

[49] Regulation 2, 3, Appendix 2 and Appendix 3 of the EIA Regulations (South Africa, 2014a).

obtain environmental authorisation, provided that the implementation of such activities adhere to the Generic EMPRs (South Africa, 2021a; 2021b). These Generic EMPRs were not informed by any SEA.

- The DFFE conducted an SEA for Renewable Energy (DEA, 2015; DFFE, 2019c), in which eight (8) Renewable Energy Development Zones (REDZ) were identified. These REDZs were gazetted and included new (reduced) regulatory procedures as an alternative to the existing EIA process and were developed for renewable energy developments located in the REDZ[50] (South Africa, 2018a; 2018b).

- The DFFE conducted a second SEA for Renewable Energy (DFFE, 2019c) in which three (3) additional REDZs were identified (South Africa, 2021d) for implementation as well as the procedures to be followed when applying for environmental authorisation for electricity transmission or distribution infrastructure or large-scale wind and solar photovoltaic energy facilities in these REDZs (South Africa, 2021c). The identification of REDZ was followed by gazetting procedures to be followed when applying for or deciding on an environmental authorisation application for developing electricity transmission and distribution infrastructure when occurring in energy development zones (South Africa, 2021e).

- The DFFE conducted two (2) SEAs for the expansion of electricity grid infrastructure - the first strategic environmental assessment was finalised in 2016 (DEA, 2016) and the second in 2019 (DFFE, 2019a). The SEAs resulted in several regulatory instruments being published. In 2018, five (5) strategic transmission corridors were identified that are important for the planning of electricity transmission and distribution infrastructure, as well as procedures to be followed when applying for environmental authorisation for electricity transmission and distribution expansion in these corridors (South Africa, 2018c). In 2019, a generic environmental management programme (EMPr) associated with an application for environmental authorisation for substations and overhead transmission and distribution electricity transmission infrastructure (South Africa, 2019a), was published. The EMPr is applied to such infrastructure when developed within or outside the strategic transmission corridors.

- The DFFE developed two Norms in terms of the NEMA for solar energy developments and battery storage facilities (South Africa, 2024a; 2024b). The importance of the above law reform is that the establishment of solar power and battery storage facilities, including

[50] Procedures to be followed in applying for environmental authorisation for large-scale wind and solar photovoltaic energy development activities identified in terms of section 24 (2)(a) of the National Environmental Management Act, 1998, when occurring in geographical areas of strategic importance (i.e., REDZs).

associated infrastructure, is excluded from the requirement to obtain environmental authorisation, subject to adherence to the Norms (rules). These Norms were not preceded by a strategic-level assessment but were based on the National Web-Based Environmental Screening Tool, a GIS mechanism that maps environmental sensitivities for various environmental themes.[51]

- The KwaZulu-Natal Province conducted a SEA (Felton *et al*., 2021) in support of developing an environmental instrument to allow for certain listed activities (associated with repairing flood damage to community infrastructure) to be excluded from the requirement to obtain environmental authorisation, provided that the implementation of such activities adhere to the requirements set out in the instrument. (South Africa, 2024d).

- The Western Cape Province developed an EMF for the Sandveld (a specific geographical area) to facilitate agricultural development whilst protecting natural resources (South Africa, 2019c). The EMF was followed by the adoption of a Standard as a legal mechanism to allow for certain listed activities associated with the cultivation of land to be excluded from the requirement to obtain environmental authorisation, provided that the implementation of such activities adheres to the requirements set out in the Standard. (South Africa, 2024e).

All the above SEAs and EMFs, as well as the regulatory instruments, were developed voluntarily. The development of regulatory instruments was driven by the call for regulatory efficiency to support infrastructural development (DEA, 2015; Cape *et al*., 2018; DFFE, 2019c; Fischer *et al.*, 2019; Retief *et al*., 2021; Alberts *et al*., 2024). The above regulatory instruments were preceded and informed by EMFs or SEAs, except for the development of the Generic EMPRs and Norms. Although the initiation was voluntary, it represents examples of tiered EAs and decision-making.

4.2.1.4 Strategic Environmental Assessments (SEAs)

In South Africa, the use of SEAs persisted over the last 25 years, regardless of their voluntary status (Retief *et al.,* 2007; Fischer *et al*., 2019; Retief *et al*., 2021). Retief *et al*. (2021) reflected on the downward trend in SEAs being conducted since 2006. They noted that it coincided with the emergence of EMFs as a similar and related strategic-level EA instrument in 2010. SEAs in South Africa differ from international practices insofar as it is used as an environmental planning instrument rather than an assessment instrument (Rossouw *et al*., 2000; Fischer *et al*., 2019;

[51] The "screening tool" refers to the National Web-Based Environmental Screening Tool accessible on: https://screening.environment.gov.za.

Retief *et al*., 2021). Further to SEAs and EMFs, the land use planning legislation (South Africa, 2013) also requires a municipal spatial development framework must include a "*strategic assessment of the environmental pressures and opportunities within the municipal area, including the spatial location of environmental sensitivities, high potential agricultural land and coastal access strips where relevant*".[52] Retief *et al*. (2021) also noted that the institutional context for South Africa, with its diverse definitions and approaches to SEAs, has resulted in the development of many 'para-SEAs' (see Dalal-Clayton & Sadler, 2005). Examples include SDFs, State of Environmental Reporting,[53] and Catchment Management Strategies.[54]

Therefore, as a key informant to the design component of the ToC for EA (see Figure 4-2), SEAs in South Africa are being implemented widely using diverse approaches and applications without the institutional arrangements (especially legislative provisions) being in place (Retief *et al*., 2021).

4.2.1.5 Environmental Management Frameworks (EMFs)

Another contributor to the design component of ToC (see Figure 4-2) for EA is Environmental Management Frameworks. The notion of 'environmental management frameworks' was already included in the White Paper on Environmental Policy for South Africa in 1998 (South Africa, 1998c:56), where the following is stated:

"*Economic policies and strategies and spatial development plans impact on the environment and must be dealt with in the context of IEM. In order to ensure sustainable development, environmental issues have to be integrated into all development processes at all levels of decision making. Mechanisms and instruments to integrate environmental concerns include:*

- *decision support instruments*
- *……..*
- *environmental management frameworks*".

Therefore, since its inception, EMFs have been regarded as a mechanism to ensure sustainable development and that environmental issues are integrated into all development processes at all levels of decision-making.

[52] Section 21j of the SPLUMA (South Africa, 2013).

[53] Section 16A of the NEMA (South Africa, 1998a).

[54] Chapter 2, Part 2 of the National Water Act (South Africa, 1998b).

In the National Framework for Sustainable Development (2008), the following is stated:

"*Planning for sustainable development: ensure greater alignment of sustainability criteria in all levels of integrated and spatial planning, as well as in project formulation and selection checklists by public and private funders. Specific planning frameworks that should strengthen integration of sustainability criteria are the Provincial Growth and Development Strategies, Integrated Development Plans, Local Economic Development strategies, and associated Spatial Development and Environmental Management Frameworks*" (DEAT, 2008a:34). It should be noted that the relationship between SDFs and EMFs is reflected as complementary, and not substitution - i.e., EMFs is not considered as a component to SDFs and that SDFs are not an alternative to EMFs.

Therefore, EMFs are one of the environmental management instruments provided for in the NEMA and are unique to South Africa (see Chapter 2). EMFs are regulated by separate legislation, the EMF Regulations (South Africa, 2010), supported by guidelines (DEA, 2010). EMFs are voluntary instruments, meaning there is no legal requirement to develop EMFs. An EMF is a geographical area-based instrument that interrogates the extent, sensitivity, interrelationship and significance of environmental attributes within a specific geographical area, mostly coinciding with municipal boundaries (Cilliers, 2015; Cilliers & Retief, 2017). Based on these environmental attributes, EMFs identify Environmental Management Zones that promote appropriate development activities, as well as environmental management guidelines for the different zones. Once the Minister or provincial MEC formally adopts an EMF[55] and it is published in a government gazette, it must be considered by decision-making authorities when reviewing applications for environmental authorisation.[56] As such, the legislation provides a tiering relationship between EMFs and EIAs.

The contents of an EMF (South Africa, 2010) must include -

> *"(a) identify by way of a map or otherwise the geographical area to which it applies;*
>
> *(b) specify the attributes of the environment in the area, including the sensitivity, extent, interrelationship and significance of those attributes;*
>
> *(c) identify any parts in the area to which those attributes relate;*
>
> *(d) state the conservation status of the area and in those parts;*
>
> *(e) state the environmental management priorities of the area;*

[55] An EMF is adopted by the Minister responsible for environmental management or a provincial Minister responsible for environmental management (referred to as a Member of the Executive Council, or MEC). The adoption of an EMF is formally published (gazetted). (South Africa, 2010).

[56] Regulation 2(1) of the 2010 EMF Regulations (South Africa, 2010).

(f) indicate the kind of developments or land uses that would have a significant impact on those attributes and those that would not;

(g) indicate the kind of developments or land uses that would be undesirable in the area or in specific parts of the area;

(h) indicate the parts of the area with specific socio-cultural values and the nature of those values;

(i) identify information gaps;

(j) indicate a revision schedule for the environmental management framework; and

(k) include any other matters that may be specified." (South Africa, 2010).

As highlighted by Retief *et al*. (2021), EMFs are similar to SEAs, and as strategic-level EA instruments, they fulfil similar roles. This relationship between SEAs and EMFs and their similar roles is also highlighted in the South African Strategic Environmental Assessment and Strategy 2014 (DEA, 2014).

4.2.1.6 Environmental Impact Assessments (EIAs)

EIAs are the most extensively used EA instruments in South Africa and are well-regulated in terms of the NEMA (South Africa, 1998a) and the EIA Regulations (South Africa, 2014a).

In terms of the NEMA, various provisions shape how EIAs are conducted and reviewed, including:

- The principles of environmental management in the NEMA[57] to promote sustainability and apply to environmental decision-making in all spheres of government, including EA. These principles include -
  - avoiding negative impacts on the environment;
  - managing, minimising, and mitigating impacts to acceptable levels;
  - promoting conservation;
  - securing ecologically sustainable development and use of natural resources; and
  - balancing economic and social development with environmental protection.
- These principles apply to decision-making in all organs of state that may significantly affect the environment, serve as the general framework within which EIAs are conducted, and provide guidance to any organ of state that must exercise any function and when taking any decision concerning the protection of the environment.

[57] Section 2 of the NEMA (South Africa, 1998a)

- The principles apply to all tiers of EA and decision-making. Importantly, the relevant provisions in the NEMA related to these principles state 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*" (South Africa, 1998a).[58] This emphasises the broad definition of 'environment' beyond a biophysical focus (Morrison-Saunders & Retief, 2012; Kidd *et al*., 2018).
- It is also worthwhile to highlight some of the principles also point towards tiering in PPPs, EA and decision-making:

  "*Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.*[59]

  There must be intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment.[60]

  Global and international responsibilities relating to the environment must be discharged in the national interest" (South Africa, 1998a).[61]

- The Integrated Environmental Management (IEM) objectives in the NEMA[62] are directly relevant to tiering in EA. This includes the objective 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 principles of environmental management ….*", where 'a*ctivities*' is defined to mean "……. *policies, programmes, processes, plans and projects*" (South Africa, 1998a).[63]
- The minimum requirements for EIAs[64] set out procedures for investigating, assessing and communicating the potential consequences or impacts of activities on the environment, specifically related to EIAs and their associated applications for environmental authorisation. It refers to and reiterates that the abovementioned environmental management principles and

[58] Section 2(2)(4)(i) of the NEMA (South Africa, 1998a)

[59] Section 2(4)(c) of the NEMA (South Africa, 1998a).

[60] Section 2(4)(l) of the NEMA (South Africa, 1998a).

[61] Section 2(4)(n) of the NEMA (South Africa, 1998a).

[62] Section 23 of the NEMA (South Africa, 1998a).

[63] Section 1 of the NEMA (South Africa, 1998a).

[64] Section 24(4)(a) and (b) of the NEMA (South Africa, 1998a).

objectives apply to all EIAs and environmental decision-making (i.e., environmental authorisation).[65]

The EIA Regulations (South Africa, 2014a) set out extensive procedural requirements, specify roles and responsibilities of relevant stakeholders, set content requirements for all stages of the EIA process and its deliverables, as well as regulating the review thereof and decision-making. Three listing notices were published under the NEMA, defining specific listed activities to be regulated and stipulating that a person may not commence with such activities without applying for environmental authorisation[66]. Listing Notices 1 (South Africa, 2014d) and Listing Notice 3 (South Africa, 2014f) contain lists of basic assessment activities, which require an applicant applying for environmental authorisation to undertake a basic assessment in support of the application. Listing Notice 1 contains listed activities that apply to the whole country, and Listing Notice 3 contains activities that apply to specific geographical areas. Listing Notice 2 activities (South Africa, 2014e) require applicants to undertake scoping and environmental impact reporting (IER) processes in support of applications for environmental authorisation. Therefore, South Africa has a statutory screening process of positive lists (Wood, 2003) that, to a large extent, predetermines the level of assessment (i.e., either a basic assessment or a scoping/IER process) to be undertaken based on a predetermined list of activities that are triggered by development proposals. However, following either of these two assessment processes does not fully determine the level of assessment required, and a scoping process is still to be conducted by EA practitioners (EAPs) within the EIA process (Kidd *et al*., 2018).

The fundamental difference between a basic assessment process (Listing Notice 1 and 3 activities) and a scoping/EIR process (Listing Notice 2 activities) is that the former is conducted for activities with anticipated lesser impacts, and as such, the scoping and assessment of impacts are combined into a basic assessment report, subjected to a single public participation process. The scoping/EIR process is conducted for activities with more significant anticipated impacts. As such, the scoping and impact assessment phases are separated, resulting in a longer process, with both phases subjected to public participation (South Africa, 2014a).

An emerging characteristic of the EIA system in South Africa since the revision of the EIA process in 2017 is the presence of a pre-application phase that precedes the submission of a formal application for environmental authorisation to conduct Listing Notice 1, 2, or 3 activities triggered by a development proposal. Pre-application consultation is done in terms of the requirement that

[65] Sections 2 and 23 of the NEMA (South Africa, 1998a).

[66] Sections 24(2)(a) and (b) of the NEMA (South Africa, 1998a).

the authority must guide applicants.[67] Kidd *et al*. (2018) briefly refer to the pre-application consultation with authorities as an 'unspecified contribution' to the cost of EIA processes in South Africa. The increased demand for pre-application consultation is reflected in the need for DFFE (as a decision-making authority) to guide in this regard.[68]

In a review study of the EIA system in South Africa that was completed in 2019 (DPME/DEA, 2019), several recommendations were made that required policy and law reform. The review study aimed to answer three research questions:

- To what extent has the EIA process been efficiently implemented?
- To what extent has the EIA process effectively achieved its objectives for sustainable development?
- What key insights, lessons, and recommendations are offered to improve the EIA process?

One of the recommendations of the review study (DPME/DEA, 2019) was for "…. *a referral system which requires interpretation and discretion by government on the need for and extent of EIA required on a case by case basis for lesser impact activities (typically listed in the current listing Notice 1). This approach is common internationally and reflects the options for exemption and/or exit after scoping under the previous ECA regime. The current initiatives around EMF and delisting as well as Listing Notice 3 could also contribute*" (DPME/DEA, 2019:42). The review study's recommendation highlighted that the lack of a clear policy and legislative context on tiering in EA is a significant challenge: "[t]*he lack of up to date policy guidance in some sectors exacerbates the difficulty in contextualising the appropriateness of development proposals (i.e. understanding the timing and need for development and to scope the key issues). Location considerations, as one of the need and desirability considerations, are slightly better considered in instances where IDPs, SDFs, SEAs and EMFs provide a spatial context*" (DPME/DEA, 2019:43).

[67] Regulation 8 of the EIA Regulations (South Africa, 2014a).

[68] See the information requirements for a pre-application with DFFE, available at: Section A: Background information (energyoss.gov.za).

4.2.1.7 Guidance and Administrative Prudence:

Various guidelines inform EAs in South Africa (DEA, 2014; Kidd *et al*., 2018; Alberts *et al*., 2019) and are contributors to the design component of the ToC for EA. For EIAs, this includes guidance on both procedural and substantive matters when conducting EIAs, the review thereof, and decision-making. This includes guidelines on public participation, 'need and desirability' considerations, and specialist involvement in EIA processes (DEA, 2014). Importantly, however, guidelines cannot be applied as rigid rules, but their applicability in any situation must be carefully considered based on the relevant facts and information of every case. However, deviating from a guideline must be based on reasoned motivations (Kidd *et al*., 2018).[69]

The 'Guideline on Need and Desirability' (DEA, 2017c) is particularly relevant to tiering in EA and decision-making. The following paragraph in the guideline is of particular relevance: "……*What is needed and desired for a specific area should primarily be strategically and democratically determined beyond the spatial extent of individual EIAs. The strategic context for informing need and desirability may therefore firstly be addressed and determined during the formulation of the sustainable development vision, goals and objectives of Municipal Integrated Development Plans ("IDPs") and Spatial Development Frameworks ("SDFs") during which collaborative and participative processes play an integral part, and are given effect to, in the democratic processes at local government level"* (DEA, 2017c:8).

The guideline also states that "……. [w]*hen 'need and desirability' must be considered as part of an EIA process, the content of the IDPs, SDFs, EMFs and other relevant plans, frameworks and strategies must be taken into account when considering the merits of each application. Whether a proposed activity will be in line with or deviation from the plan, framework or strategy per se is not the issue, but rather the ecological, social and economic impacts that will result because of the alignment or deviation. As such, the EIA must specifically provide information on these impacts in order to be able to consider the merits of the specific application. Where a proposed activity deviates from a plan, framework or strategy, the burden of proof falls on the applicant (and the Environmental Assessment Practitioner) to show why the impacts associated with the deviation might be justifiable. The need and desirability of development should be measured against the abovementioned contents of the IDP, SDF and EMF for the area, and the sustainable development vision, goals and objectives formulated in, and the desired spatial form and pattern of land use reflected in, the area's IDP and SDF. While project-level EIA decision-making*

[69] Kidd *et al*. (2018) discuss various guidelines that have been published since 1992 to provide guidance to environmental assessments, including guidelines published in terms of section 24J of the NEMA (South Africa, 1998a) pertaining to the EIA process.

therefore must help us stay on course by finding the alternative that will take us closer to the desired aim/goal, it is through Integrated Development Planning (and the SDF process) that the desired destination is firstly to be considered and the map drawn of how to get there." (DEA, 2017c:8).

The 'Guideline on Need and Desirability' (DEA, 2017c) reflects the clear intention of tiering by -

- requiring that EIA outcomes should be measured against the strategic environmental context - i.e., conformance to the strategic context provided and performance when EIA outcomes are measured against the stated strategic objectives); and
- requiring the user (in conducting EIAs and the review thereof) to provide reasons and reasoning related to conformance – i.e., contextualising the EIA within its broader context.

In addition, the 'Guideline on Need and Desirability' is also closely correlated with the principles contained in section 2 of the NEMA and other policy imperatives such as the National Development Plan (NDP) (National Planning Commission, 2012). However, the NEMA principles and policy directives are strategic and often challenging to apply to project-level EIAs, and the guideline facilitates the application of these principles and policies in EIAs.

Over and above the NEMA and the EIA Regulations, the Promotion of Administrative Justice Act, 2000 (PAJA) (South Africa, 2000b) is also relevant to the EAs. Decision-makers must comply with the NEMA, including considering environmental management principles[70] and integrated environmental management objectives[71]. They must also adhere to the procedural requirements set out in the EIA Regulations. They must also apply the principles in the PAJA to the EIA process (Kidd *et al*., 2018; Alberts *et al*., 2019), which includes the requirement that in taking administrative actions (i.e., decisions) affecting any person (e.g., applicants, landowners, regulatory authorities and the public), the decision-maker must give:

- adequate notice of the nature and purpose of the proposed administrative action;
- a reasonable opportunity to make representations;
- a clear statement of the administrative action;
- adequate notice of any right of review or internal appeal, where applicable; and
- adequate notice of the right to request reasons (South Africa, 2000b).[72]

[70] Section 2 of the NEMA (South Africa, 1998a).

[71] Section 23 of the NEMA (South Africa, 1998a).

[72] Section 3 of the PAJA (South Africa, 2002b).

In the case of any administrative action affecting these stakeholders, decision-makers must take appropriate steps to communicate the administrative action to those likely to be materially and adversely affected by it. The PAJA requires procedural fairness and that members of the public, organs of state, or any other stakeholder who may be affected must be given an opportunity to participate.

For decision-making to be lawful, the PAJA dictates that organs of state may only make decisions if empowered through legislation and if all the pre-conditions for the exercise of such powers have been met. If not, such decisions will be *ultra vires*, meaning that they exceed the powers granted by the enabling legislation. It follows that such decisions will be unlawful.

Consistent with the PAJA, the EIA regulations set clear process and procedural requirements, including public participation requirements. It also sets requirements for decision-making, including notification of appeal provisions, and that the final decision must contain the reasons for the decision (South Africa, 2014a). No such requirements are set in the NEMA for strategic-level assessment and decision-making.

Insofar as tiering in EA is concerned, policies, strategic-level information contained in EMFs, and guidelines become relevant considerations that must be taken into account at all stages of an EIA process and decision-making[73]. No such requirement is set for SEAs.

The requirements for fair and just administration are also reflected in the increasing body of case law, where decisions are being taken on legal review. Two such examples are:

In a judgment of the High Court pertaining to an application for the review and setting aside of the decision by the Provincial Minister for Local Government, Environmental Affairs and Development Planning, Western Cape, to dismiss Lezmin2588 CC's appeal for the rezoning and subdivision of Erf 1556, Hout Bay, the court found that the Minister's decision was procedurally unfair and that he failed to take relevant considerations into account, particularly the EIA submitted by the applicant. The court emphasised the importance of procedural fairness and the need for the decision-makers to consider all relevant information before making a decision and that this must be conveyed in the reasons for the decision, but that such reasons do not only refer to the facts

[73] Strategies, plans, policies and guidelines must be considered during the EIA process and decision-making in terms of Section 24O of the NEMA (South Africa, 1998a) and regulations 16 and 18 of the EIA Regulations (South Africa, 2014a).

and circumstances which form the factual foundation of the decision but also the reasoning process of the decision-maker by which he arrived at a decision.[74]

In a judgment of the High Court, an applicant, Clairison's CC, applied for judicial review under the Promotion of Administrative Justice Act (South Africa, 2000b) against the MEC for the Local Government's decision to dismiss their appeal for environmental authorisation. The case concerns the development of a retirement village on a property in Plettenberg Bay. The application was initially approved by the previous Minister, but was later refused by the department on environmental and municipal planning grounds. The court found that the Minister failed to consider the factual consequences of the structure plan amendments and the surrounding land usage. The court held that the Minister should have considered municipal planning considerations in the context of environmental authorisation, but he failed to properly weigh these factors, meaning that relevant information was not considered during decision-making.[75]

4.2.1.8 Tiering in EA captured in policies

In reflecting on the design component for tiering in EA in South Africa (see Figure 4-2, it is important to note that tiering in EA is not dealt with as a specific subject matter in policies related to the environmental sector. The policy context for environmental management in general (excluding the policies and strategies developed in terms of the SEMAs that apply to specific functional areas such as biodiversity and coastal management) has not been updated for several years:

- The National Environmental Policy dates to 1998 (South Africa, 1998c). The policy set the goal to "…*conduct regular reviews of the relevance and appropriateness of all government policies, strategies, plans, programmes, legislation, norms and standards with an impact on the environment in order to update them in line with progress in environmental management*". However, no such requirement is set in legislation to achieve this goal. Whilst SEA is acknowledged as an environmental assessment instrument of the above policy instruments, no legal requirement is set in legislation (NEMA) to conduct SEAs.

[74] Lezmin 2588 CC v The Provincial Minister for Local Government, Environmental Affairs & Development Planning & Others (WC High Court, Case No. 21935/2009) (Judge Blignault: 19 Oct 2010) (Judge Blignault, 2010).

[75] MEC for Environmental Affairs and Development Planning v Clairison's CC (WC High Court, Case No. 26165/2010) (Judge Cloete, 2012).

- The National Framework for Sustainable Development was drafted in 2008 (DEAT, 2008a). It does not address tiering in EA.
- The National Strategy for Sustainable Development was drafted in 2011 (DEAT, 2011). It also does not address tiering.
- The most recent policy document with specific relevance to EA is the Environmental Impact Assessment and Management Strategy for South Africa (EIAMS) (DEA, 2014). The EIMS does not refer to 'tiering', but the information it contains is of direct value to tiering. For example, the following is stated:

  "*The progression will enable detailed planning, with potentially fewer assessments; moreover impact management can be achieved using more activity specific tools such as EIAs and EMPs. Activity specific tools are typically more reactive, and the focus is on prevention at best but mostly minimization. This means that other, broader instruments are required to address issues such as sustainability targets, avoidance of environmental impacts, need and desirability of activities within certain environmental zones, cumulative impacts, conservation, biodiversity conservation, setting acceptable limits for trade-offs and identifying offsets, and addressing other issues where the overall objective is not just protecting the status quo but also potentially improving the state of the environment*" (DEA, 2014:135).

However, the above policies are all more than 10 years old. It is also noted that since the EIAMS was finalised in 2014, there has been no follow-up initiative to reflect on its implementation, and no policy reform flowed from it. Also, no reference is made to the EIAMS in an unpublished draft report, 'The draft 2023/24 NEMA Planning Regime Review Report' (DFFE, 2024), reflecting a low level of awareness and acknowledgment of the EIAMS. Overall, the policy context for tiering in EA is outdated.

4.2.1.9 Assumptions related to the design component

Assumptions regarding the design component related to tiered EA and decision-making:

Assumption 1: Policies and the legislative framework make clear provision for tiered environmental assessments and/or tiered decision-making in support of establishing a credible, evidenced-based strategic context for EIAs (and other project-level assessment and decision-making).

Assumption 2: Authorities are committed to developing institutional arrangements required to establish strategic context (tiers) to support project-level assessments and decision-making.

4.2.2 Input component - inputs required into EIA processes

Contextual information informing EIA processes includes information flowing from legislation and policies, strategic-level assessments and other EIAs, stakeholder inputs, skills, competencies, as well as financial and time resources. These inputs are discussed below (also see Figure 4-2).

4.2.2.1 Information flowing from the legislation and policy context

Legislation and policies contain requirements and information that influence how EIAs are conducted, the application of the impact mitigation hierarchy, the identification of issues and concerns, the selection of alternatives, and the assessment of impacts (i.e., the input component - see Figure 4-2).

International policies are strategic contextual informants to EA processes and include strategic documents such as the United Nations Sustainable Development Goals (UN, 2015). These are often linked to international treaties and agreements such as:

- the Wetland Convention[76], resulting in the drafting of a National Wetland Management Framework (DFFE, 2021b), or
- climate change, leading to the promulgation of the Climate Change Act (South Africa, 2024) to strengthen sector coordination and provide a policy context and decision-making framework to enable South Africa to meet the commitments under the Paris Agreement (UN, 2016).[77]

At a national policy level, there are overarching policies (such as the National Development Plan, 2030) and the National Strategy for Sustainable Development 2011 (DEAT, 2011), as well as sector-specific policies such as the National Framework Strategy for Sustainable Development, 2008 (DEAT, 2008a). At a national level, provisions are made for Environmental Implementation Plans (EIPs) and Environmental Management Plans (EMPs), as a legal requirement stipulated in the NEMA (South Africa, 1998a). The content and procedural requirements for EIPs and EMPs are prescribed in the NEMA[78]. However, a study conducted by DFFE indicates that EIPs do not play an influential role in influencing EA (DFFE, 2018).

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[76] South Africa became a signatory to the 'Convention on Wetlands of International Importance especially as Water Fowl Habitat' in 1975. RAMSAR sites are manages in accordance with the National Wetland Management Framework and by a National Wetland Policy.

[77] South Africa became a signatory to the Paris Agreement in November 2016: International Relations and Cooperation on Paris Agreement on Climate Change | South African Government (www.gov.za).

[78] Chapter 3 of the NEMA (South Africa, 1998a).

At a provincial level, there are broad overarching policies, including the Western Cape OneCape2040 (WCG, 2012) and the Western Cape Provincial Spatial Development Framework (PSDF) (DEA&DP, 2014). Provincial, sector-specific environmental policies include the Western Cape Climate Change Response Strategy and Implementation Framework (DEA&DP, 2022).

National policies in other sectors that result in horizontal and diagonal tiering include the Mine Water Management Policy, 2022 (DWS, 2022), the National Spatial Development Framework (South Africa, 2023), and the Green Transport Strategy 2018-2050 (DoT, 2018).

4.2.2.2 Information flowing from strategic-level assessments

Information contained in strategic-level EAs in the environmental sector, and where relevant, in other sectors, should inform EIA processes. In EA, SEAs and EMFs are the most extensively used strategic-level EA instruments, with SEAs being the primary focus of the national government and EMFs used by provincial authorities in South Africa (DEA, 2014; Cilliers & Retief, 2017). EMFs are voluntary instruments and predominantly follow political-administrative boundaries. However, not all of South Africa is covered by EMFs. SEAs are also voluntary instruments - they do not follow *per se* political-administrative boundaries but constitute broader assessments beyond the project level. Several SEAs have been completed related to infrastructural development in certain sectors in South Africa *(*Fischer *et al.,* 2019; Retief *et al.*, 2021). EMFs and SEAs influence EIA processes in two ways. Firstly, they provide strategic contextual information to inform EIA processes. Secondly, several SEAs and EMFs were used to develop regulatory instruments that change the regulatory EIA process – either in support of or as an alternative to the regulatory EIA process (see discussion under paragraph 4.2.1, Design Component).

As noted, the NEMA provides the framework (umbrella) under which various functional areas in environmental management, such as climate change, biodiversity, and waste management, are governed by separate legislation, referred to as the SEMAs. While SEAs and EMFs constitute assessments that consider all functional areas of the environment, the SEMAs also make provision for various tiered policies and plans specifically focused on their respective functional areas (see Table 4-1). These functional-specific environmental planning products are important strategic informants to EIA processes. A few examples of such functional-specific environmental planning instruments are provided for in the Specific Environmental Management Acts:

- The National Environmental Management (NEM): Integrated Coastal Management Act makes provision for National, Provincial, and Municipal Coastal Management Programmes.[79]
- The NEM: Waste Act requires the drafting of a National Waste Management Strategy,[80] as well as requiring provincial departments responsible for waste management and Municipalities[81] to prepare integrated waste management plans.
- The NEM: Biodiversity Act makes provision for the drafting of a National Biodiversity Framework,[82] Bioregional Plans[83] and Biodiversity Management Plans.[84] The said Act also makes explicit provision for the coordination and alignment of biodiversity plans.[85]
- The NEM: Air Quality Act requires that every national department or province responsible for preparing an environmental implementation plan or environmental management plan in terms of Chapter 3 of the National Environmental Management Act must include an air quality management plan. Furthermore, every municipality must include in its integrated development plan contemplated in Chapter 5 of the Municipal Systems Act an air quality management plan.[86]

Importantly, the above functional-specific environmental planning deliverables catered for in the SEMAs do not include (and are not legally required to undertake) an integrated assessment/planning of all social, economic, and biophysical components of the environment. They have a primary functional-specific focus. EMFs are different and require consideration of all components of the environment.[87]

4.2.2.3 The existing scientific and technical information

The information contained in other EIAs conducted near the site where an EIA is being conducted may contain relevant information. EIAs dealing with similar impacts (e.g., pollution impacts using a specific technology) may contain relevant information. In addition, scientific and research

[79] Chapter 6 of the NEM: ICMA (South Africa, 2008a).

[80] Section 6 of the NEM: Waste Act (South Africa, 2008b).

[81] Section 11 of the NEM: Waste Act (South Africa, 2008b).

[82] Section 38 of the NEM: Biodiversity Act (South Africa, 2004b).

[83] Section 40 of the NEM: Biodiversity Act (South Africa, 2004b).

[84] Section 43 of the NEM: Biodiversity Act (South Africa, 2004b).

[85] Section 48 of the NEM: Biodiversity Act (South Africa, 2004b).

[86] Section 15 of the NEM: Air Quality Act, 2004 (South Africa, 2004).

[87] Regulation 4 of the ENMF Regulations (South Africa, 2010).

reports that apply to the geographical area, impacts, type of development, or relevant functional area associated with an EIA being conducted may contain relevant information.

4.2.2.4 Stakeholder inputs

In South Africa, especially since the post-1994 democratic dispensation, there is a strong focus on transparency and public engagement, which is reflected in the Constitutional and the PAJA requirements for just administration (see section 4.2.1.6). This strong focus on transparency and public engagement provides the opportunity for both scientific/technical and value-based inputs to be considered and integrated into various tiers of EA, culminating in project-level EIAs where the NEMA and the EIA Regulations set minimum requirements for public consultation processes[88]. Stakeholder inputs are required during and will shape all stages of EIA processes, ranging from inputs into the need for and scope of an assessment (i.e., screening), during the scoping of issues, the assessment of impacts and measures to address these impacts (consistent with the impact mitigation hierarchy). In terms of the EIA regulations, the various stakeholders involved in EIA processes include:

- Independent EAPs must be appointed by an applicant to conduct EIA processes. They are responsible for the overall management of the assessment processes and for integrating all stakeholder inputs during such processes, which are consistent with the requirements set out in the enabling legislation. A strong focus is placed on the need for objectivity and independence of EAPs.[89]
- Specialists appointed to provide scientific inputs (ranging from opinions to detailed specialist studies) from the pre-application planning process, scoping, and assessment phases of the EIA process. Guidance on their involvement (insofar as specialist studies are concerned) is also provided for in the EIA Regulations, with a strong emphasis on the objectivity and independence of specialists.[90]
- The public or civil society provides inputs during both the scoping and assessment phases of an EIA process based on values, experience, and local knowledge.
- Organs of state are consulted during all phases of the EIA process and the review of EIAs, consistent with the requirement for cooperative governance. It is also important to note that various functional specialists in government and other organs of state provide valuable guidance and inputs during EIA and decision-making processes. These specialists cover the

[88] Public consultation requirements are provided for in section 24(4) of the NEMA (South Africa, 1998a) and Chapter 6 of the EIA Regulations (South Africa, 2014a).

[89] Regulation 13 of the EIA Regulations, 2014 (South Africa, 2014a).

[90] Regulation 13 and 14, as well as Appendix 6 of the EIA Regulations, 2014 (South Africa, 2014a).

various functional areas in environmental management, such as air quality, coastal management, biodiversity, and other sectors such as land use planning, transport, and agriculture. Interacting with these functional specialists is also an important cooperative governance consideration during both the review and decision-making phases of EIA processes.

- Officials within the employ of the decision-making authority who are responsible for reviewing EIAs provide inputs/guidance during the EIA process, consistent with the roles and responsibilities stipulated in the NEMA (South Africa, 1998a) and the EIA Regulations (South Africa, 2014a).
- The developers/applicants provide project information during all stages of the EIA process, as early as the pre-application project planning and screening phases.

Importantly, stakeholders can provide inputs into all tiers of assessment and planning – from strategic assessments and planning frameworks to project-level assessments. Government stakeholders play an important role in informing strategic assessments and EIA processes and in translating how strategic-level information informs project-level EIAs. For example, when considering biodiversity impacts, EIA processes depend on specialist inputs to determine if a project-level biodiversity impact will be regarded as significant when measured against strategic biodiversity goals contained in policies.

4.2.2.5 Skills and competencies

Various skills and competencies are required during EIA processes. Skilled persons fulfil various roles and responsibilities during different stages of tiered assessments and decision-making. Some of the key skills include:

- EIA consultants are required to be registered as Environmental Assessment Practitioners (EAPs) in terms of the Section 24H Registration Authority Regulation, 2016 (South Africa, 2016).[91] EAPs provide project management and integrative thinking skills and competencies, as defined in the NEMA and the EIA Regulations, and consistent with the registration requirements of the Environmental Assessment Practitioners Association of South Africa (EAPASA)[92] as the appointed registration authority in South Africa.[93]

[91] Government Notice No. 849 in Government Gazette No. 40154 of 22 July 2016.

[92] Information on the EAPASA's registration requirements can be accessed at https://eapasa.org/.

[93] Appointment of the Environmental Assessment Practitioners Association of South Africa as the single registration authority in terms of section 24H of the National Environmental Management Act, 1998 – Government Gazette 31434, Government Notice 104, dated 8 February 2018.

- Officials involved in the review of EIAs are also required to register as EAPs. Consistent with the registration requirements of EAPASA as the registration body,[94] EAPs must demonstrate that they have regulatory knowledge related to all phases of the EIA process and knowledge of other relevant policy and legislative frameworks, functional scientific and technical knowledge, analytical skills, integrative thinking and report writing skills during the review of EIA, as defined in the NEMA and the EIA Regulations.
- State departments and other organs of state that are consulted as functional specialists who participated during the EIA process in accordance with the NEMA and the EIA Regulations[95], require functional (specialist) skills and knowledge of legislative and policy frameworks relevant to their functional areas.
- Specialists provide scientific skills and competencies. A wide range of specialist skills and expertise are required during the process of data gathering and analysis, as required by the NEMA and the EIA Regulations, and consistent with the prescripts of the various professional bodies/councils they belong to, such as APASA, SACNAPS,[96] and SAPI.[97]
- The public/civil society can provide inputs that can be based on their values, experience, and local knowledge, consistent with the requirements for public participation as stipulated in the EIA regulations.[98]
- The judiciary provides judicial skills, oversight, and interpretation of legislation and jurisprudence.
- Applicants have project knowledge and an understanding of the particular development and development sector.
- All the above shareholders require general (softer) skills such as communication and conflict management skills, depending on their specific roles and responsibilities within the EIA process.

4.2.2.6 Financial resources and time

The EIA Regulations (South Africa, 2014a) set timeframes for the various phases of an EIA process. Adequate time must be allowed for all stages of an assessment (Kidd *et al*., 2018),

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[94] Information on the EAPASA's registration requirements can be accessed at https://eapasa.org/

[95] Both the NEMA (South Africa, 1998a) and the EIA Regulations (South Africa, 2014a) set various requirements for public participation, including consultation with relevant organs of state.

[96] South African Council for Natural Scientific Professionals - https://www.sacnasp.org.za/

[97] South African Planning Institute - https://sapi.org.za/

[98] Regulation 43 of the EIA Regulations (South Africa, 2014a) calls for interested and affected parties to disclose "any direct business, financial, personal or other interest which that party may have in the approval or refusal of the application" and Regulation 48 highlights the consequences of providing incorrect or misleading information in any form, or omits information that may have an influence on the outcome of a decision of a decision-making authority.

including the planning, information gathering and the assessment itself, the review of assessments, decision-making, and the implementation of decisions. Adequate time must also be allocated to pre-application consultation and project planning to ensure that the strict timeframes of the regulated EIA process (during scoping and assessment phases) can be achieved.

The financial resources – adequate financial resources must be provided to cover all the phases of the EIA process.

4.2.2.7 Assumptions related to the input component

Assumptions related to the input components related to tiered EA and decision-making:

Assumption 3: A relevant strategic environmental context is available in the form of a strategic level assessment and/or strategic environmental planning framework to guide assessment and decision-making at the project level.

To provide meaningful guidance to EIAs, the strategic context should be relevant to the type of development, the geographical location of the proposed development, and the scale thereof.

Assumption 4: Functional (e.g., biodiversity, heritage, geohydrology, etc.) specialists provided clear guidance in setting a strategic environmental context and the translation thereof into project-level inputs.

It is assumed that functional specialists have participated in the development of strategic assessments and/or strategic planning frameworks in a manner that will guide lower tiers of assessment and decision-making.

Assumption 5: The strategic environmental context was the outcome of an evidence-based policy formulation (in instances where a policy influences an EIA process) and a credible environmental assessment and/or planning process.

Assumption 6: The strategic environmental context is supported by relevant stakeholders, ranging from politicians, policymakers, decision-makers, specialists, applicants, and the public, across different sectors.

It is assumed that stakeholders have participated in the EMF/SEA processes or are at least aware of and support the strategic environmental context provided by these processes.

<u>Assumption 7:</u> The preceding tiered assessment or planning framework considered both policy/legislation inputs (vertical tiers) as well as other sector inputs (i.e., horizontal/diagonal tiering).

It is assumed that the EMF/SEA processes considered and incorporated the information that flowed from other tiers, meaning policy/legislation inputs (vertical tiers) and other sector inputs (i.e., horizontal/diagonal tiering).

4.2.3 Activity component - actions to be taken to produce outputs

The activities when conducting EAs are reasonably consistent globally (Morrison-Saunders & Retief, 2012; Hanna, 2022; Fonseca, 2022) and are linked to three phases - planning, assessment, and implementation. In South Africa, these phases can be differentiated further into the pre-application (planning) phase,[99] the scoping phase, the assessment phase, the review and decision-making phase, and the implementation phase, provided for in the EIA Regulations (South Africa, 2014a). Importantly, these phases are also informed by the NEMA, which defines "assessment" as "...*the process of collecting, organising, analysing, interpreting and communicating information that is relevant to decision-making*", and "evaluation" to mean "…*the process of ascertaining the relative importance or significance of information, in the light of people's values, preferences and judgments, in order to make a decision*".[100] The NEMA defines "review" as "… *the process of determining whether an assessment has been carried out correctly or whether the resulting information is adequate in order to make a decision*".[101] In general, EIAs are conducted by independent EAPs who are appointed by applicants. The review of EIAs is conducted by officials employed by the decision-making authority. The activities related to these phases of the EIA process are discussed in the following paragraphs.

4.2.3.1 The pre-application planning phase

The pre-application planning phase of an assessment is based on the EIA Regulations that make provision for consultation between applicants and the decision-making authority prior to the submission of an application (South Africa, 2014a; Kidd *et al*., 2018; Alberts *et al*., 2023). This phase includes the following activities:

[99] Pre-application occurs when applicants consult with authorities in terms of the provisions in regulation 8 of the EIA Regulations (South Africa, 2014a).

[100] Section 1 of the NEMA (South Africa, 1998a).

[101] Section 1 of the NEMA (South Africa, 1998a).

- The pre-application planning phase entails conceptualising the development proposal and screening to determine the applicable legislative frameworks concerning the EIA process. During this phase, screening constitutes an informal process not prescribed by law. The pre-application planning phase precedes the commencement of a formal EIA process as prescribed by law. The formal EIA process commences once an application for environmental authorisation is submitted to the decision-making authority. The purpose of this informal screening is to determine the legal requirements for an application for environmental authorisation to conduct a listed activity[102] and for following an EIA process. If so, screening determines the level of assessment, i.e., if a Basic Assessment process or a Scoping and Environmental Impact Report (S&EIR) process is required (South Africa, 2014a). It also involves the identification of potentially fatal flaws and avoidance of impacts, including the identification of alternatives to address these challenges. This pre-application planning is done by the EAP, the applicant, and other professionals and specialists involved in project planning. With specific reference to tiering, this is the phase where the EAP and specialists identify potential fatal flaws and significant impacts based on the strategic context within which the development proposal is located. Although not part of the formal scoping process required once a formal application is submitted, identifying fatal flaws and significant impacts informs the revision of the project proposal and identifies relevant alternatives. As such, the presence of higher-order (tiered) information in the form of an EMF or SEA is of crucial importance to inform project proposals that will improve the chances of lodging a successful application for environmental authorisation (Kidd *et al*., 2018; DPME/DEA, 2019).
- The increased prominence of the pre-application planning phase is an emerging trend in EIA practices in South Africa (Kidd *et al*., 2018; Alberts *et al*., 2023). This trend is largely due to the stringent timeframes that govern the EIA process once a formal application is submitted, resulting in an increased need for project teams to plan. Pre-application planning avoids unnecessary delays due to unanticipated issues and impacts being uncovered during the formal screening and scoping processes that may delay the EIA process due to the need for additional information. Therefore, consistent with the requirement for 'need and desirability' (South Africa, 2014a; DEA, 2017c), this is also the phase where the presence of an appropriate strategic context (i.e., tiering) is most valuable in informing the formulation of appropriate development proposals that is consistent with the strategic environmental context within which it is situated.

[102] Section 24F of the NEMA stipulates that a person may not conduct an activity listed by the Minister in terms of section 24(2)(a) and (b) of the NEMA, without an environmental authorisation.

4.2.3.2 The formal statutory EIA process

The formal, statutory EIA process commences when an applicant applies for environmental authorisation to undertake a listed activity in terms of the NEMA (South Africa, 1998a). The EIA process to be followed is set out in the EIA regulations (South Africa 2014a). On receipt of the application, the decision-making authority will confirm the outcome of the formal screening process -i.e., confirm the listed activities that trigger the need for environmental authorisation and whether a basic assessment or scoping/EIP process must be followed. The following components of an EIA process, which are consistent with international EIA practice (Kidd *et al*., 2018; Hanna, 2022; Fonseca, 2022; Hanna & Arnold, 2022), are common to both these processes:

- *The screening/scoping phase* follows the formal submission of an application for environmental authorisation. While informal screening takes place as part of the pre-application phase, the formal screening process commences when the applicant applies, and the decision-making authority confirms the need for an EIA process to be followed and the level of assessment to be undertaken (i.e., a basic assessment or a Scoping/EIR process). The scoping phase involves identifying issues through data/information gathering.[103] Whilst the EAP is responsible for coordinating the EIA process, information inputs are the responsibility of all stakeholders. Regarding EA tiering, it is important to note that during the scoping process, an EAP is required to also consider the strategic context in the scoping of issues and concerns in terms of the environmental management principles[104] and IEM objectives[105] in NEMA, and the EIA regulations[106], especially the requirement to consider 'need and desirability'.[107]
- *The assessment phase* involves the analysis of information and knowledge generation. The analysis of information is primarily done by the EAP and specialists in consultation with the EAP and forms the foundation of evidence-based decision-making. Consistent with the requirements of the EIA Regulations, the drafting of assessment reports incorporates findings of the impact evaluation, including mitigation measures (consistent with the impact mitigation

[103] Appendix 2 of the EIA Regulations, 2014 sets clear objectives for scoping and the content requirements for scoping reports.

[104] Section 2 of the NEMA (South Africa 1998a).

[105] Section 23 of the NEMA (South Africa, 1998a).

[106] The need to consider higher-order frameworks and plans is contained in Appendix 2 of the EIA Regulations, which specifies the content requirements of Scoping Reports

[107] Regulation 18, Appendix 1, 2 and 3 of the EIA Regulation (South Africa, 2014a). The need for a development and the desirability thereof is largely dependent on the strategic context within which it is located (DEA, 2017c).

hierarchy) and management measures for implementation, contained in Environmental Management Programme reports.

Similar to the scoping phase, the requirement to consider the strategic context to determine the significance of impacts during the assessment phase is also dictated by the environmental management principles and IEM objectives in the NEMA, the EIA regulations,[108] especially the consideration of 'need and desirability'.

- *Stakeholder consultation* occurs throughout the EIA process during all phases, although the bulk thereof occurs during the scoping and assessment phases. Both the NEMA and the EIA Regulations set clear requirements for public engagement.[109]

  In most instances, the EAP will be responsible for conducting public participation as part of the EIA process. In certain instances, especially in controversial or complex EIA processes, a social impact assessment practitioner may be appointed to conduct the public participation process and undertake a social impact assessment (DEA, 2014; DEA&DP, 2007).

- *The review and decision-making phases* commence once the assessment phase is concluded. This phase predominantly involves reviewing EIA information by the officials employed by the decision-making authorities, against the legal requirements in the NEMA, the EIA Regulations, and the PAJA. This includes considering policy and other strategic informants and, where relevant, consultation with other organs of state. The review process culminates in decisions made by the decision-making authority to either refuse environmental authorisation or issue an environmental authorisation, including conditions to be adhered to and the approval of an environmental management programme report (EMPr). Once a decision has been taken, the decision-making authority issues the decision to the applicant (and EAP), who is responsible for communicating the decision to interested and affected parties (South Africa, 2014a).[110]

The NEMA makes provision for an appeal to be lodged against the decision issued by the decision-making authority[111]. When an appeal is lodged, the appeal process is governed by the National Appeal Regulations, 2014.[112] Once an appeal has been lodged, the appeal

[108] The need to consider higher order frameworks and plans is contained in Appendix 3 of the EIA Regulations that specifies the content requirements of Environmental Impact Assessment Reports.

[109] Section 23(2)(d) and 24(4) of the NEMA (South Africa, 1998a) and Chapter 6 of the EIA Regulations (South Africa, 2014a).

[110] Regulation 4 of the EIA Regulations (South Africa, 2014a).

[111] Section 43 of the NEMA (South Africa, 1998a).

[112] GG 38303, GN R993, dated 8 December 2014.

administrators will review the appeal information (including the information contained in the EIA and environmental authorisation), and the appeal authority will issue an appeal decision, confirming, amending, or rejecting the decision made by the decision-making authority.

4.2.3.3 The implementation phase

The implementation phase follows once the review and decision-making phase has been concluded and the decision has been communicated to interested and affected parties – also referred to as EIA follow-up (Morrison-Saunders & Arts, 2004; Morrison-Saunders *et al*., 2007; Morrison-Saunders *et al*., 2021; Arts & Morrison-Saunders, 2022; Arts *et al*., forthcoming). EIA follow-up in South Africa has been strengthened by expanding the auditing requirements in the EIA Regulations over the last number of years.[113] This post-decision phase includes implementing the Environmental Management Programme's management measures and ongoing environmental auditing, promoting continuous improvement. This phase also includes the compliance and enforcement actions taken by the decision-making authority.

4.2.3.4 The assumption related to the action component

The assumption regarding the action component related to tiered EA and decision-making:

Assumption 8: EAPs, in compiling the assessment and the review thereof, are aware of the strategic policy and planning context that informs their project-level decision-making mandate.

As a proxy indicator for EAPs, in compiling the EAs and the review thereof, it is assumed that they are aware of the strategic policy and planning context that informs their project-level decision-making mandate as dictated by legislation.

4.2.4 Output component – deliverables flowing from actions

Outputs constitute the tangible deliverables based on the EIA process actions and inputs discussed in the previous paragraphs. The EIA process will deliver various outputs during the different phases of the EIA process as required in terms of the EIA Regulations (South Africa, 2014a):

- Pre-application phase: This phase will also give the applicant a clear understanding of what the regulatory process will require – i.e., a basic assessment process or a

[113] See Regulations 26, 34-37, and Appendix 7 of the EIA Regulations (South Africa, 2014a).

Scoping/Environmental Impact Report process and the anticipated issues that will emerge from the formal EIA process. Deliverables can include draft project proposals, minutes of meetings with competent authorities, and informal screening reports.

- Scoping phase: A scoping report[114] or a basic assessment[115] must be produced by the EAP. When a basic assessment process is followed, it includes both the scoping and the assessment components. However, if a scoping/EIR process is followed, separate scoping and assessment reports are produced.
- Assessment phase: The primary outputs at this stage are specialist inputs, an environmental impact report, and environmental management programme reports (EMPRs)[116] produced by the EAP.
- Public consultation: – Public consultation takes place throughout the EIA process, and depending on the extent of the EIA process,[117] specific outputs are delivered – that is, public participation plans, public participation reports, comments and response reports, and social impact assessments (if required). These deliverables are included as integral parts of the scoping and environmental impact reports produced by the specialist and/or the EAP.
- Review and decision-making phase: The deliverables during this phase primarily relate to the duties of the decision-making authority, which includes the review reports produced by the authority EAP,[118] the refusal or environmental authorisation issued by the decision-making authority, the appeal (review) report compiled by the appeal administrator, and the appeal decision issued by the appeal authority.
- Implementation phase: During the implementation of the development following the issuing of the environmental authorisation, persons in possession of such a decision are legally required to submit audit reports to the decision-making authority.[119] Audit reports are prepared by an independent person with the relevant environmental auditing expertise, to verify compliance with the environmental authorisation and the EMPr. In addition, compliance reports are produced by the EIA administrator and/or Environmental Management Inspectors to verify compliance with the environmental authorisation conditions and the EMPr.

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[114] Regulation 21 of the EIA Regulations (South Africa, 2014a).

[115] Regulation 19 of the EIA Regulations (South Africa, 2014a).

[116] Regulation 23 of the EIA Regulations (South Africa, 2014a).

[117] Chapter 6 of the EIA Regulations (South Africa, 2014a).

[118] In terms of the definition of an Environmental Assessment Practitioner (EAPs) in section 1 of the NEMA, an EAP is "…. the individual responsible for the planning, management, coordination or review of environmental impact assessments, strategic environmental assessments, environmental management programmes or any other appropriate environmental instruments introduced through regulations".

[119] Regulation 34 of the EIA Regulations (South Africa, 2014a).

Within the context of tiering, it is assumed that the above deliverables are informed and incorporate the strategic information that flowed from other tiers and that the decisions taken are consistent with the strategic context within which it is situated. Therefore, the main assumption related to tiered EA and decision-making is:

Assumption 9: The EIA decision aligns and gives effect to the strategic policy and environmental planning context.

4.2.5 Outcome component – the desired changes to be achieved

Outcomes represent the (desired) change in status or condition achieved through the EIA process. This is closely linked to fulfilling the principles of environmental management[120] and the objectives of IEM.[121] EIA outcomes, within the context of EA tiering, should reflect the (desired) change in people's attitude toward development (as individuals, communities, and institutions), seen as sustainable within its broader context (DPME/DEA, 2019). It represents the changes to be achieved in policies, legislation, behaviour, attitude, knowledge, state of development, state of the environment, well-being, etc. These outcomes are not actions (i.e., "what should be done") or deliverables (i.e., "what is produced") but represent what actions and their deliverables lead to (i.e., "what is to be achieved") (DEA, 2014; DPME/DEA, 2019).

There can be immediate outcomes (i.e., short-term outcomes), such as evidence-based, sustainable development proposals, or intermediate outcomes, such as giving effect to the principles of section 2 of the NEMA (South Africa, 1998a) and improved cooperative governance relationships with other state departments (DPME/DEA, 2019). The NEMA specifically set minimum requirements for procedures for the investigation, assessment, and communication of the potential impact of activities with respect to every application for an environmental authorisation, including "*coordination and cooperation between organs of state in the consideration of assessments where an activity falls under the jurisdiction of more than one organ of state".*"[122]

[120] Section 2 of the NEMA (South Africa, 1998a).

[121] Section 23 of the NEMA (South Africa, 1998a).

[122] Section 24 of the NEMA (South Africa, 1998a). The EIA Regulations (South Africa, 2014a) also set requirements for consultation with other organs of state during EIA processes.

4.2.5.1 Immediate outcome component

The immediate outcomes are that the EIA process and decision-making deliverables are consistent with the principles of environmental management, the objectives of IEM, and the minimum requirements for EIAs in the NEMA.[123] As such, the immediate outcomes can include the following:

- That EIA decision-making, within the context of tiered EA, increasingly becomes sustainability-led, evidence-based, and informed by tiered assessments/environmental planning frameworks.
- Stakeholders regard the EIA process, within the context of tiered EA, to be relevant and credible in delivering sustainable outcomes when supported by tiered assessments/planning frameworks (i.e., the strategic context).
- Increased awareness of and support for the value of tiering in EA.

Assumptions regarding the immediate outcome component related to tiered EA and decision-making:

Assumption 10: Tiered environmental assessments/environmental planning frameworks provide clear guidance to lower tiers to facilitate sustainability outcomes at project level assessment and decision-making.

Assumption 11: In considering what constitutes sustainability outcomes, stakeholders attached a value to aligning project-level assessments and decisions to the strategic environmental context.

4.2.5.2 Intermediate outcome component

In the long term, consistent with the requirements of Chapter 3 of the NEMA (South Africa, 1998a) for cooperative governance, there is increased alignment between the strategic level planning in different sectors, focused on sustainable development outcomes. This alignment will result in coordination between sectors in guiding project-level assessments and decision-making[124] and the empowerment of all stakeholders[125] towards sustainable development outcomes, as well as regulatory and decision-making efficiency.

[123] Section 24(4) of the NEMA (South Africa, 1998a).

[124] Section 12 of the NEMA, and the purpose of Environmental Implementation Plans (South Africa, 1998a).

[125] Consistent with the principles in section 2 of the NEMA and objectives of section 23 of the NEMA (South Africa, 1998a).

The intermediate outcomes of EIA processes within the context of EA tiering include the following:

- Evidence-based, sustainability-led decision-making in all spheres of government is guided by tiered EAs/ environmental planning frameworks.
- The approach to tiering in EA/ environmental planning improves coherence in regulatory decision-making and cooperative governance between different sectors.
- Increased stakeholder capacity and empowerment through outcomes-based, sustainability-led, tiered EAs/environmental planning frameworks.
- Through the EIA process, an increased value is attached to the strategic context provided through tiering, resulting in continuous improvement in the guidance provided in PPPPs and the tiered EAs that inform them.

The increased calls for regulatory efficiency require increased cooperation between authorities. However, no examples could be found of integrated regulatory decision-making between sectors (i.e., integrating regulatory processes to integrate or align decision-making). While efforts to streamline regulatory procedures were evident in the environmental sector (see section 4.1.1.3), no similar examples were found in other sectors, and no examples on the integration (or even alignment) of regulatory procedures between different sectors could be found.

The two most prominent sectors that govern the use of land are the (land use) planning and the environmental sectors. However, no examples could be found in practice on alignment or integration of regulatory decision-making procedures in the land use and environmental sectors, although both the NEMA and the SPLUMA include enabling provisions for such integration. Cooperation between the two sectors was primarily focused on integrating or aligning strategic planning efforts between sector authorities (i.e., alignment between SDFs and SEAs/EMFs).

Assumptions regarding the intermediate outcome component related to tiered EA and decision-making:

Assumption 12: The need for aligned/ integrated decision-making will promote the value of tiered environmental assessment to overcome sectoral interests.

Assumption 13: The support for the value of tiering in environmental assessment results in allocating resources and establishing institutional arrangements to support strategic-level assessment and planning.

4.2.6 Impact component – the ultimate goals/aims

The impact that is strived for through EIAs within a tiered EA system is linked to the progressive realisation of the environmental right enshrined in Section 24 of the Constitution (South Africa, 1996):

"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."

One of the findings flowing from a review Study on the effectiveness of the EIA System in South Africa (DPME/DEA, 2019) was that the "….. *overall outcome of the system evaluation supports the international understanding (discourse) that EIA systems produce incremental gains contributing towards sustainability ….the incremental gains refer to the progressive realization of NEMA Section 2 principles and Section 24 of the Constitution*…….[i]*t is not possible to measure the impact of the EIA system towards specific goals or objectives because the objectives of EIA defined in NEMA and Section 24 of the Constitution has not been quantified (if this is even possible?)*" (DPME/DEA, 2019:44). The study recommended that *"……the impact of the EIA system cannot be measured and/or evaluated until such time as well defined and measurable objectives are developed. This is due to the lack of quantifiable and well-defined targets and objectives for the EIA system as a whole*." (DPME/DEA, 2019:44). Considering the strategic nature of broader sustainability objectives, it can only be developed and implemented through a tiered EA system. More particularly, sustainability objectives can only be identified through strategic-level assessment and then captured in subsequent policy or planning outputs. Therefore, the findings of the 2019 EIA Review Study underscore the need for tiering in EA.

Assumptions regarding the impact component related to tiered EA and decision-making:

Assumption 14: The strategic context, through SEAs or EMFs, is actively contributing to sustainable development goals.

Assumption 15: EIAs are supported as essential instruments in tiering in environmental assessment for achieving environmental rights.

4.2.7 Accountability ceiling

Strategic impacts are aspirational goals that cannot be achieved by EIAs *only* – see Section 3.5. Several other factors and role-players function beyond the influence sphere of EIAs (as the lowest EA tier) that must contribute to fully realise the above-mentioned desired impact to fully realise the environmental rights in section 24 of the Constitution (South Africa, 1996). Considering the scope of the EIA system and the roles of stakeholders involved in it, the ToC *accountability ceiling* for EIAs, as one of the EA tiers, is located in the transition from intermediate outcomes to impacts. For example:

- Cooperation between regulatory decision-making authorities is not within the control of the environmental sector only. Decision-makers in other sectors, in terms of the decision-making powers in another statute, may ignore the inputs received from the environmental sector authorities. For example, a municipality may approve land use rights that are inconsistent with the inputs received from environmental authorities.

- Preventing ecological degradation or climate change impact falls beyond the influence sphere of only EAs, such as soil erosion or pollution caused by poor farming or mining practices.

- Alignment between strategic-level EAs and planning initiatives in other sectors (through horizontal tiering), is not dependent on only the stakeholders within the environmental sector. Authorities in other sectors can still make policy choices and make executive decisions inconsistent with inputs from the environmental sector, especially in South Africa, where there is no legal requirement to conduct an SEA to inform a PPP. For example, a policy on infrastructural development or transport may recommend policy choices that are resource intensive.

- Contextual factors such as the state of the economy, cultural considerations, political decisions, and institutional arrangements may all influence decisions beyond the context of EA systems, but they may have sustainability implications.

The lack of a clearly defined accountability ceiling in the EIA system in South Africa is also evident in the findings of the evaluation study of the EIA system (DPME/DEA, 2019), which highlighted the methodological challenges in measuring the progressive realisation of "*progressive realization of NEMA Section 2 principles and Section 24 of the Constitution…"* (DPME/DEA, 2019:44). One of the evaluation study conclusions expressed doubt if measuring EIAs contribution to

sustainability outcomes can be fully achieved, as no objectives exist against which EIA outcomes can be measures in contributing the above goal.[126]

The presence of an accountability ceiling also relates to Nilsson and Dalkmann (2001), who highlighted that at the strategic level assessment, there is generally a decrease in the predictability of environmental impacts (positive or negative) compared to the project level and that the complexity increases in terms of the numbers of actors involved in the decision.

It is also worthwhile to reflect on the relationship between the notion of an accountability ceiling and the discussion in Bond *et al*. (2022) on the influence of contextual elements on the effectiveness of EAs. Of particular importance is their reflection that some contextual factors lie beyond the scope of EA and that some of the benefits of EAs influence contextual elements outside the scope of EA (e.g., cooperative governance in general).

[126] See page 60 of the EIA Review Study (DPME/DEA, 2019).

CHAPTER 5: RESEARCH DESIGN AND METHODS

This chapter addresses research objective 2, which is to develop an evaluation framework for the functioning of EIA within a tiered EA system in South Africa. It sets out the research design that was followed (section 5.1) and describes the methods used (section 5.2).

5.1 Overall research design

This research was evaluative (Creswell, 2014; Yin, 2018), involving a qualitative (Rahman, 2017; Flick, 2014), multi-level comparative case study analysis (Rowley, 2002; Flyberg, 2006; Yin, 2018), applied to two levels – tiering in EA at a country level and a project-EIA level. The concept of Theory of Change (ToC) (Auriacombe, 2011; Vogel, 2012; Stein & Valters, 2012) was used to build a logical framework of how tiering in EA functions at the country level, seen from an EIA perspective and then to build an evaluation framework (see Chapter 4).

The evaluation framework was applied to selected case studies. A qualitative analysis (Rahman, 2017; Flick, 2014) of case studies was selected as an appropriate research approach to study and gain an in-depth understanding of these cases (Creswell, 2014; Yin, 2018), how it worked and interacted with its real-life contextual environment, as well as a comparative case analysis to gain insight in the variation in practices.

In summary, a case study approach was followed to evaluate tiering in EA in South Africa and how EIAs function within a tiered EA system in South Africa.

5.2 Theoretical framework

In Phase 1 of this research (Figure 1-1), a theoretical framework was developed by conducting a literature review on EA tiering internationally. Apart from setting the theoretical context for tiering, the literature review was also used to assist in formulating the problem statement addressed in this research. For the literature review, the search engine Google Scholar was used based on the search terms ‘tiering’, ‘tier’, ‘environmental assessment’, ‘strategic environmental assessment’, and ‘environmental impact assessment’. Following this initial search, additional articles were identified using backward and forward snowballing to check respective references and citations. In total, 76 articles were identified as relevant to tiering in EA. The literature review on tiering in EA is contained in Chapter 2 and is related to research objective 1.

Subsequently, a literature review on the Theory of Change (ToC) was also conducted. The literature review on ToC also used the search engine Google Scholar, based on the search terms 'theory of change', 'evaluation research', and 'evaluation framework'. This initial search was used to identify additional articles using backward and forward snowballing to check respective references and citations. In total, 23 articles were identified as relevant to the use of ToC in developing evaluation frameworks. The literature review on ToC is contained in Chapter 3 and is related to research objective 1.

5.3 Developing a theory of change and an evaluation framework for EIAs within a tiered environmental assessment system in South Africa

Phase 2 of the research (Figure 1-1) entailed the development of an evaluation framework.

ToC was used to build a logic framework (or inner logic), reflecting how tiering in EA functions in South Africa, specifically seen from an EIA perspective (see Figure 4-2) in Chapter 4. Based on this ToC and how EIAs function within the EA tiering system in South Africa, an evaluation framework was developed (see Table 5-1). The ToC and the evaluation framework are related to research objective 2.

The methods used to develop a TOC inner logic of how EIAs function within an EA tiering system and an evaluation framework include -

- the analysis of documents (legislation, policies, guideline documents, as well as international and South African literature related to EA and tiering – see Appendix 1); and
- generic, open interviews with South African experts in EA (see Table 5-5 for an interview guide for case study interviews and country-level interviews).

An evaluation framework (see Table 5-1) was developed based on the assumptions identified in the ToC (see Chapter 4 and Figure 4-2) on how EIAs function within a tiered EA system in South Africa. These assumptions are critical factors that underpin the successful implementation of tiered EAs. As reflected in Chapter 4, the assumptions were used to develop evaluation criteria. Every evaluation criterion, in the form of a question, was designed to –

- evaluate the performance of identified EIA case studies against the evaluation criteria /questions by reviewing documentation and interviewing key case study role-players;
- evaluate the performance of identified EMFs/SEAs applicable to the EIA case studies in creating a strategic environmental assessment context for the EIAs. Performance was

evaluated against criteria/questions by reviewing documentation and interviewing key case study role-players; and

- evaluate the effectiveness of tiering in EA against the evaluation criteria/questions through case study reviews and by interviewing key role-players on EA and tiering in general.

The TOC components, the assumptions, and the various evaluation criteria/questions constitute the evaluation framework for this research and are reflected in Table 5-1.

ToC	Assumption	Evaluation Criteria/Review Questions
Design Component	Assumption A1: It is assumed that the environmental management policies and the legislative framework make clear provisions for tiered environmental assessments and tiered decision-making in support of establishing a credible, evidenced-based strategic context for EIAs.	Criterion C1.1: To what extent does the policy context promote tiering in environmental assessment and decision-making?
		Criterion C1.2: To what extent does the legislation include adequate enabling provisions to mandate tiering in environmental assessment, environmental planning, and tiered decision-making?
		Criterion C1.3: To what extent is there a need for policy and law reform to enable or improve tiering in environmental management?
	Assumption A2: Authorities are committed to developing institutional arrangements required to establish strategic context (tiers) to support project-level assessments and decision-making.	Criterion C2.1: To what extent is there support for tiering in environmental assessment in South Africa and its provinces?
		Criteria C2.2: To what extent is there a specific strategy in the province to promote and implement strategic environmental assessment and /or environmental planning initiatives?
		Criterion C2.3: What are the relevant environmental assessment and environmental planning instruments in South Africa/Provinces?
Input Component	Assumption A3: A relevant strategic environmental context is available in the form of a strategic level assessment and/or environmental management framework to guide assessment and decision-making at the project level.	Criterion C3.1: To what extent are all EIAs in the province supported by a strategic context provided for in an EMF/SEA?
	Assumption A4: Functional specialists provided clear guidance in setting a strategic context and the translation thereof into project-level inputs.	Criterion C4.1: To what extent were functional professionals and specialists involved in and supported the development of the EMF/SEA?
	Assumption A5: The strategic environmental context was the outcome of an evidence-based policy formulation and a credible environmental assessment process.	Criterion C5.1: To what extent is the strategic environmental context the outcome of a credible, evidence-based environmental assessment or environmental planning process that considered all components of the environment?
		Criterion C5.2: To what extent is the strategic environmental context current – i.e., has been compiled/updated within the last five years?
		Criterion C5.3: To what extent is the strategic environmental context the outcome of a consultative environmental assessment or environmental planning process?
	Assumption A6: The strategic environmental context is supported by relevant key role-players.	Criterion C6.1: To what extent is the strategic environmental context used by the applicant, EAP, and specialists (i.e., the project team)?
		Criterion C6.2: To what extent, with regard to the EIA process, is the strategic environmental context in the EMF/SEA supported by the other relevant stakeholder

		groupings across different sectors? (generally, and specific to a particular EIA case study)
	Assumption A7: The preceding tiered environmental assessment considered both policy/legislation inputs (vertical tiers), as well as other sector inputs (horizontal/diagonal tiering).	Criterion C7.1: To what extent is the EMF/SEA considered in and consistent with the SDF?
		Criterion C7.1: To what extent is the strategic environmental assessment and planning context informed by policy/legislation inputs (vertical tiers) where applicable?
		Criterion C7.3: To what extent is the strategic environmental context provided in the EMF/SEA informed by other sector strategic planning inputs (horizontal/diagonal tiering)?
Activity Component	Assumption A8: EAPs, in compiling the assessment and the review thereof, are aware of and understand the role of strategic contextual informants when conducting their duties.	Criterion C8.1: To what extent are the key role-players made aware of the existence of the EMF/SEA and the role thereof?
		Criterion C8.2: To what extent is there clear evidence in EIA documentation that the strategic environmental context was considered at project-level assessments?
		Criterion C8.3: To what extent did the EMF/SEA influence the scope of alternatives that were considered in the EIA process?
		Criterion C8.4: To what extent did the EMF/SEA influence the application of the impact mitigation hierarchy in the EIA process?
		Criterion C8.5: To what extent are there any contested views /interpretations on the applicability of the strategic context on the EIA/project? (i.e., different views on how the strategic context should be interpreted in guiding project planning/ assessment)
		Criterion C8.6: To what extent is there clear evidence in EIA decisions (environmental authorisations and appeal decisions) that the strategic context was considered?
Output Compon	Assumption A9: The EIA decision will validate and strengthen the strategic environmental context	Criterion C9.1: To what extent does the EIA decision align and give effect to the strategic environmental planning context (i.e., the EMF/SEA)?
Immediate Outcome Component	Assumption A10: Tiered environmental assessments provide clear guidance to lower tiers to facilitate sustainability outcomes at project level assessment and decision-making.	Criterion C10.1: To what extent does the strategic environmental context (i.e., EMF/SEA) provide clear guidance on what constitutes appropriate and inappropriate types and scales of development and land use to promote sustainable development outcomes at project-level assessment?
	Assumption A11: In considering what constitutes sustainability outcomes, stakeholders attached value to aligning project-level assessments and decisions to the strategic environmental context.	Criterion C11.1: To what extent do key role-players, in evaluating the sustainability of project-level EIAs and decisions, attach value to the alignment thereof with the strategic environmental context (i.e., did they regard alignment with the strategic context as representing a sustainable outcome)?
		Criterion C11.2: To what extent do key role-players from other sectors refer to the EMF/SEA in addressing their sector interests?
Intermediate Outcome Component	Assumption A12: The need for aligned/ integrated decision-making will promote the value of tiered environmental assessment to overcome sectoral interests	Criterion C12.1: To what extent are strategic-level environmental assessments considered in other sector strategic planning frameworks in a manner that achieves alignment?
	Assumption A13: The support for the value of tiering in environmental assessment results in allocating	Criterion C13.1: To what extent do the environmental decision-making authorities consider tiering (tiered environmental assessments and/or environmental planning) as valuable in achieving sustainable development outcomes?

	resources and establishing institutional arrangements to support strategic-level assessments.	Criterion C13.2: To what extent have resources been allocated, and institutional arrangements been developed within provincial authorities' support for tiering (through strategic level assessments and planning)?
Impact Component	Assumption A14: The strategic context, through SEAs or EMFs, is actively contributing to sustainable development goals.	Criterion C14.1: To what extent do EMFs/SEAs affect the efficiency of EIAs (i.e., reducing time and cost implications of EIA processes)? In general, and in this specific case study?
		Criterion C14.2: To what extent do EMFs/SEAs affect the effectiveness of EIAs (i.e., of value in assisting EIAs to deliver sustainable development outcomes)? In general, and in this specific case study?
		Criterion C14.3: To what extent is the strategic context (i.e., EMFs/SEAs) adequate in ensuring the achievement of the environmental right in a balanced manner?
	Assumption A15: EIAs are supported as essential instruments in tiering in environmental assessment for achieving environmental rights.	Criterion C15.1: To what extent does the EIA deal with the environmental right in a balanced manner?
		Criterion C15.2: To what extent does the EIA decision deal with the environmental right in a balanced manner?
		Criterion C15.3: In general, to what extent is EIA an effective tool to achieve sustainable development outcomes?
		Criterion C15.4: To what extent will tiering be of value to assist EIAs in delivering sustainable development outcomes?

Table 5-1: Evaluation framework

5.4 In-depth case studies

The case studies selected for this research included EIAs (Phase 3 in Figure 1-1) that were conducted for development proposals in accordance with the required regulatory EIA process (South Africa, 2014a), as well as the relevant strategic environmental context. In South Africa, the strategic environmental contexts are primarily represented by EMFs or SEAs (DEA, 2014). The analysis of the three case studies is presented in Chapters 6, 7, and 8, respectively, and represents Phase 3 of this research and addresses research objective 3.

A pragmatic, purposive approach was followed in the selection of case studies. The sampling of case studies was based on the following selection criteria:

- Selection Criterion 1: A project-specific EIA as the lowest EA tier was conducted, and an environmental authorisation/refusal was issued.
- Selection Criterion 2: Full access to the relevant case files and documentation existed.
- Selection Criterion 3: Key role-players are accessible for purposes of personal communication.
- Selection Criterion 4: The EIAs involve a level of complexity that requires the Environmental Assessment Practitioner (who takes primary responsibility for conducting the EIA process) and other key role-players to engage the strategic context within which the proposed development is located.

- Selection Criterion 5: A strategic environmental assessment tier, EMF and/or SEA, applicable to the EIA, has been conducted and is available.

The logical framework for how EIAs function within a tiered EA system in South Africa, as reflected in Chapter 4 using ToC, was consistent with international practices. Therefore, to achieve the research aim (i.e., to critically evaluate EA tiering in South Africa seen from an EIA perspective and to share the results towards improving EA practice for similar contexts internationally), a simplistic, multiple-case study design was chosen. Three cases were selected that were believed to be replications of the evaluation aim of this research. Therefore, selecting the three case studies was based on the prior knowledge of tiering in EA, as conveyed in the (ToC-derived) logical framework. Based on the well-structures and regulated nature of the EIA process in South Africa (Kidd *et al*., 2018), the selection of three (3) case studies was considered appropriate in meeting the requirements for generalisation, validity, and reliability (Rowley, 2002; Flyberg, 2006; Ridder, 2017; Yin, 2018). The complexities involved in tiered EAs and decision-making related to specific cases represent numerous and complex interactions to be identified and explained from document reviews and interviews. The intensity of data generation to deal with the potential causal explanations presented by the data interaction (documents and interviews) means that rich narratives emerged for each case study, providing in-depth insights into the nature of tiering. Every case study covered multiple years, including multiple documents. The EIAs associated with every case study included the legislation and policy informants, the application, scoping reports, authority and public consultation documents, specialist studies, environmental impact reports/base assessment reports, environmental authorisations (decisions), appeals, and appeal decisions. For the strategic context (in the form of a SEA or EMF), the documentation included the legislation and policy informants, the EMF/ SEA and its associated specialist reports, public consultation reports, PPPs derived from the SEAs/EMFs, as well as other horizontal tiering documents. Therefore, it was believed that saturation would be achieved using three case studies, meaning that additional case studies were unlikely to deliver additional insights (Flyberg, 2006; Creswell, 2014; Ridder, 2017; Yin, 2018). Also, the three case studies served a replication logic through which the findings have relevance beyond the case studies under investigation.

The three selected case studies were all situated in the Western Cape Province of South Africa. This selection was based on 1) the accessibility of the information (i.e., the Western Cape Government's information management was effective, and information was readily available), 2) the EA process followed was representative of South Africa as a whole, 3) the decision-making context was consistent with the rest of the country, 4) the EIA case studies represented three different types of development, 5) different decision-outcomes (i.e., two environmental

authorisations and one refusal, and 6) the author was familiar with the governance context within which the case studies were situated.

The selected case studies are listed in Table 5-2 and the protocol for referencing case studies and interviewees is contained in Table 5-3.

	Case Study Description	Case Study EIA	Strategic environmental context
Case study 1	The Rietkloof Case Study includes tiering between 2009 and 2019 of two EIA applications for the establishment of a wind energy facility (windfarm) and a SEA for wind farm renewable energy developments (the Renewable Energy SEA).	Rietkloof Wind Energy Development EIA (WSP, 2019)	Renewable Energy Strategic Environmental Assessment (DEA, 2015)
Case study 2	The George Rex case study includes tiering between two EIA applications for the same development between 2010 and 2019, and an EMF (conducted at a strategic level for the Garden Route). The proposed development comprised a mixed-use development with a sports, adventure, and tourism focus.	Penhill Mixed Development EIA (Aurecon, 2019)	City of Cape Town Integrated Environmental Management Framework (CoCT, 2013)
Case study 3	Penhill Case study includes tiering between an EIA application and the integrated Municipal Spatial Development Framework and Environmental Management Framework for the City of Cape Town. The proposed development was for a mixed-use urban development that includes residential, commercial, industrial, and agricultural components.	George Rex Development EIA (Ebersohn, 2022)	Garden Route Environmental Management Framework (Earth-Inc, 2010)

Table 5-2: List of Case Studies

	EIA case study		Strategic context case study	
Case study 1	The official who reviewed the EIA	Interviewee A1	The official in the Environmental Authority who coordinated the SEA	Interviewee A3
	The EAP (environmental consultant) who conducted the EIA	Interviewee A2	The EAP (environmental planning consultant) who conducted the SEA	Interviewee A4
Case study 2	The official who reviewed the EIA	Interviewee B1	The official in the Environmental Authority who coordinated the EMF	Interviewee B3
	The EAP (environmental consultant) who conducted the EIA	Interviewee B2	The EAP (environmental planning consultant) who conducted the EMF	Interviewee B4
Case study 3	The official who reviewed the EIA (interview declined)	Interviewee C1	The official in the Environmental Authority who coordinated the EMF	Interviewee C3
	The EAP (environmental consultant) who conducted the EIA	Interviewee C2	The EAP (environmental planning consultant) who conducted the EMF.	Interviewee C4
		Interviewee D1	North-West Province	

Interviews with officials performing environmental planning functions	Interviewee D2	Mpumalanga Province
	Interviewee D3	Kwazulu-Natal Province
	Interviewee D4	DFFE
	Interviewee D5	Western Cape Province
Interviews with environmental decision-makers	Interviewee E1	Western Cape Province
	Interviewee E2	Mpumalanga Province
	Interviewee E2	DFFE

Table 5-3: Protocol for referencing case studies and interviewees

5.5 Data Collection for in-depth case studies

The methods used to gather data (Table 5-5) for the in-depth case analysis included:

Document analysis included the following:

- The policies and legislation (including subordinate legislation) relevant to the case studies.
- The EIA information, including the application for environmental authorisation and its associated EIA documentation related to all the stages of the EIA process, the EMPr (that governs the implementation of environmental authorisations), the decision (i.e., the environmental authorisation/refusal), and appeals (where applicable).
- The relevant strategic environmental assessment context in the form of an EMF and/or SEA that was compiled for the geographical area and/or the sector within which the EIA case study was situated. The SEA and EMF documentation included all published documents used to inform the creation of the strategic environmental assessment context.

In addition to the document analysis, semi-structured interviews were also held with key case study role-players and experts (fulfilling environmental planning functions or regulatory decision-making functions in EA). The interviews were conducted in two broad categories: key role-players involved with EIA case studies and key role-players involved in the EMF/SEA related to the case study EIAs. Table 5-1 contains the guide to the interview questions posed.

Two types of EIA key stakeholders were interviewed:

- *EAPs (i.e., environmental consultants in private practice) responsible for compiling EIAs*: At the project level, the EAPs must be appointed to conduct project-level EIAs in accordance with the regulatory requirements of the EIA Regulations.
- *Authority case officer responsible for reviewing the EIA process information for decision-making*: At a project level, the decision-making authorities (defined as competent authorities in the EIA Regulations) are responsible for reviewing and deciding on applications for

environmental authorisation. These decision-making authorities are the state departments in provincial and national spheres of government that are responsible for environmental management. The case officer in the relevant decision-making authority was interviewed.

At a strategic assessment level (EMFs/SEAs), two broad categories of key case study role-players were identified as potential interviewees:

- *Environmental Planners appointed as external service providers (i.e., environmental consultants) responsible for compiling EMF/SEA:* In most instances, EAPs are responsible for conducting SEAs or EMFs. Whilst there are no legislative requirements for the procedures and content of SEAs, the procedural and content requirements of EMFs are legislated.
- *Officials within authorities responsible for developing EMFs and SEAs or coordinating the development of EMFs and SEAs:* The lead authorities responsible for conducting EMFs and SEAs are in all three spheres of government, but primarily the national and provincial governments.

5.6 Evaluation and ratings:

Different colour codes were used to evaluate the criteria. Every criterion was rated using the colour codes reflected in Table 5-4. These ratings applied by the researcher were based on the information contained in the case studies and supplemented by interviews. Although the rating was done by a single researcher, it can be measured against the information supplied and the reasoning in the allocation of the ratings.

Definition	Colour code	Application description
Conformance		'Conformance' – the highest rating a criterion could achieve and that the anticipated outcome was achieved.
Partial conformance		'Partial conformance' – some part of the outcome linked to the criterion was met, but the full anticipated outcome was not achieved.
Non-conformance		'Non-conformance' – the anticipated outcome linked to the criterion was not met, or attempted but not adequately met.

Table 5-4: Rating of Criteria

5.7 Cross-case and overall analysis and conclusions

The cross-case and overall analysis is presented in Chapter 9 and forms part of Phase 4 of this research, addressing research objective 3.

The methods followed for the overall analysis of South African tiering practices included:

- A comparative analysis of cases to identify possible patterns and relationships related to the tiering in EA. These patterns and relationships were used to identify the key factors influencing tiering practice EA in South Africa.
- General views of stakeholders on tiering in EA: During the case study reviews, some of the interviewees provided answers that applied beyond the case studies to tiering in EA in general. Further generic interviews were held with experts, consisting of environmental authority decision-makers and environmental planners in the environmental authorities in different provinces and at the national government (DEFF), responsible for environmental planning and regulatory decision-making.
- Relevant legislation and policy documents affecting tiering in EA were analysed.

Finally, this cross-case and overall analysis functioned as a stepping stone for the last phase (Phase 5) synthesis and conclusions.

TOC	Assumption	Review Criteria	Method of data collection			
			Review Case Study Documents	Case Study Interviews	General Interviews (country level)	Review policies and legislation
Design	Assumption A1: It is assumed that the environmental management policies and the legislative framework make clear provision for tiered environmental assessments and tiered decision-making, in support of establishing a credible, evidenced-based strategic context for EIAs.	C1.1		X	X	X
		C1.2:		X	X	X
		C1.3		X	X	X
	Assumption A2: Authorities are committed to developing institutional arrangements required to establish strategic context (tiers) to support project-level assessments and decision-making.	C2.1:		X	X	
		C2.2		X	X	
Input	Assumption A3: A relevant strategic environmental context is available in the form of a strategic level assessment and/or environmental management framework to guide assessment and decision-making at the project level	C3.1		X	X	X
	Assumption A4: Functional specialists provided clear guidance in setting a strategic context and the translation thereof into project-level inputs.	C4.1	X	X	X	
	Assumption A5: The strategic environmental context was the outcome of an evidence-based policy formulation and a credible environmental assessment process.	C5.1	X	X	X	X
		C5.2	X	X		
		C5.3	X	X		
	Assumption A6: The strategic environmental context is supported by relevant key role-players	C6.1	X	X		
		C6.2	X	X		
	Assumption A7: The preceding tiered environmental assessment considered both policy/legislation inputs (vertical tiers), as well as other sector inputs (horizontal/diagonal tiering).	C7:1	X	X		
		C7:2	X	X		
		C7:3	X	X		
Activities	Assumption A8: EAPs, in compiling the assessment and the review thereof, are aware of and understand the role of strategic contextual informants when conducting their duties.	C8:1	X	X		
		C8:2	X	X		
		C8:3	X	X	X	
		C8:4	X	X	X	
		C8:5	X	X		
		C8:6	X	X		
Outputs	Assumption A9: The EIA decision will validate and strengthen the strategic environmental context.	C9:1	X	X		
Immediate Outcomes	Assumption A10: Tiered environmental assessments provide clear guidance to lower tiers to facilitate sustainability outcomes at project level assessment and decision-making.	C10:1	X	X	X	
	Assumption A11: In considering what constitutes sustainability outcomes, stakeholders attached value to aligning project-level assessments and decisions to the strategic environmental context.	C11:1	X	X		
		C11.2	X	X		
Intermediate Outcomes	Assumption A12: The need for aligned/ integrated decision-making will promote the value of tiered environmental assessment to overcome sectoral interests	C12.1		X	X	
		C12.2		X		

	Assumption A13: The support for the value of tiering in environmental assessment results in allocating resources and establishing of institutional arrangements to support strategic-level assessments.	C13.1		X	X	
		C13.2		X	X	
Impacts	Assumption A14: The strategic context, through SEAs or EMFs, is actively contributing to sustainable development goals.	C14:1		X		
		C14:2		X		
		C14.3		X	X	
	Assumption A15: EIAs are supported as essential instruments in tiering in environmental assessment for achieving environmental rights.	C15:1		X		
		C15:2		X		
		C15:3		X		
		C15.4		X	X	

Table 5-5: Summary of methods of data collection used

CHAPTER 6: THE RIETKLOOF CASE STUDY (CASE 1)

This chapter addressed research objective 3 by evaluating tiering within the South African EA system, based on the Rietkloof Case Study. Section 6.1 introduces the Rietkloof case study. Section 6.2 provides a summary of the results of the case study analysis. Section 6.3 contains a detailed analysis based on the evaluation criteria per the ToC component. Section 6.4 discusses key observations from the Rietkloof Case Study. Section 6.5 presents the real-world ToC map and narrative for the Rietkloof Case Study based on the analysis contained in the preceding section.

6.1 Introduction

The Rietkloof Case Study involved tiering between 2009 and 2019 of two EIA applications for Wind Energy and an SEA for wind farm renewable energy developments (the Renewable Energy SEA). Figure 6-1 provides an overview of a timeline and sequence of events related to the SEA and the EIA applications.

The overall development, referred to as the 'Rietkloof development', was submitted by Rietkloof Wind Farm (Pty) Ltd. Although the development proposal went through various iterations, the final development of 60 turbines with a generation capacity of 183MW, 30km north of Matjiesfontein, in the Western Cape Province of South Africa (WSP, 2019). The development also included associated infrastructure such as electrical transformers and a substation, electrical cabling, and access roads (See Figures 6-2). The site was located in the undulating hills of the Karoo, a semi-arid environment.

In terms of the legal requirements of the NEMA (South Africa, 1998a) and the EIA Regulations (South Africa, 2014a), the proposed development triggered the need for the proponent (the applicant) to obtain environmental authorisation before commencing with the proposed development.

Ultimately Rietkloof Wind Farm (Pty) Ltd as the applicant was required to lodge two applications for environmental authorisation for the proposed wind farm and two environmental authorisations (decisions) were issued by the Department of Environmental Affairs (DEA) as the decision-making authority, the first on 23 November 2016 (DEA, 2016b) and the second on 16 September 2019 (DEA, 2019).

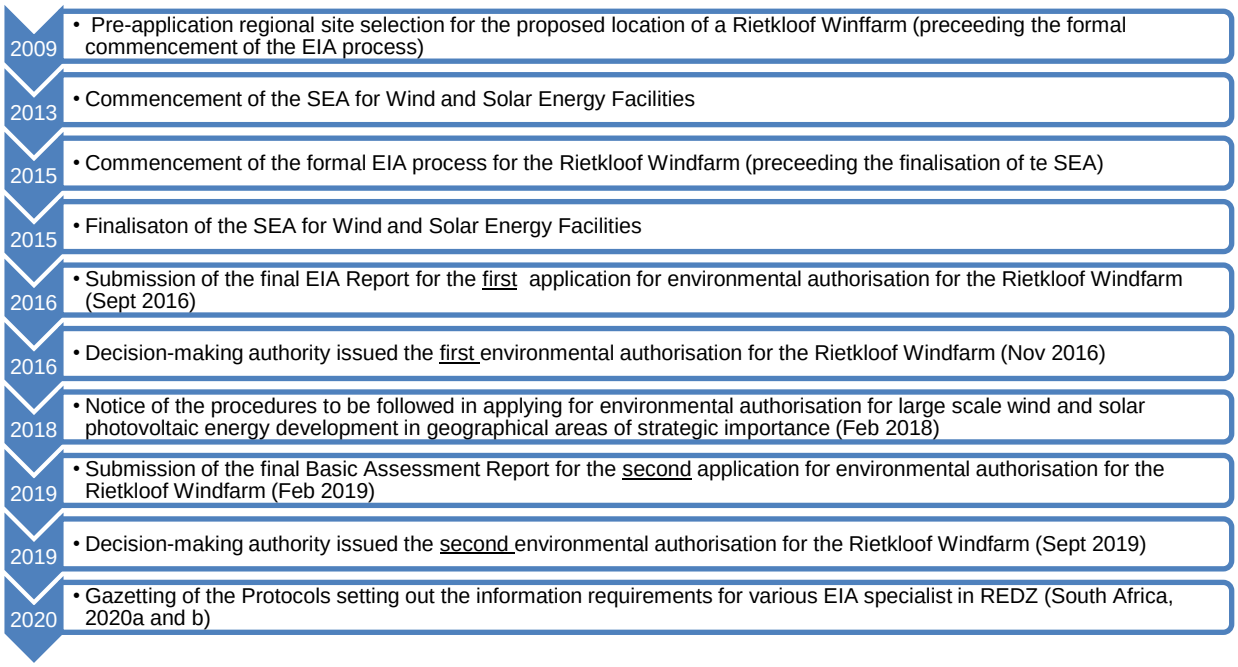

Figure 6-1: Timeline and sequence of events related to the Rietkloof Case Study

The timeline of events and decisions in Figure 6-1 is explained as follows:

- Pre-application site selection: In 2009, the applicant proceeded with a regional site selection process that culminated in the Rietkloof site being selected by the applicant as the preferred site alternative (CES, 2009). This site selection was based on a feasibility assessment conducted by the developer. No SEA or EMF existed to inform decision-making related to renewable energy developments at the time.
- The SEA: In 2013, preceding the first EIA application, a SEA for renewable energy development (specifically for solar and wind energy) was commissioned by DEA and finalised in 2015 (DEA, 2015). The purpose of the Renewable Energy SEA was to inform EIA decision-making on renewable energy projects in certain geographical areas (i.e., the REDZs). The SEA constituted a broad scoping-level assessment of the social and biophysical aspects of the environment, culminating in the production of sensitivity maps and the identification of the REDZs. The SEA also included protocols to guide specialists on information requirements. It is important to note that the SEA and related REDZ and protocols had no specific legal status at the time when the EIA was conducted and therefore served merely as a guiding document for decision-makers. Whilst these maps were based on the most relevant information available, it was highlighted not to be at the appropriate level of detail to replace the need for project-level assessments and decision-making. Moreover, the public participation process

that informed the SEA was not considered adequate to satisfy the EIA legal requirements. However, based on the SEA, the scope of the project-level assessments in the REDZs was informed by protocols setting out the information requirements for the various EIA specialists (e.g., biodiversity, agriculture, visual impacts, etc). The protocols also intended to address the relevant requirements of authorities in other sectors with decision-making mandates applicable to solar PV and wind energy projects (e.g., land use planning applications). The protocols only took legal effect in 2020 when it was adopted and gazetted (South Africa, 2020a and b). In summary, the outcome of the SEA was the identification of REDZs as geographical areas of strategic importance within which the development of renewable energy projects was to be promoted. However, the REDZs only took formal legal effect when it was adopted and gazetted in 2018 (South Africa, 2018).

- The first application: In 2016, consistent with the regulatory requirements, the Scoping and Environmental Impact Report process (S&EIR) was conducted in support of an application for environmental authorisation for 51 turbines with a generation capacity of 147MW (the first application). However, based on this original application, DEA, in reviewing the application, only authorised 9 turbines in November 2016 (DEA, 2016b). The decision to only authorise a limited number of turbines was strongly influenced by biodiversity considerations.

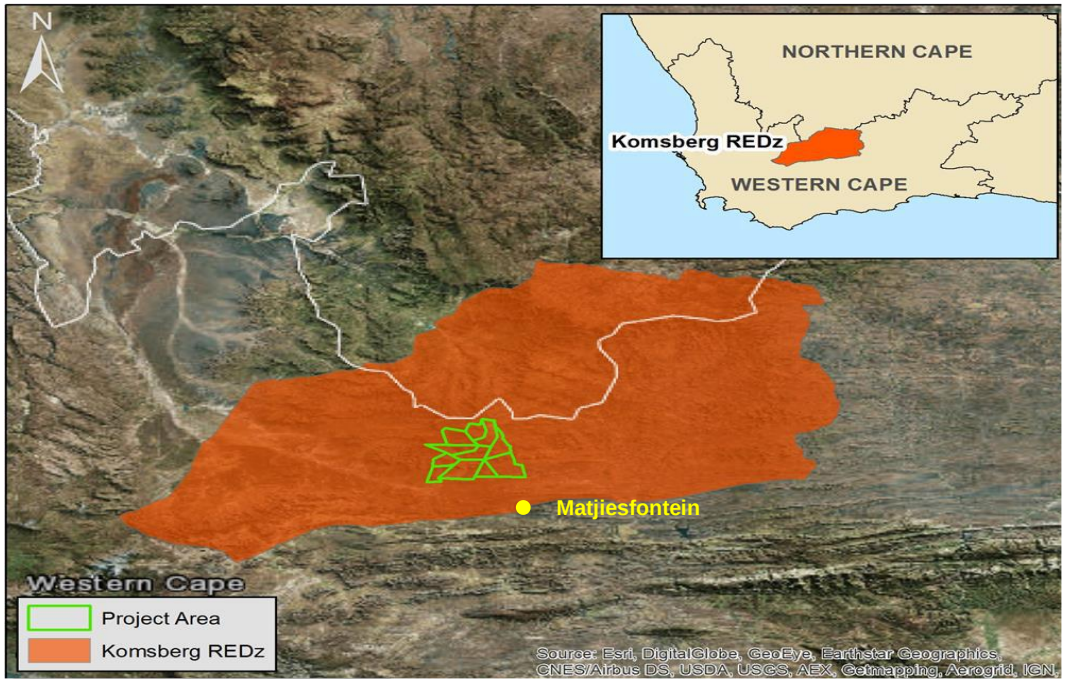

Figure 6-2: Site and Komsberg Renewable Energy Development Zone (WSP, 2019)

- Formalising the REDZs: The revised regulatory requirements for wind and solar PV developments were formally published in the government gazette in 2018. In accordance with Government Notices 113 and 114 (South Africa, 2018a and b), the REDZs were published,

requiring that, instead of a comprehensive S&EIR process, only a Basic Assessment (BA) process was required for any renewable energy project located in a REDZ.

- The second application: Subsequent to the gazetting of the REDZs and revised regulatory procedures, the same applicant lodged a second application. The final Basic Assessment Report (BAR) was submitted in September 2019 (WSP, 2019) for an additional 51 turbines on the same development site of the first application (excluding the location of the 9 turbines already authorised).

In summary, the total development comprised 60 turbines with a combined generation capacity of 183 MW (9 turbines authorised as part of the first application, and 51 turbines authorised as part of the second application), with the development site for the two applications being the same. The SEA was concluded before the lodging of the first application, but the REDZs and revised regulatory procedures only took effect in the period between the first and second applications.

6.2 Summary of results related to Rietkloof Case Study analysis

The extent to which the 15 assumptions that underpin the logical framework for EA support the Rietkloof Case Study, is depicted in Figure 6-3. From the 35 criteria that were evaluated for the Rietkloof Case Study, 13 conformed to expectations, while 15 partially conformed and 7 did not conform. The findings are presented in Table 6-1. The detailed findings for each criterion are discussed in the section to follow.

The rating of criteria as conforming, partially conforming or non-conforming (green, yellow and red colour coding, respectively) was the subjective evaluation of the researcher based on the detailed information contained in section 6.3.

ToC Component	**Assumption**	**Evaluation criteria**
Conformance	***Partial conformance*** / ***Non-conformance***	
Design Component	Assumption A1: It is assumed that the environmental management policies and the legislative framework make clear provision for tiered environmental assessments and tiered decision-making, in support of establishing a credible, evidenced-based strategic context for EIAs (and other project-level assessment and decision-making)	C1.1
		C1.2
		C1.3
	Assumption A2: Authorities are committed to developing institutional arrangements required to establish strategic context (tiers) to support project-level assessments and decision-making.	C2.1
		C2.2
Input Component	Assumption A3: A relevant strategic environmental context is available in the form of a strategic level assessment and/ environmental management framework, to guide assessment and decision-making at the project level	C3.1
	Assumption A4: Functional specialists provided clear guidance in setting a strategic context and the translation thereof into project-level inputs	C4.1

	Assumption A5: The strategic environmental context was the outcome of an evidence-based policy formulation and a credible environmental assessment process	C5.1
		C5.2
		C5.3
	Assumption A6: The strategic environmental context is supported by relevant key role-players	C6.1
		C6.2
	Assumption A7: The preceding tiered environmental assessment and/or environmental planning framework considered both policy/legislation inputs (vertical tiers), as well as other sector inputs (horizontal/diagonal tiering).	C7.1
		C7.2
		C7.3
Activity Component	Assumption A8: EAPs, in compiling the assessment and the review thereof are aware of and understand the role of strategic contextual informants when conducting their duties	C8.1
		C8.2
		C8.3
		C8.4
		C8.5
		C8.6
Output Component	Assumption A9: The EIA decision will validate and strengthen the strategic environmental context	C9.1
Immediate Outcome Component	Assumption A10: Tiered environmental assessments/ environmental management frameworks provide clear guidance to lower tiers to facilitate sustainability outcomes at project level assessment and decision-making.	C10.1
	Assumption A11: In considering what constitutes sustainability outcomes, stakeholders attached value to aligning project-level assessments and decisions to the strategic environmental context	C11.1
		C11.2
Intermediate Outcome Component	Assumption A12: The need for aligned/ integrated decision-making will promote the value of tiered environmental assessment to overcome sectoral interests	C12.1
	Assumption A13: The support for the value of tiering in environmental assessment results in allocating resources and establishing institutional arrangements to support strategic-level assessment	C13.1
		C13.2
Impact Component	Assumption A14: The strategic context (through SEAs or EMFs) is actively contributing to sustainable development goals	C14.1
		C14.2
		C14.3
	Assumption A15: EIAs are supported as essential instruments in tiering in environmental assessment for achieving environmental rights.	C15.1
		C15.2
		C15.3
		C15.4

Table 6-1: Analysis of criteria of the Rietkloof Case Study

6.3 Case study analysis per ToC component

This section presents the analysis of the Rietkloof Case Study according to the various ToC components and their relevant evaluation criteria.

6.3.1 The Design Component

The criteria developed to evaluate the assumptions made related to the Design component of the TOC map are set out in Chapter 5, Table 5-1. The performance of the case study against the relevant criteria is discussed in the following section.

Criterion C1.1: To what extent does the policy context promote tiering in environmental assessment and decision-making?

There was a well-developed policy context for renewable energy in South Africa. This included the National Development Plan 2030 (NDP) (National Planning Commission, 2012),[127] the 2003 White Paper on Renewable Energy Policy for South Africa (South Africa, 2004c), the Integrated Resource Plan 2010-2030 (or the IRP 2010) (South Africa, 2011).[128]

The SEA for wind and solar photovoltaic energy in South Africa (the Renewable Energy SEA) was initiated by the Department of Environmental Affairs in 2013 and concluded in 2015 (DEA, 2015). The Renewable Energy SEA creates tiering in EA related to the renewable energy sector. The SEA highlighted that "[t]*his SEA process bridges the gap between non-spatial national level policies, plans and programmes (i.e., the NDP, NIP, and IRP2010) and individual projects. The SEA specifically aims at providing strategic spatial guidance to allow for an integrated and streamlined implementation of national policies*." (DEA, 2015:8) The Renewable Energy SEA achieved this goal through the identification of Renewable Energy Development Zones (REDZs) as priority geographical areas where planning and regulatory processes for PV solar and wind projects can be streamlined. Importantly, from a tiering perspective, the SEA also states that "[t]*he SEA process is undertaken at a strategic level and cannot replace the requirement for project-level environmental assessment. The high level of environmental, social, and economic data utilised to identify and pre-assess the REDZs is not sufficient for project-level decision making in terms of environmental authorisation. The preassessment does, however, allow for the streamlining of project-level assessment processes*." (DEA, 2015:8)

The above-mentioned policies did not specifically promote tiering, but by conducting the Renewable Energy SEA, the national government intentionally created a tiering pathway (i.e., legislation, policies, programmes, and projects) in support of renewable energy. The tiering

[127] Chapter 5 of the NDP sets out the goal that South Africa must transition towards a low-carbon economy, creating a strong policy focus for renewable energy (National Planning Commission, 2012).

[128] The IRP sets out the energy mix for South Africa and puts a huge emphasis on the expanded use of renewable energy as part of the energy mix for electricity generation (South Africa, 2011).

relationship between the Renewable Energy SEA and Rietkloof EIA was well defined through the subsequent law reform as discussed in criterion C1.2 below.

Interviewees D4 and E3 confirmed that there was no specific policy context to promote tiering in EA and decision-making in general, or even for the renewable energy sector. However, the Renewable Energy SEA constituted a tiered assessment and enabled the identification of REDZ (as a planning output) and tiered decision-making by facilitating the development of revised regulatory procedures, thereby reducing the regulatory burden for the renewable energy sector in REDZ.

In summary, there was a clear strategic policy and planning context for renewable energy. From a tiering perspective, renewable energy (at a programme level) was supported by policies and plans (in the form of REDZ) and the regulatory provisions that flowed from the SEA, to guide project-level implementation.

Based on the above, this criterion was evaluated as conformed to.

Criterion C1.2: To what extent does the legislation include adequate enabling provisions to mandate tiering in environmental assessment, environmental planning, and tiered decision-making?

The legislation did not explicitly contain provisions that required the development of different tiers of EA. A more detailed discussion on the environmental legislation related to tiering was covered in Chapter 4.

The Rietkloof development triggered listed activities that were identified in terms of sections 24(2)(a) and (b) of the NEMA, and that required the applicant to obtain environmental authorisation for commencing with the development (South Africa, 2014a).[129][130] Under normal circumstances, the Rietkloof development would have been subjected to a Scoping and Environmental Impact Report process – this requirement was applicable on the first application. However, the outcome of the Renewable Energy SEA changed the regulatory requirements for

[129] On 4 December 2014, the Minister of Environmental Affairs promulgated new regulations in terms of Chapter 5 of the NEMA, viz, the EIA Regulations 2014 (Government Notices (GN) No. R. 982, R. 983, R. 984 and R. 985 in Government Gazette No. 38282 of 4 December 2014). These regulations came into effect on 8 December 2014.

[130] The EIA Regulations 2014 published in Government Notice (GN) No. R982, provide for the control of certain Listed Activities. These activities are listed in GN No. R983 (Listing Notice 1 – Basic Assessment), R984 (Listing Notice 2 – Scoping & EIA Process) and R985 (Listing Notice 3 – Basic Assessment) of 4 December and are prohibited until environmental authorisation.

renewable energy developments when located in REDZs. After the first application, but before the second application, the REDZs were gazetted in February 2018, with the revised EIA process to be followed when applying for environmental authorisation for large-scale wind and solar developments within the REDZs (South Africa, 2018a and b). Based on the revised regulatory process, the applicant was only required to conduct a Basic Assessment process because the project was situated in the Komsberg REDZ – one of the 8 REDZs identified through the Renewable Energy SEA.

The revised regulatory process was further supported through the development of protocols for specialist information, which, according to interviewees A2 and A2, significantly influenced the implementation of assessment and decision-making for the subsequent project-level tier.[131]

Interviewees D4 and E3 confirmed that the NEMA contained enabling provisions for developing various environmental management instruments, but the primary focus in South Africa was on EIAs. They both referred to the initiative DFFE was undertaking to improve the use of other instruments. Both interviewees considered that inadequate attention was being given to the strategic contexts within which EIA was conducted, and highlighted that the voluntary status of EMFs was a challenge in this regard. Both interviewees confirmed that the Renewable Energy SEA was initiated to specifically focus on improving regulatory efficiency in the renewable energy sector.

In summary, the NEMA as the framework legislation for environmental management in South Africa (South Africa, 1998a) did not specifically set a requirement for tiering in EA. However, it did contain provisions that could be used to create tiered EAs. The Renewable Energy SEA (although a voluntary instrument) was used as the foundation to establish a strategic context for renewable energy developments by identifying REDZ. In addition, as an outcome of the Renewable Energy SEA (although only implemented 2 years after the completion of the SEA), a revised, more streamlined regulatory process was published for such developments when located in REDZs. The Renewable SEA therefore created a clear tiered EA and decision-making pathway for renewable energy projects. This was, however, a specific intervention to address the political need for regulatory efficiency related to the renewable energy sector.

Based on the above, this criterion was evaluated as being conformed to.

[131] Procedures to be followed in applying for environmental authorisation for large-scale wind and solar photovoltaic energy development activities identified in terms of section 24 (2)(a) of the National Environmental Management Act, 1998, when occurring in geographical areas of strategic importance (i.e., REDZs).

Criterion C1.3: To what extent is there a need for policy and law reform to enable or improve tiering in environmental management?

The interviewees did not express specific views on the need for policy or law reform related to SEAs. Interviewee A3 expressed a view that policy and law reform were required in relation to EMFs. However, the interviewee emphasised that the specific nature of such policy and law reform must be deliberated within the sector and referred to two current initiatives that were in process. The first initiative related to the review of EMF practices (to improve it) (no reference available), and the second initiative was investigating the expanded use of other integrated environmental management instruments beyond the primary focus on the EIA instrument (DFFE, 2023). Both initiatives were national studies conducted by DFFE in conjunction with provincial authorities responsible for environmental management.

In more general replies not specifically related to the Rietkloof case study, Interviewees D4 and E3 thought that policy and law reform were required to clarify the use of the various IEM instruments, as no guidance was provided on when and how they should be used. They confirmed that the legislation made provision for several IEM instruments at different tiers and that the need for policy and law reform must be considered. The views of these interviewees were also consistent with the views of the authorities who participated in the national initiative to improve the use of IEM instruments (DFFE, 2023).

Interviewee D4 also highlighted the role of EMFs in pulling all functional planning inputs together into a single plan. He believed that EA was a dynamic space, and that law reform was required to address challenges - specific examples included the amendment to the EIA process to allow for “early exit” options, referring to the recommendations of the EIA Review Study (DPME/DEA, 2019), and the development of regulatory procedures for other instruments that were not used (e.g., risk assessments), in association with SEAs and EMFs. He highlighted that the Renewable Energy SEA and its associated outputs paved the way for similar initiatives that could promote tiering.

This criterion was evaluated as not being conformed to, meaning that the current policy and legislative context were inadequate and that policy and law reform were required.

Criterion C2.1: To what extent is there support for tiering in environmental assessment in South Africa and provinces?

The case study interviewees were uncertain how to reply to the question and had to be prompted. Once the theoretical concept of tiering was explained, the interviewees indicated that, in general, tiering was important to support EIAs. However, this general support was not replicated in practice in the EIA process, or the EIA decision – see discussion on criteria C6.1, C8.1 and C9.1.

In the more general replies not specifically related to the Rietkloof case study, Interviewee E3 regarded tiering as essential for support to EIA processes but believed that this was not implemented in practice. This view on general EIA practices was also consistent with the views expressed by interviewee A1 during the case study interview. Interviewee A3 supported the notion of tiering as essential for achieving sustainability outcomes, especially in providing a strategic context to address EIA shortcomings to facilitate sustainability outcomes. Interviewee D4 also supported the notion of tiering, but it was not implemented in practice, hence the need for policy and law reform to improve the use of other environmental management instruments, including EMFs and SEAs.

In summary, and from a tiering perspective, whilst the interviewees supported the notion of tiering, the case study performance did not reflect this 'in principle' support for tiering, as the strategic context was not poorly reflected in the case study EIA and the EIA decision.

Based on the above, this criterion was evaluated as partially conformed to.

Criteria C2.2: To what extent is there a specific strategy in the province to promote and implement strategic environmental assessment and /or environmental planning initiatives?

Interviewees A1, A2, A3, and A4 did not express an opinion on the specific strategy in the province or at DFFE to promote and implement strategic EA and /or environmental planning initiatives.

Interviewee E3 believed there was no specific strategy in DFFE on the use of strategic-level assessments, but expressed the view that pressures in certain sectors resulted in resources being made available to conduct SEAs (e.g., the renewable energy sector). However, no strategy provided a foundation for the allocation of resources, or when, or what integrated environmental management instruments were to be considered. Interviewees D4 and C3 also confirmed that DFFE did not have a strategy related to EMFs, although support was being given to SEAs.

This criterion was evaluated as not being conformed to.

6.3.2 The Input ToC Component

The criteria developed to evaluate the assumptions related to the Input ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study against the relevant criteria is discussed in the following section.

Criterion C 3.1: To what extent are all EIAs in the province supported by a strategic context provided for in an EMF/SEA?

This criterion applies to the specific case study, as well as the whole of South Africa.

As already highlighted, the Renewable Energy SEA applied to the Rietkloof EIA. No EMF was done for this geographical area. Other strategic documents that informed the strategic environmental context, were the SANBI conservation planning dataset/ maps related to critical biodiversity areas (CBAs) (SANBI, 2017)[132] and the National Screening Tool[133] (which constituted a collation of all the latest baseline information on all the functional specialist areas). These datasets, i.e., the versions thereof that were available when the Renewable SEA was conducted, were incorporated into the SEA.

Interviewees A1, A2, A3, and A4 confirmed that some applications for renewable energy developments were located outside the REDZ. Interviewees D4 and E3 confirmed that SEAs were only done for certain types of infrastructural developments and that EMFs were not available for all areas in South Africa, resulting in a reliance on other strategic informants such as SDFs and functional planning outputs such as biodiversity plans.

In summary, and from a tiering perspective, a strategic assessment context in the form of a SEA was available to inform the EIA process in the Rietkloof case study. However, strategic contexts in the form of SEAs or EMFs were not available across the country to inform EIA processes.

Based on the above, this criterion was evaluated as not conformed to.

Criterion C4.1: To what extent were functional professionals and specialists involved in and supported the development of the EMF/SEA?

This criterion dealt with the extent to which specialists informed the Renewable Energy SEA process. Interviewee A3 confirmed that the SEA made provision for a comprehensive list of independent specialists to be involved in the SEA process under the leadership of a lead consultant of the CSIR. Interviewee A3 confirmed that the lead authority was involved in all aspects of the SEA, including sensitivity analysis and development of protocols (see below).

The use of various specialists in the SEA process was also confirmed by interviewee A4, covering all the major specialist areas across the biophysical and socio-economic spectrum.

The review of the Renewable Energy SEA documentation also confirmed the involvement of specialists covering all the relevant functional areas. This information was used to identify REDZs and to formulate the protocols and new regulatory procedures for renewable energy developments located in REDZs (the latter discussed elsewhere in this case study) – i.e. the procedures to be followed in applying for environmental authorisation for large-scale wind and solar photovoltaic energy development activities identified in terms of section 24 (2)(a) of the NEMA when occurring in REDZs (South Africa, 2018b). The protocols were developed to provide guidance related to specialist inputs that were required at project-level EIAs.[134]

In summary, the specialist inputs into the Renewable Energy SEA process covered all relevant functional areas and were effectively used to identify REDZs, formulate revised regulatory procedures, and develop protocols. As such, the specialist inputs into the SEA process were effective in guiding project-level EIA processes.

Based on the above, this criterion was evaluated as conformed to.

Criterion C5.1: To what extent is the strategic environmental context the outcome of a credible, evidence-based, environmental assessment or environmental planning process that considered all components of the environment?

This criterion dealt with the Renewable Energy SEA and the extent to which it was the outcome of a credible, evidence-based EA or environmental planning process that considered all components of the environment.

Interviewees A3 and A4 were of the view that the Renewable Energy SEA was based on the technical/scientific inputs from various functional specialists (covering all components of the

[134] The protocols describe the type of assessments that should be done for the different sensitivity level represented in DFFE's online Environmental Impact Assessment screening tool for a particular theme (e.g., plants and animals).

environment) and extensive spatial analysis – i.e., a geospatial, science-based analysis to inform where the REDZ was to be situated. The SEA process included a stakeholder and public consultation process to identify issues and concerns and to determine the sensitivities in the study areas. However, the SEA analysis was primarily science-based with clearly stated (rational) criteria to determine sensitivities and impacts.

Interviewee A3 also confirmed that the SEA included socio-economic aspects and that a dedicated socio-economic assessment was done (and the only specialist study that was not strong on spatial analysis). The aim thereof was to identify areas where renewables were part of the planning vision of the area (at the municipal level) and would contribute to socio-economic development. The Renewable Energy SEA also focused on identifying areas of socio-economic decline that could benefit from such developments - these criteria were incorporated into the SEA's sensitivity analysis, also called 'pull factors'. Financial viability (from an applicant's perspective) was incorporated into the SEA by considering where proponents wanted to locate their projects, rather than an empirical study. This input was based on a survey of wind energy association members (anonymous) that was conducted as part of the SEA process. They were requested to indicate, using quarter-degree grid cells (100 km × 100 km grid cells), their preferred areas for the location of wind energy developments (over a 5- 10 and 10 – 15-year time horizon) - i.e. where they would like to locate wind energy developments. In the SEA process, this information was used as a positive mapping input (i.e., considered as a pull factor) (DEA, 2015)[135].

The review of the Renewable Energy SEA information confirmed the above. Based on the SEA information, it was clear that the strategic environmental context was the outcome of a credible, evidence-based, EA or environmental planning process (through constraints and opportunity mapping) that considered all components of the environment. The SEA included the following objective on sustainable development: "*A balance between environmental, social, and economic factors is required for effective and sustainable development. The SEA takes a strategic and integrated approach to identifying geographical areas in which large scale wind and solar PV development would be most appropriate. Integration is achieved through utilising the best available spatial data to identify large clusters of land with the highest economic potential (i.e., highest resource potential and infrastructure availability), highest social need (i.e., local municipalities with the highest need for development), and lowest environmental sensitivity (i.e., fewest environmental constraints)*" (DEA, 2015:8).

[135] Section 2 of the SEA for Wind and Solar PV in South Africa (DEA, 2015).

In summary, the strategic context, in the form of the Renewable Energy SEA, within which the Rietkloof EIA was located, was the outcome of a credible, evidence-based SEA process that considered all components of the environment.

Based on the above, this criterion was evaluated as conformed to.

Criterion C5.2: To what extent is the strategic environmental context current – i.e., has been compiled/updated within the last 5 years?

This criterion dealt with the Renewable Energy SEA and the extent to which it contained relevant and current information – i.e., being compiled/updated within the last 5 years.[136]

Interviewees A4 and A3, as well as the review of the Renewable Energy SEA, confirmed that the analysis was based on technical/scientific information that was 6/7 years old (completed in 2015). The REDZ was gazetted in 2018 (South Africa, 2018b). However, due to the low development pressure within the study area, the data was still regarded as relevant as the socio-economic and socio-ecological circumstances did not change significantly since (confirmed by interviewee A4 and supported by the information contained in the Laingsburg Municipality Integrated Development Plan and associated Laingsburg Municipal Spatial Development Framework (Laingsburg Municipality, 2017).

From a policy perspective, the strategic context was still relevant within the policy context created by the 2019 Integrated Resource Plan (IRP 2019) that promoted an increased focus on renewable energy up to 2030 (South Africa, 2019b).[137] Interviewee A4 expressed the view that the SEA was even more relevant now (insofar as identifying geographical areas to support the development of renewable energy projects) based on South Africa's commitments towards the Paris Agreement (United Nations, 2016) and the need for energy security (the latter being illustrated by the persistent implementation of electricity load shedding over the last 4-5 years).

In summary, the strategic context, in the form of the Renewable Energy SEA, within which the Rietkloof EIA was located, was credible and current at the time when the Rietkloof EIA was conducted, and when the environmental authorisation decision was made.

[136] The reference to 5 years is linked to the review periods for the political cycles of 5 years and many strategic planning documents such as Municipal Spatial Development Frameworks or Medium Term Planning Frameworks of government institutions, are linked to this 5-year planning periods.

[137] The IRP 2019 is the primary policy document that sets out the energy mix for South Africa for the next 20 years.

Based on the above, this criterion was evaluated as being conformed to.

Criterion C5.3: To what extent is the strategic environmental context the outcome of a consultative environmental assessment or environmental planning process?

This criterion dealt with the Renewable Energy SEA and the extent to which specialists informed the SEA process. Interviewees A3 and A4, as well as the review of the SEA, confirmed that the SEA process included a comprehensive consultation process with various role players (DEA 2015).[138] This included:

- A project steering committee that consisted of relevant authorities from national and provincial spheres of government.
- An expert reference group that consisted of national non-governmental organisations (NGO), Industry, CBO (national), and authorities.
- Public meetings in areas identified as REDZ (one at the start of the process and one at the end of the SEA process to present information/results).
- The publication of notices in the government gazette that requested public input on the formulation and establishment of the REDZ and the revised regulatory process.

The public consultation process was effective, but it must be acknowledged that the purpose of public consultation at this strategic level was not (and could not reasonably be expected) to reach and engage with all individual landowners in every REDZ.

In summary, the strategic context for the project-level EIA was the outcome of a comprehensive consultative strategic environmental assessment process that was effective at the SEA level.

Based on the above, this criterion was evaluated as conformed to.

Criterion C6.1: To what extent is the strategic environmental context used by the applicant, EAP, and specialists (i.e., the project team)?

[138] Appendix B to the SEA (DEA, 2015).

Interviews A1 and A2 were used to determine the extent to which the strategic environmental context that was created by the Renewable Energy SEA, was supported by other interviewees (key role-players such as the applicant and specialists).

Interviewee A2 confirmed that the SEA (specialist) information *per se* was not used in the EIA process, but that the outcome of the Renewable Energy SEA (i.e., the revised regulatory process that was established for all renewable energy projects located in REDZs), was used. In accordance with the revised regulatory process a Basic Assessment process (and not a more comprehensive S&EIR process) was followed. Interviewee A2 indicated that the applicant supported the outcome of the Renewable Energy SEA in establishing REDZ which, in general, benefitted applicants insofar as the regulatory timeframe was 57 days (rather than the normal 105 days).

Interviewee A1 highlighted that one of the main reasons for the second application was the change in the strategic context, meaning the gazetting of the REDZs and a revised regulatory process. Interviewee A1 also confirmed that the information in the SEA was not used, as the specialist information in the Rietkloof EIA was still based on impacts that were assessed as part of the first application in 2016. The interviewee confirmed, however, that the specialists were requested to provide an update of the specialist information to be included in the EIA process. According to Interviewee A1, the specialists assessed impacts regardless of (or independent of) the strategic context provided by the SEA. The specialist assessments were focused on the project study area (i.e., required more detailed assessments on the specific project area compared to the strategic-level assessment of the SEA over a wider area). Interviewee A1 did not express an opinion in support of the SEA (in providing strategic contextual information), but uncritically accepted the revised regulatory process, as legal requirements to be adhered to.

A review of the Rietkloof EIA documentation (WSP, 2019) confirmed that the key role-players (i.e., the applicant, EAP, specialists, and authority case officer) were aware of the strategic context without expressing any support for it. The review of the Rietkloof EIA information (WSP, 2019)[139] reflected on the strategic context by noting that the DEA (Department of Environmental Affairs, now, Department of Forestry, Fisheries and Environmental Affairs), in consultation with the Department of Energy (DoE), commissioned two SEAs to identify geographical areas most suitable for the rollout of wind and solar PV energy projects and the SEA supporting electricity grid infrastructure (EGI SEA) network (DEA, 2016a). The EIA[140] confirmed that the vision of the Renewable Energy SEA was commissioned to advance large-scale wind and solar PV projects

[139] Page 2-4 and 46 of the Final Basic Assessment Report (WSP, 2019)

[140] Page 2-4 and 46 of the Final Basic Assessment Report (WSP, 2019)

that contribute to the goals of the National Development Plan 2030 (NDP) and that it was supported by strategic planning of the Integrated Resource Plan (South Africa, 2019b), endorsed by government and supported by stakeholders and investors. It also highlighted the importance of the Renewable Energy SEA in supporting the government's drive to prioritise strategic infrastructure projects (SIPs).[141] The Rietkloof EIA report indicated that the SEA on the Electricity Grid Infrastructure (EGI) (DEA, 2016a) was closely aligned to SIP-10: Electricity Transmission and Distribution (South Africa, 2014c), aimed at guiding the efficient and sustainable expansion of strategic electricity grid infrastructure in South Africa by identifying strategic EGI corridors. The EGI SEA also supported the Renewable Energy SEA by facilitating the construction of the electricity infrastructure to support wind and solar PV development in the REDZs. The BAR stated that "[t]*he current application is submitted as a result of the revised CBA datasets the promulgation of the REDZ and the proposed conservation mitigation measures (ultimately a site-specific Conservation Management Plan, which mitigates the negative ecological impacts to an acceptable and feasible level)*" (WSP, 2019:3). The change in the systematic conservation planning context played a significant role in the applicant's decision to lodge the second application. This change in the strategic biodiversity context took place after the Renewable Energy SEA was finalised (SANBI, 2017).

The submission of the second application indicated that the applicant and the EAP (confirmed by Interviewee A2) were confident that the second application would be more successful than the first application (when only 9 turbines were authorised at a time when the SEA was completed but the REDZ had not been formally gazetted). In the pre-application meeting with the decision-making authority, the applicant clearly stated that they wanted to use the revised strategic context to submit a new application. Interviewee A2 was equally aware of the strategic context (i.e., the gazetted status of the REDZs and the reduced regulatory requirements) and used it to confirm the revised application process.

The Rietkloof BAR (WSP, 2019) confirmed that the EAP (Interviewee A2) informed the specialists of the changes to the regulatory context and that the proposed development was located in a REDZ. Most of the specialists acknowledged this change in the strategic context, but there was no clear evidence that this changed the findings of most of the specialist inputs to the Rietkloof EIA:

[141] SIP 8 constitutes one of 18 types of strategic infrastructure - SIP 8 is renewable energy projects and SIP 10 deals with electricity transmission and distribution. The list of SIPs is contained in Schedule 3 of the Infrastructure Development Act, 2014 (South Africa, 2014c).

- The agricultural, soil, and land capacity assessment (WSP, 2019)[142] did not refer to the strategic environmental context.

- The aquatic specialist report (WSP 2019)[143] did not refer to the strategic context provided by SEA 1, or the location of the site in the REDZ.

- The biodiversity assessment (WSP, 2019)[144] did acknowledge the fact that the site was located in the Komsberg REDZ and that a reduced regulatory process was followed. However, the strategic context of the Renewable Energy SEA did not influence the specialist assessment. The assessment also acknowledged the cumulative impact of other wind farms in the area. The change in the biodiversity strategic context provided by the updated SANBI information (SANBI, 2017) was considered by the specialist.

- The avifaunal assessment (WSP, 2019)[145] did acknowledge that the site was located in the Komsberg REDZ and that a reduced regulatory process was followed. However, the strategic context did not influence the specialist assessment. The assessment also acknowledged the cumulative impact of other wind farms in the area.

- The bat assessment (WSP, 2019)[146] also acknowledged the strategic context, but it did not influence the specialist assessment.

- The visual assessment WSP, 2019)[147] was one of the only specialist assessments that engaged substantively with the strategic context in discussing the visual impacts of the development. It stated that the visual impacts cannot be fully mitigated, but that the residual impact must be considered within the strategic context provided by the Renewable Energy SEA. The specialist study did use the strategic context in the discussion of cumulative impacts and noted the following: "*…..development of multiple wind energy facilities, at this scale, will change the character of this remote area significantly. However, it should also be noted that the area is located within a REDZ ……. By clustering developments, it will effectively reduce the visual impact on a regional scale as impacts will be experienced in one area as opposed to many different areas.*" (WSP, 2019:49).[148] The Rietkloof EIA also concluded by stating "[*i*]*t is concluded that potential losses of scenic resources are not*

[142] Appendix G to the Basic Assessment for the Rietkloof Windfarm.

[143] Appendix H to the Basic Assessment for the Rietkloof Windfarm

[144] Appendix I to the Basic Assessment for the Rietkloof Windfarm

[145] Appendix J to the Basic Assessment for the Rietkloof Windfarm

[146] Appendix K to the Basic Assessment for the Rietkloof Windfarm

[147] Appendix L to the Basic Assessment for the Rietkloof Windfarm

[148] Page 49, Appendix L to the Basic Assessment for the Rietkloof Windfarm

sufficiently significant to present a fatal flaw to the proposed project. It is, therefore, recommended that the project proceed, on condition that the mitigation measures identified in this VIA are met throughout the various phases of the development." (WSP, 2019:57).[149] Importantly, therefore, the strategic context did not influence the mitigation hierarchy, but rather influenced the trade-off between different impacts (i.e., it was used to motivate that the residual visual impact was an acceptable trade-off when considering the strategic context). However, this approach was not consistently used by all the specialists.

- The noise impact assessment acknowledged the strategic context, but it did not influence the specialist assessment (WSP, 2019).[150]

- The heritage impact assessment acknowledged the strategic context, but it did not influence the specialist assessment (WSP, 2019).[151]

The specialists accepted the REDZ and revised regulatory procedures uncritically and none of the specialist studies identified fatal flaws and supported the development subject to the implementation of mitigation measures. Visual impacts of high significance (after mitigation) were found to be acceptable considering the socio-economic benefits of renewable energy. This, to a certain extent, supports the strategic context provided by the Renewable Energy SEA that identified the Komsberg REDZ as an area suitable for wind energy developments.

The decision-making authority was aware and in support of the strategic context. This determination is based on the information conveyed during the pre-application meeting between the applicant, EAP (WSP, 2019)[152] and that the authority accepted that the second application was to follow the revised regulatory process.

In reviewing the Rietkloof EIA information it was determined that whilst the strategic context may well have influenced the EIA decision-making process and that the officials were well aware of the strategic context in supporting renewable energy in the REDZ, this was not well argued (conveyed) in the environmental authorisation that was issued (DEA, 2019).

The 'Need and Desirability Guideline' (DEA, 2017c) was not used by the decision-maker -i.e., 'need and desirability' was not considered and reflected in the environmental authorisation as

[149] Page 57, Appendix L to the Basic Assessment for the Rietkloof Windfarm

[150] Appendix M to the Basic Assessment for the Rietkloof Windfarm.

[151] Appendix N to the Basic Assessment for the Rietkloof Windfarm.

[152] Appendix E to the Basic Assessment for the Rietkloof Windfarm.

was required by the EIA Regulations (DEA, 2014)[153]. The concept of 'need and desirability' requires that the need for development, the timing, and placement thereof must be motivated and considered during the EIA process and decision-making (DEA, 2017c). The EIA Regulations (South Africa, 2014a) dictate that when considering an application for Environmental Authorisation, the decision-making authority must, consistent with section 24O of the NEMA, consider any guideline published in terms of section 24J of the NEMA and any minimum information requirements for the application. This includes the 'Need and Desirability Guideline' (DEA, 2017c).

In summary, during the EIA process, apart from the visual impact specialist, the key stakeholders did not consider the tiered information contained in the Renewable Energy SEA, but they were aware of and used the outcome of tiering (i.e., the revised regulatory process for projects located in the REDZs). In implementing the revised regulatory process, the SEA was accepted without any clear support (or non-support) expressed towards the merits thereof. Apart from the visual specialist assessment, the strategic context provided by the Renewable Energy SEA was not used in the reasoning on impacts or the significance of impacts during the EIA process. Tiering therefore, happened uncritically.

Based on the lack of critical engagement with the strategic context by the key stakeholders (beyond the mere use of the revised regulatory process), the extent to which the strategic environmental context used by the applicant, EAP, and specialists, was evaluated as partial.

Based on the above, this criterion was evaluated as being partially conformed to.

Criterion C6.2: To what extent, with regard to the EIA process, is the strategic environmental context in the EMF/SEA supported by the other relevant stakeholder groupings across different sectors?

Interviewee A2 expressed the opinion that there was a low level of awareness of the Renewable Energy SEA amongst other stakeholders in other sectors (such as agriculture, heritage, or water) and that the only informed sector stakeholders were DFFE and environmental authorities in provinces. Also, the interviewee thought that the SEA did not influence any of the regulatory requirements of other sector authorities, which further lessened their interest in the SEA and its outcomes. These other regulatory requirements referred to water use licenses in terms of the Water Act, waste management licenses in terms of the Waste Act, permits for protected plants in

[153] Regulation 2, 3, Appendix 2 and Appendix 3 of the EIA Regulations, 2014.

terms of relevant conservation legislation, etc. Therefore, according to Interviewee A2, beyond the regulatory relief related to the EIA process, there were no other real benefits derived from the SEA.

Interviewee A2 was also of the opinion that the interested and affected parties (or stakeholders) did not care whether the project was in a REDZ and that they were only interested in how the project's impacts would affect them. They were not specifically concerned that a basic assessment, rather than a more comprehensive S&EIR process, was followed. The affected parties were not concerned about the process and Interviewee A2 highlighted that in general, (based on the EAP's involvement in other BA and Scoping/EIR processes), parties were concerned about impacts regardless of the process and regardless of being located in a REDZ or not. Also, Interviewee A2 believed interested and affected parties would lodge appeals against the decision regardless of the presence of the SEA.

Interviewee A2 also highlighted the difference in stakeholder consultation between the SEA and EIA in that it was unlikely that all individual landowners in the SEA study area were contacted during the SEA process (and could reasonably expect to be contacted as part of an SEA process). As such, it was possible that some of the affected parties /landowners only became aware of the SEA during the EIA process. The interviewee was not sure how this challenge (i.e., different levels of public consultation and differences in knowledge sharing with stakeholders during the SEA vs the EIA) can be fixed.

According to Interviewee A1, the Rietkloof EIA process did not necessarily create the space for stakeholders to express their opinions on the SEA outcomes. Interviewee A1 also expressed the opinion that regardless of their support for the SEA process in general (if they were aware of it), there was still the presence of a NIMBY (not in my backyard) effect when specific projects were at hand. Therefore, Interviewee A1 did not know if the stakeholders supported the Renewable Energy SEA or not, but confirmed that, where the Rietkloof Windfarm was concerned, some stakeholders had issues and concerns (e.g., the adjacent farmers not supporting the development of a wind farm).

The review of the Rietkloof EIA documentation confirmed that neighbouring farmers did not support the development. Based on the comments that were submitted during the public participation process for the Rietkloof EIA, more than one interested and affected party (stakeholders) questioned whether the original application was completed with a decision and questioned how the "same application" could be submitted again (WSP 2019).[154] These

[154] Appendix E to the Basic Assessment for the Rietkloof Windfarm

stakeholders did not, therefore, change their views based on the changed strategic context (i.e., the gazetting of the REDZ and revised regulatory requirements) that happened between the first and second applications. Their objections remained the same as submitted for the first application. None of these interested and affected parties referred to the Renewable Energy SEA in their comments.

In summary, no clear statement of support or non-support for the strategic context was voiced by other sector stakeholders. The relevant Municipality, through their SDF, was supportive of the strategic environmental context provided by the SEA (Laingsburg Municipality, 2017), but did reflect on the SEA information to discuss sustainability or the appropriateness of renewable energy developments. The conservation authority's concerns were addressed, and by implication, they were supportive of the revised strategic context. Considering the negative comments and appeals submitted (mainly landowners near the development), some of the stakeholders, by implication, did not support the strategic context (i.e., the existence of the REDZ in support of wind energy developments). All the correspondence from neighbouring farmers that was included in the EIA documents objected to the development (consistent with their views expressed during the initial application). The existence of the REDZ did not change their opinions about the development. Regarding tiering in EA, the public indicated no awareness of tiering (and the information supplied by it), or even if they were aware of it, they attached no value thereto.

Based on the above, this criterion was evaluated as partially conformed to.

Criterion C7.1: To what extent is the EMF/SEA considered in, and consistent with the SDF?

Interviewee A4 was of the opinion that the Renewable Energy SEA did consider the municipal SDF and that this informed the socio-economic inputs into the SEA process. Interviewee A4 did not know if the SEA was considered in the SDF, apart from highlighting that the SDF was broadly supportive of renewable energy development as an important economic opportunity for the Karoo region, which generally provided few economic growth opportunities. Interviewee A3 reflected the same opinion as Interviewee A4.

The review of the Renewable Energy SEA documentation did not reflect any inconsistencies between the SEA and the Laingsburg Municipal SDF and confirmed that renewable energy development was regarded as an important economic growth opportunity for the Karoo region. The information in the SDF also informed the identification of socio-economic issues, including the identification of 'pull factors' in the identification of REDZ – e.g., identification of areas of depressed socio-economic conditions that will benefit from renewable energy development.

The Laingsburg Municipal SDF also referred to the Renewable Energy SEA and the identification of REDZs to promote renewable energy initiatives. It highlighted the location of the Komsberg REDZ, which partly fell into the municipal boundary. As such, the SDF was also informed by the Renewable Energy SEA (Laingsburg Municipality 2017) but did not use the SEA information to discuss sustainability or the appropriateness of renewable energy developments.

In summary, the Renewable Energy SEA was informed by the Municipal SDF, and the latest Municipal SDF (Laingsburg Municipality, 2017) was informed by the SEA. As such, horizontal tiering took place between EA and land use planning.

Based on the above, this criterion was evaluated as being conformed to.

Criterion C7.2: To what extent is the strategic environmental assessment and planning context informed by policy/legislation inputs (vertical tiers) where applicable?

The policy context for renewable energy as reflected in the EIA dates back to the 2003 White Paper on Renewable Energy Policy for South Africa (South Africa, 2004c), setting a country target that 1667MW (4%) of the electricity generation should come from renewables by 2013.

Implementation of renewable energy developments was done through the government's procurement programme that enabled the procurement of electricity from different generation technologies from independent power producers (IPPs). However, the required Power Purchase Agreements (PPAs) with IPPs were never concluded. Also, the Energy Feed-In-Tariff programme that was developed by the National Energy Regulator of South Africa, allowing ESKOM to purchase electricity from IPPs, was not implemented. In 2011, the Department of Energy (DoE) published the Integrated Resource Plan 2010-2030 (or the IRP 2010) (South Africa, 2011), providing a long-term plan for electricity generation from different energy sources for the country. According to the IRP 2010, South Africa's electricity generation was to be doubled using a combination of coal, imported electricity, nuclear, gas, and renewable (wind, CSP, and solar PV) as energy sources. At the time, the IRP claimed to be the outcome of a rational, technical planning process to assess electricity needs to determine the optimal mixture of electricity generation options that is the most cost-effective to the economy, to ensure a reliable, secure electricity supply, based on demand projections for the medium term. Further to the cost considerations, the IRP also incorporated other factors/scenarios to meet various policy, socio-economic, and socio-ecological imperatives. These factors included meeting international obligations related to the reduction of carbon emissions, adherence to environmental legislation, minimising water use, and optimising employment opportunities.

Subsequently, also in 2011, the DOE and the National Treasury launched the Renewable Energy Independent Power Producer Procurement Programme (REI4P) (Eberhard & Naude, 2016). The REI4P enabled the procurement of electricity from renewable sources from IPPs, through a competitive bidding process, consistent with the targets set in the IRP. Successful bidders under the REI4P could then enter into a 20-year PPA with ESKOM.

In 2012, South Africa's National Development Plan 2030 (NDP) was officially adopted, setting strategic objectives and targets towards the elimination of the country's poverty and reducing inequality by 2030 (National Planning Commission, 2012). Importantly, Chapter 5 of the NDP also sets the country's objective for the transformation towards a low-carbon economy by 2030. The key job creation driver in the NDP was identified as infrastructure development (National Planning Commission, 2012), and in 2022, the National Infrastructure Plan (NIP) was adopted by the South African Government (South Africa, 2022). The Presidential Infrastructure Coordinating Commission (PICC) was established in terms of the Infrastructure Development Act (South Africa, 2014c) to drive service delivery through infrastructural development. The PICC identified 18 Strategic Integrated Projects (SIPs) to promote and accelerate the development and expansion of social and economic infrastructure. The SIPs included 3 categories that focused on the energy sector in support of economic growth - SIP 8, which focused on green energy, SIP 9 on electricity generation and SIP 10 on electricity transmission and distribution. However, it was especially SIP 8 that provided the strategic context for the implementation of sustainable green energy initiatives as envisaged in the NDP and IRP 2010.

Interviewees A4 and A3 indicated that the policy and legislation context did inform the SEA process and that this was documented in the Renewable Energy SEA. Interviewee A4 also expressed an opinion that the SEA was even more relevant at the time of the research (insofar as identifying geographical areas to support the development of renewable energy projects) based on IRP 2019, South Africa's climate change commitments towards the Paris Agreement and the need for energy security (the latter being illustrated by the persistent implementation of electricity load shedding).

As already discussed in Criterion C1.1, the Renewable Energy SEA created an environmental policy and planning context for the renewable energy sector. The SEA confirmed that *"[t]his SEA process bridges the gap between non-spatial national level policies, plans and programmes (i.e., the NDP, NIP, and IRP2010) and individual projects. The SEA specifically aims at providing strategic spatial guidance to allow for an integrated and streamlined implementation of national policies*." (DEA, 2015).[155] The Renewable Energy SEA achieved this goal through the

[155] Page 8 on the SEA.

identification of REDZs as priority geographical areas where planning and regulatory processes for PV solar and wind projects can be streamlined.

In summary, the strategic environmental context was informed by policy/legislation inputs, and more importantly, the SEA contributed to setting a policy and planning context for renewable energy projects. Therefore, insofar as the renewable energy sector is concerned, there was vertical tiering between the policy, strategic assessment, and project-level assessment.

Based on the above, this criterion was evaluated as conformed to.

Criterion C7.3: To what extent is the strategic environmental context provided in the EMF/SEA, informed by other sector strategic planning inputs (horizontal/diagonal tiering)?

Interviewee A4 confirmed that the Municipal Integrated Development Plans and its associated SDFs (as a source of socio-economic input) (Laingsburg Municipality, 2017) and biodiversity strategies (SANBI, 2017) were considered during the Renewable Energy SEA process, as well as the appointment of various specialists who considered strategic documents and legal requirements related to their various functional areas of expertise. Reviewing the SEA information confirmed that many of the sector inputs have been considered by the various specialist inputs during the SEA process (considering various datasets at regional and national levels, legislation, policies/strategies, and guidelines):

- Agriculture – the SEA determined agricultural sensitivities by considering the existing data on land capability that is available at a scale of 1:250 000 for the country as a whole. The SEA also considered the *Guidelines for the evaluation and review of applications pertaining to renewable energy on agricultural land* – compiled by the Department of Agriculture, Forestry and Fisheries (DAFF, 2011).
- Heritage and Scenic Resources – various inputs were considered, including the evaluation of an international guideline (Scottish National Heritage, 2014) and national legislation (South Africa, 1999).
- Terrestrial and aquatic biodiversity sensitivity – various national and regional biodiversity data layers were considered, including Mucina and Rutherford (2008) and Kirkwood *et al.* (2011).
- Avifauna – including best practice guideline documents compiled by BirdLife South Africa (Jenkins *et al.*, 2015) various databases, were considered.

- Socio-economic (planning) considerations[156] included:
  - National legislation and policies - e.g., National Energy Act (South Africa, 2008c), The White Paper on Renewable Energy (South Africa, 2003c), The New Growth Path Framework (South Africa, 2011b), The Integrated Resources Plan 2010 -2030 (South Africa, 2011a), National Development Plan 2030 (Planning Commission, 2012) and other strategic documents reflecting on the macro socio-economic context and objectives for South Africa.
  - Provincial policies - Provincial Growth and Development Strategies, Renewable Energy Strategies, Provincial Local Economic Development Plans, Spatial Development Frameworks, and various strategic documents relevant to the socio-economic situation and objectives, affected provinces and their developmental priorities.
  - Local/municipal context – SDFs (for provincial, regional, district municipalities, and local municipalities), Local Economic Development strategies, and Integrated Development Plans for Municipalities.

In summary, Interviewee A4 and the review of the Renewable Energy SEA information confirmed that the SEA was informed by other sector strategic planning inputs. Therefore, horizontal/diagonal tiering did take place.

Based on the above, this criterion was evaluated as conformed to.

6.3.3 The Activity ToC Component

The criteria developed to evaluate the assumptions made related to the Activity ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criteria C8.1, C8.2, C8.3, C8.4, C8.5, C8.6 and C8.7 as discussed in the following section.

Criterion C8.1: Are the key role-players made aware of the existence of the EMF/SEA and the role thereof?

The applicant was aware of the Renewable Energy SEA insofar as the outcomes thereof were the gazetting of the REDZ and that it made the regulatory process shorter but not necessarily

[156] Appendix A of the Renewable Energy SEA contains various specialist studies that reference policies, legislation and various datasets used in the SEA process.

easier (Interviewee A2). The EAP could not recall if the specialist made specific comments regarding the SEA in their report, but stated that the specialist issues and inputs stayed the same between the first and second applications (Interviewee A2). The only real change was that the regulatory process required them to only do one report as part of the BA process (compared to a scoping and specialist report required during the first application). For example, the presence of the Critical Biodiversity Areas did not become less important because it was in a REDZ. The review of the BA confirmed that the SEA information was not used. The key role-players may have been aware of the SEA, but it does not change the significance (rating) of impacts. When prompted, Interviewee A2 reflected that the "social" (compared to biophysical) specialists more readily considered the change in the strategic context brought about by the SEA outcomes. This focus on social aspects was the outcome of the Socio-Economic Scoping Assessment Report (DEA, 2015)[157] that was conducted at a broader scale as part of the SEA process (i.e., its findings being dependent on strategic contextual informants).

Interviewee A1 indicated that the EIA process and the EIA documentation included information on the strategic context created by policies, legislation, and the SEA. In being presented with the EIA documentation, all stakeholders would have been made aware of the strategic context and the changes thereto between the first and the second application. However, whilst the stakeholders may have understood the change in the strategic context, it did not change their opinion about the specific project. Interviewee A1 also expressed the view that the declaration of an area as a REDZ (i.e., publication in the government gazette) did not eliminate impacts and did not negate the need for an assessment of such impacts.

The review of the Rietkloof EIA documentation, as already discussed, indicated that the applicant, the Interviewee A2 (EIA EAP/consultant), and the officials (decision-makers) were aware of the changed strategic context. It provided the foundation to re-apply for the same type and scale of development with the expectation of receiving a different outcome compared to the first application where only 9 of the proposed 60 turbines were authorised.

In summary, and from a tiering perspective, the key role-players were made aware of the existence of the Renewable Energy SEA, that the outcomes thereof were the gazetting of the REDZ, and that a revised regulatory process.

Based on the above, this criterion was evaluated as being conformed to.

[157] See Appendix A1 to the SEA for Renewable Energy (DEA 2015)

Criterion C8.2: To what extent is there clear evidence in EIA documentation that the strategic environmental context was considered at project-level assessments?

The BAR (part of the Rietkloof EIA documentation) (WSP, 2019) specifically highlighted the following changes in the strategic context from the 2016 EIA application to the second application:

- Critical biodiversity areas (CBA) datasets were revised by SANBI (SANBI, 2017).
- Publication of the REDZs (based on the SEA) in the Government Gazette (South Africa, 2018b).
- Release of the draft IRP 2019, which increases the planned generation capacity from wind energy (South Africa, 2019b).
- Proposal by Rietkloof to implement a Conservation Management Plan (WSP, 2019).[158]

The changed strategic context was considered during the EIA process, especially the revised regulatory process for renewable energy applications located in REDZs. From a substantive/technical perspective, the SEA's technical/specialist information *per se* was not used and a primary reliance was put on the specialist information gathered during the EIA process. Also, protocols were developed based on the SEA information, specifying the types and levels of specialist information that were required for different levels of sensitivity. However, the specialist studies did not reference the protocols at all. The biodiversity specialist also did not rely on the Renewable Energy SEA as an information source, but relied on the revised biodiversity information provided by SANBI (SANBI, 2017).

In the 'Need and Desirability'[159] section of the EIA, the strategic context (i.e., the location of the development site in the Komsberg REDZ) was used to motivate that the site was suitable for renewable energy. The reasoning for 'need and desirability' was required in terms of the EIA Regulations (South Africa, 2014a).[160]

There was no clear evidence that the change in the strategic context influenced the level of information provided during the Rietkloof EIA process. One of the main reasons for this was that the specialists all maintained that the information that was gathered for the original EIA process was still relevant for the second application that took place after the publication of the REDZs:

[158] See Appendix I (Fauna & Flora Specialist Impact Assessment Report and Conservation Management Plan) to the Basic Assessment Report (WSP 2019).

[159] Section 6 of the Final Basic Assessment Report (WSP, 2019).

[160] Regulation 2, 3, Appendix 2 and Appendix 3 of the EIA Regulations, 2014.

One of the benefits of being located in a REDZ was that it negated the need for identifying and considering geographical alternatives (not referring to micro-placement of turbines) - see discussion under Criterion C8.3. The Rietkloof EIA did state that the location of the proposed development in the Komsberg REDZ contributed to (strengthened) the applicant's decision to lodge a second application (WSP, 2019).[161]

As already noted, protocols were developed as part of the SEA, to guide EIA processes on specialist information requirements for the different sensitivities of different zones that were developed as part of the Renewable Energy SEA. However, the specialist studies in the Rietkloof EIA did not discuss the protocols or indicate how (and if) this influenced the specialist studies. It must also be noted that the protocols were only given legal effect when it was published (gazetted) in 2020 (South Africa, 2020a, b; c).

In summary, beyond the use of the revised regulatory process based on the location of the Rietkloof Windfarm in the Komsberg REDZ, and using SEA information in motivating 'need and desirability', the Rietkloof EIA documentation did not demonstrate any extensive use of the Renewable Energy SEA information during the EIA process for the second application. Reliance was primarily placed on the specialist information gathered during the EIA process. The Rietkloof EIA did, however, use the change in the strategic biodiversity context (as provided by SANBI) to motivate for a more favourable consideration of the application. Therefore, there was a lack of vertical tiering in the use of the SEA information in the EIA process, although tiered decision-making did take place (i.e., the use of the revised regulatory procedures).

Based on the above, this criterion was evaluated as partially conformed to.

Criterion C8.3: To what extent did the EMF/SEA influence the scope of alternatives that were considered in the EIA process?

Interviewee A2 confirmed that the Renewable Energy SEA did not influence alternatives. The identification of alternatives that informed the original application (CES, 2009), preceded the SEA and considered regional alternatives beyond the REDZ. The selection of the Rietkloof site was informed by the availability of wind resources, site accessibility, and grid connectivity (CES, 2009).

Based on involvement in several other EIA processes for renewable energy developments, Interviewee A2 confirmed that applicants, *in general, often selected* sites located outside REDZs.

[161] Page 26 of the Final Basic Assessment Report.

Interviewee A2 also highlighted that when a project was in a REDZ, it gave applicants some 'leverage' with the decision-making authority. This leverage also increased once the applicant became a preferred bidder (although this status was allocated after the EIA was concluded).

Interviewee A1 also confirmed that in general, REDZs removed the need for broader/regional site alternatives, but it did not negate other alternatives such as technology and micro placement of turbines. Interviewee A1 confirmed that in this application, the Renewable Energy SEA information, and the existence of the Komsberg REDZ did not influence the consideration of other alternatives. However, this view is only partly correct as the Rietkloof EIA, in discussing alternatives, did refer to the existence of the Komsberg REDZ as an added motivation to justify the second application.[162]

The review of the Rietkloof EIA documentation confirmed that the identification of alternatives for the second application was informed by the site selection process of the first application, which was submitted before the formalisation of the REDZs and the revised regulatory process. This site selection was based on an assessment of regional alternatives that was already conducted in 2009 (WSP, 2019, referencing CES, 2009). However, the strategic context provided by the Renewable Energy SEA through its identification and subsequent gazetting of REDZs did provide confidence to the applicant and Interviewee A2 that Rietkloof as the preferred alternative, would be successful. As such, the applicant did not see the need for the identification of additional/new alternatives beyond those presented in the first application.

The review of the Rietkloof EIA documentation indicated that apart from layout alternatives/micro-site placements[163] (which were informed by specialist information), the second application presented the same type and scale of development that was largely unsuccessful in the first application (i.e., which authorised only 9 of the 60 turbines). The layout alternatives were informed by the Rietkloof EIA information through the specialist studies and changes in the conservation planning context (i.e., Critical Biodiversity Area datasets that were revised by SANBI after the first application).

In summary, the absence of additional alternatives (other than presenting those that were part of the original application) indicated that the strategic context may well have influenced the decision by the applicant and the EAP not to identify additional alternatives. However, this was not clearly conveyed in the Rietkloof EIA. The SEA did not influence the selection of alternatives (which was already done as part of the first application) but did influence the decision not to identify

[162] Page 26 of the Final Basic Assessment Report (WSP, 2019).

[163] See section 3.4 of the Final Basic Assessment Report for a discussion on layout alternatives (WSP, 2019).

additional alternatives. From a tiering perspective in general, it was acknowledged by the interviewees that the SEA could reduce the need for broader (regional) locational alternatives.

Based on the above, this criterion was evaluated as partially conformed to.

Criterion C8.4: To what extent did the EMF/SEA influence the application of the impact mitigation hierarchy in the EIA process?

Interviewee A2 provided the opinion that the Renewable Energy SEA did not affect the application of the impact mitigation hierarchy in the EIA process. Interviewee A2 confirmed that primary dependence was placed on the Rietkloof EIA information (especially the specialist information) in applying the impact mitigation hierarchy and that the Renewable Energy SEA information had no bearing on the mitigation hierarchy.

Interviewee A1 was also of the opinion that the Renewable Energy SEA information did not influence the application of the impact mitigation hierarch, as the SEA information covered the broader scale (i.e., was more strategic) and the Rietkloof EIA information was site-specific – i.e., that the impact mitigation hierarchy was applied at a site-specific level and that such detailed scale of impacts was not considered at the broader SEA level. This view expressed by the Interviewee was, however, inconsistent with the application of the impact mitigation hierarchy and the definition of 'alternatives' in the EIA Regulations (South Africa, 2014a) - avoidance as a mitigation option may involve strategic-level thinking and the consideration of broader contextual information beyond the EIA site boundaries.

In the Rietkloof EIA documentation, the BAR referred to the mitigation hierarchy in the context of dealing with alternatives - by firstly referring to the assessment of regional alternatives that was conducted in 2009 (preceding the SEA and the EIA) and thereafter the layout alternatives that were predominantly informed by the specialist information contained in BAR. There was no indication in the BAR that the Renewable Energy SEA influenced the mitigation hierarchy in how the alternatives were dealt with. Even in motivating why the no-go alternative was not considered the preferred option, the BAR relied on the international policy drive for renewables and not on the fact that the development was located in the Komsberg REDZ. In other words, there was little evidence in the BAR that the Renewable Energy SEA influenced the application of the impact mitigation hierarchy.

The visual assessment[164] was the only specialist assessment that engaged substantively with the strategic context in assessing the visual impacts of the development. It stated that the visual impacts could not be fully mitigated, but that the residual impact must be considered within the strategic context provided by the Renewable Energy SEA. Importantly, the specialist study did not use the strategic context to reduce the impact significance rating but rather used it to conclude that the residual impact must be regarded as acceptable in light of the strategic context (i.e., the identification of REDZ as sacrificial areas to localise visual impact to a specific zone, and the socio-economic importance of renewable energy). This was substantiated by the fact that the Rietkloof wind energy facility was surrounded by 11 other similar facilities that already received environmental authorisation (more than 1200MW capacity, totalling more than 400 turbines) (WSP, 2019).

In summary, and from a tiering perspective, Interviewee A2 was of the view that the Renewable Energy SEA did not affect the application of the impact mitigation hierarchy in the Rietkloof EIA process. The exception was the visual assessment, in which the strategic context did not influence the mitigation hierarchy, but rather influenced the trade-off between different impacts (i.e., it was used to motivate that the residual visual impact was an acceptable trade-off when considering the strategic context – "*the potential losses in scenic resources were not sufficiently significant to present a fatal flaw to the proposed project*" (WSP 2019:57).[165] Regarding tiering, the above also reflected a lack of critical thinking on the relationship between the strategic context and project-level EIA processes in the application of the impact mitigation hierarchy.

Based on the above, this criterion was evaluated as not conformed to.

Criterion C8.5: To what extent are there any contested views /interpretations on the applicability of the strategic context on the EIA/project? (i.e., different views on how the strategic context should be interpreted in guiding project planning/ assessment)

Interviewee A2 maintained that the Renewable Energy SEA did not guide the project, and added that in general "*since the promulgation of the REDZ, no one refers to the SEA anymore*" – i.e., after the gazetting of the REDZs and the revised regulatory process, these outcomes of the SEA, rather than the SEA information itself, are predominantly used. From a legal perspective, the EIA process referenced the revised regulatory procedures that were promulgated based on the

[164] See Appendix L to the Final Basic Assessment Report (WSP, 2019).

[165] Page 57, Appendix L to the Basic Assessment for the Rietkloof Windfarm (WSP, 2019).

SEA (South Africa, 2018b), but not the SEA itself. Originally, as part of the first application, when the REDZs were not yet promulgated, the BAR did refer to the SEA, what it intended to achieve, and that there were proposals for law reform. At that stage, the REDZ did not, however, have any legal status and therefore did not have any significant effect on the Rietkloof EIA process. Subsequently, after the promulgation/gazetting of the REDZ, Interviewee A2 considered the REDZs and the revised regulatory process, not the SEA information. Interviewee A2 believed that this was similar to other EAPs. In summary, EAPs considered the outcome of the SEA, not the SEA information itself. As such, Interviewee A2 did not express a firm view on the merits of the Renewable Energy SEA but accepted the outcome thereof uncritically. Interviewee A2 was not aware of specific conflicting views on the interpretation of the strategic context, beyond the consistent objections from some neighbouring landowners. Interviewee A1 was not aware of any contested views or different interpretations related to the Renewable Energy SEA or the outcome thereof.

In reviewing the Rietkloof EIA documentation, it was clear that the neighbouring farms did not support the first application, and these views did not change during the second application. The responses from these stakeholders did not refer to the Renewable Energy SEA (and the existence of the Komsberg REDZ) and also did not express any view on the change in the regulatory process (or that they were even aware of the change in the regulatory process). They only registered their objections against the development (WSP, 2019).[166]

The public notice of the EIA process did highlight the existence of an environmental authorisation for a 36 MW development (i.e., 9 turbines) and that the applicant wanted to apply for an additional 51 turbines. The notice also indicated that a revised regulatory process was followed based on the requirements of Government Notice R114 (gazetted on 16 February 2018). Other than indicating the location of the development application in the Komsberg REDZ and that an EIA was followed, no contextual information was provided on the revised strategic context.

In summary, the interested and affected parties, in particular landowners affected by the wind farm, did not support the application. By implication, they did not support the SEA outcome (i.e., proposing the location of a REDZ in the local area). It follows that there were contested views on the applicability of the strategic context of the wind energy project in the local area. From a tiering perspective, the SEA did not create a more favourable context for the project-level EIA by overcoming the NIMBY effect related to EIA/project. Put differently, the SEA did not change the view of all interested and affected parties on the significance of impacts at the project level. The tiering of information between SEA and EIA did not happen (i.e., SEA information was not used

[166] Appendix E (Stakeholder Engagement Report) to the Final Basic Assessment Report (WSP, 2019).

to inform the EIA), but tiered decision-making was successful (i.e., the revised regulatory process as an outcome of the SEA was implemented at the project level).

Based on the above, this criterion was evaluated as partially conformed to.

Criterion C8.6: To what extent is there clear evidence in EIA decisions (environmental authorisations and appeal decisions) that the strategic environmental context was considered?

In reviewing the Rietkloof EIA documentation, the Environmental Authorisation (the EIA decision) (DEA, 2019) did not refer to the Renewable Energy SEA and the REDZ. However, the application for environmental authorisation was supported by a BAR, consistent with the gazetted revised regulatory process for all applications for renewable energy facilities situated in the published REDZs. Therefore, the fact that the decision-making authority accepted the BAR (which, for applications located outside the REDZs, would require a more comprehensive S&EIR process), means that they were aware of the REDZs and the revised regulatory requirements applicable in REDZs.

Also, the proposed developments in the first and second applications were, in essence, the same (barring changes in the micro-placement of individual turbines). Yet only 9 turbines were authorised following the first application, whilst the second decision authorised 60 turbines (inclusive of the 9 already authorised). According to Interviewee A1, the decision (DEA, 2019) was based on the Rietkloof EIA information, and there was no comparison made between the first and the second applications. According to Interviewee A1, the information in the Rietkloof EIA justified the decision, regardless of the first application and its associated EIA. Interviewee A1 specifically emphasised that the EIA that was conducted for the first application was not considered during decision-making for the second application.[167] Interviewee A1 placed a lot of emphasis on the change in the biodiversity context based on SANBI's revised conservation planning that changed the conservation categories applicable to the site (SANBI, 2017), in supporting the issuing of the Environmental Authorisation. However, the change in the biodiversity context was not specifically highlighted in the Environmental Authorisation, other than to mention that the specialist studies contained in the EIA, were considered (DEA, 2019).[168]

[167] Although this was inconsistent with the "Reasons for the Decision" contained in the Environmental Authorisation, which indicated that the previous EIA and decision were considered (DEA, 2019).

[168] The "Reasons for the Decision" contained in the Environmental Authorisation (DEA, 2019).

'Need and desirability' is a key principle in EIA decision-making in linking the strategic context to project-level assessments and decision-making (DEA, 2017c). In accordance with the EIA Regulations (DEA, 2014a), 'need and desirability' must be considered.[169] 'Need and desirability' required that the need for development, the timing, and placement thereof had to be considered during decision-making (DEA, 2017c). However, no reference was made in the environmental authorisation to 'need and desirability' other than to refer in general that all relevant guidelines referred to in the BAR, were considered. The environmental authorisation only stated that the need for the project stemmed from the need to supply electricity to the national grid, but no further reasoning was provided in support of 'need and desirability'. This lack of reasoning was particularly noted in the context of the request from the authority that "[*t]he BAR must provide a detailed description of the need and desirability, not only providing motivation on the need for clean energy in South Africa of the proposed activity. The need and desirability must also indicate if the proposed development is needed in the region and if the current proposed location is desirable for the proposed activity compared to other sites. The need and desirability must take into account cumulative impacts of the proposed development in the area" (*WSP, 2019: xiv).[170]

In summary, in the Rietkloof EIA, the acceptance of a revised regulatory process for the second application, as well as the favourable consideration of a development proposal that was similar to the first application (what was largely unfavourably considered in a previous decision), meant that the decision-maker was aware of the strategic context. However, this reasoning was not reflected in the interviews with Interviewees A1 or A2, and there was a distinct absence of referencing the SEA in the EIA decision. From a tiering perspective, there was no reasoning in the EIA decision on the relationship between the strategic and project-level assessment and decision-making.

Based on the above, this criterion was evaluated as partially conformed to.

6.3.4 The Output ToC Component

The criteria developed to evaluate the assumptions made related to the Output ToC Component of the ToC map were set out in Chapter 5, Table 5-1. The performance of the case study was against Criterion C9.1 as discussed in the following section.

[169] Regulation 2, 3, Appendix 2 and Appendix 3 of the EIA Regulations (South Africa, 2014a).

[170] The request for information on need and desirability by the decision-making authority included on page xiv of the Proposed Rietkloof Wind Energy Facility Final Basic Assessment Report (WSP, 2019).

Criterion C9.1: To what extent does the EIA decision align and give effect to the strategic environmental planning context? (i.e., the EMF/SEA) and was it well-motivated?

Interviewee A2 expressed the opinion that the environmental authorisation decision was based on the project-specific EIA information in the BAR, not the Renewable Energy SEA information. Interviewee A2 also substantiated this by referring to the original application and the environmental authorisation that only authorised 9 turbines based on the EIA information contained in the first application, whereas the second application authorised an additional 51 turbines (and referred specifically to the changed biodiversity information between the first and second applications). However, this view was inconsistent with the 'Reasons for the Decision' contained in the EIA decision (environmental authorisation), which indicated that the previous EIA and decision were considered (DEA, 2019).

Interviewee A1 was not sure how to answer this question. When prompted, Interviewee A1 expressed the view that whilst the outcome was aligned insofar as approval was granted for an application in the REDZ, but did not know what assessments informed the SEA outcome and the identification of areas suitable for REDZ. Hence, Interviewee A1 was not clear and had no opinion on the alignment between the SEA and the EIA. Interviewee A1 did, however, emphasise that the EIA decision was not based on the application being located in a REDZ, but based on the assessment of impacts and the EIA information. Interviewee A1 did not consider the Renewable Energy SEA to "make decisions", but that the decision was based on the consideration of project-specific impacts. Interviewee A1 noted that in 2016 (the first application), the Directorate in DFFE responsible for biodiversity was consulted, and they stated that placement of turbines was proposed in sensitive areas, hence only 9 turbines were approved. The second application shifted turbines away from the sensitive areas (based on new biodiversity information published by SANBI), which influenced the decision to authorise an additional 51 turbines. In other words, the decision was based on the revised strategic biodiversity information (i.e., functional-specific environmental planning) and not the SEA information.

In accordance with the EIA Regulations (South Africa, 2014a), 'need and desirability' must be considered[171] – i.e., the need for a development, and the timing and placement thereof must be considered during decision-making (DEA, 2017c). In the environmental authorisation, no reference was made to 'need and desirability', other than to refer in general to all relevant guidelines referred to in the BAR considered. However, considering the purpose of the REDZ in promoting the location of wind energy developments within these REDZs, the environmental

[171] Regulation 2, 3, Appendix 2 and Appendix 3 of the EIA Regulations, 2014 (South Africa, 2014a)

authorisation (although not reasoned as such in the decision) was considered to be aligned and give effect to the strategic functional-specific environmental planning context.

In summary, the EIA decision (DEA, 2019) did not refer to the strategic environmental context. However, by accepting a revised regulatory process, as well as the favourable consideration of a development proposal that was initially largely turned down, it indicated that the decision-making authority was alive to the existence of the changed strategic environmental context and that this influenced the decision-making process. From a tiering perspective, even though the reasoning in the Environmental Authorisation did not reflect on the link between the SEA and the EIA (i.e., tiering of information), the environmental authorisation was considered to be aligned and give effect to the strategic environmental context.

Based on the above, this criterion was evaluated as conformed to.

6.3.5 The Immediate Outcome ToC Component

The criteria developed to evaluate the assumptions made related to the Output ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criteria C10.1, C11.1 and C11.2 as discussed in the following section.

Criterion C10.1: To what extent does the strategic environmental context (i.e., EMF/SEA) provide clear guidance on what constitutes appropriate and inappropriate types and scales of development and land use to promote sustainable development outcomes at project-level assessment?

Interviewee A2 expressed the view that whilst it was obvious that the Renewable Energy SEA influenced the type of development (being specifically aimed at the renewable sector), it was doubtful if the SEA influenced the scale of development – rather, it was the renewable energy policy and legislative context, and especially the bidding requirements, that guided the scale of development. The interviewee mentioned that at the onset of the renewable energy drive in South Africa, applicants applied for massive projects (e.g., 800MW) but when the Independent Power Producer (IPP) requirements (which changed the bidding process) were published, applicants amended their approach and started to submit applications for smaller developments (or broke down developments into smaller projects). Therefore, Interviewee A2 maintained that applicants

kept to 140-200MW applications because that was what they could bid for, not because of the SEA information.

Interviewee A2 also reflected that there was a difference between what was regarded as environmentally sustainable projects and what applicants regarded as being financially sustainable/viable. In other words, the driver for wind energy developments was not the SEA, but the bidding requirements, technology options available to applicants and financial viability. Therefore, according to Interviewee A2, the SEA did not give guidance that significantly influenced project-level outcomes, and applicants were primarily driven by financial viability, not environmental sustainability.

Interviewee A1 maintained that the primary effect of the Renewable Energy SEA was that the REDZ were gazetted and that a revised regulatory process was set in place. Interviewee A1 maintained that the SEA did not provide guidance to the specialist assessments,[172] but only served to reduce regulatory timeframes - an assessment was still required (which primarily reduced timeframes, but did not remove the need to assess impacts).

The outcome of the Renewable Energy SEA was the establishment of a revised (and reduced) regulatory process to be followed for renewable energy projects located within the REDZs (i.e., a Basic Assessment process instead of a full S&EIR process) (Interviewee A4 and DEA, 2015). According to Interviewee A4, the SEA can be equated to a scoping exercise for the areas identified as REDZ (i.e., the specialist inputs in the SEA process can be equated to the specialist input into the scoping phase).[173] Put differently, the outcome of the SEA was the generation of information that justified project-level EIAs to follow a 'reduced' regulatory process (DEA, 2015; South Africa, 2018b).

The other key SEA output was the 4-tiered sensitivity mapping within the REDZ and projects were encouraged to be located in areas of low and medium sensitivity, and avoiding the high/very high sensitivity areas. Different information requirements were set for specialist assessments for areas with different levels of sensitivity. These protocols were to guide specialists on information requirements during EIA processes. The SEA also sets different limits (of acceptable change) for different geographical/functional areas of sensitivity (e.g., number of turbines in agricultural

[172] This was an interesting comment, as the review of Renewable Energy SEA. showed that the various specialist chapters specifically incorporated guidance to specialist studies to be conducted at EIA-level. However, the specialist inputs into the Rietkloof EIA did not refer to the guidance provided by the Renewable Energy SEA.

[173] Part 3 of the Renewable Energy SEA (DEA, 2015).

areas). This was then also transferred into the Screening Tool to be used by applicants as a proactive planning instrument (Interviewee A4; DEA, 2015; South Africa, 2018a and b).

The Renewable Energy SEA promoted a specific type of development and the location thereof, but not the scale thereof. The SEA, in identifying REDZs, therefore motivated these geographical areas to become target areas for wind energy developments. The cumulative effect thereof was therefore regarded as an acceptable trade-off compared to other impacts.

A review of the Rietkloof EIA information (WSP, 2019) reflected that the policy and legislative context for renewable energy in South Africa were key informants that influenced the type and scale of development in the EIA process. Insofar as the Renewable Energy SEA was concerned, the outcome thereof was clear in the identification of REDZs, providing a reduced regulatory process and protocols for specialist information to be gathered during project-level EIA processes. The Rietkloof EIA process placed strong reliance on the strategic policy and legislative context in justifying the appropriateness of the type and scale of development. This motivation was reflected in the "need and desirability" section of the BAR. The EIA documentation did not reflect on the SEA information *per se* (i.e., tiering of information), but rather on the identification of REDZs as the outcome thereof and its associated regulatory process (tiering in decision-making). None of the specialist inputs into the Rietkloof EIA referred to the guidance provided by the protocols for specialist studies that were part of the Renewable Energy SEA.

The relevant Municipality, through their SDF (Laingsburg Municipality, 2017), supported the strategic context but did not use the SEA information to discuss sustainability or the appropriateness of renewable energy developments.

In summary, and from a tiering perspective, the Renewable Energy SEA provided clear guidance to EIA processes. The SEA promoted a specific type of development and the location thereof, but not the scale thereof. However, the Renewable Energy SEA, in identifying REDZs, motivated these geographical areas to become target areas for wind energy developments, inclusive of the cumulative effect thereof. The SEA also provided clear guidance to specialists (through protocols), although these were not used in the Rietkloof EIA.

Based on the above, this criterion was evaluated as conformed to.

Criterion C11.1: To what extent do key role-players, in evaluating the sustainability of project-level EIAs and decisions, attach value to the alignment thereof with the strategic environmental context (i.e., did they regard alignment with the strategic context as representing a sustainable outcome)?

Interviewee A2 maintained that the stakeholders (apart from the applicant, specialists and decision-making authority) had little or no awareness of the Renewable Energy SEA and that they primarily considered the project-level information. Interviewee A2 was also of the view that whilst other authorities may have been aware of the Renewable Energy SEA, it did not influence the EIA process and regulatory decision-making. Therefore, Interviewee A2 believed that stakeholders did not attach great value to the SEA in influencing the achievement of sustainability outcomes and that they primarily considered it from a regulatory, project-specific perspective.

Interviewee A1 noted that it was not easy to answer this question, but was of the opinion that, as far as economics was concerned, there was a need for a balanced consideration of other interests to achieve sustainability. Interviewee A1 maintained that whilst the applicant (and referring to applicants for renewable energy development in general) "*was happy as they saved money with the reduced process*", 'ecological sustainability'[174] outcomes may not have been achieved within the specific geographical area (i.e., the REDZ), due to impacts such as bird mortality and biodiversity and cumulative impacts, not being fully addressed - related to the REDZs being a 'sacrificial area'.

In reviewing the Rietkloof EIA documentation, the key role-players (i.e., the applicant, the EAP and the decision-maker) were aware of, and attached a value to the outcome of the strategic context for the following reasons:

- The applicant "re-applied" for the same development proposal (i.e., the same type and scale of development on the same site), which meant that the applicant was alive to the change in strategic context, and believed that the revised strategic context provided a higher level of investor's confidence in the favourable outcome of the second application.
- The EAP (interviewee A2) was well-informed about the change in the strategic environmental context and relied on this in the submission of the EIA documentation for the second application. However, the scientific/technical information contained in the SEA *per se* was not used and did not influence the EIA.
- Interviewee A1 and the decision-making authority accepted a revised regulatory process and favourably considered the development proposal that was similar to an application that was largely unfavourably considered in a previous decision on the first application. This change meant that the decision-maker attached value to (or uncritically accepted) the revised strategic environmental context, but only insofar as it resulted in a revised regulatory process. The written decision did not reflect that the scientific/technical information contained in the

[174] As referred to in section 24 of the Constitution (South Africa, 1996).

SEA influenced decision-making (i.e., it was not reflected in the reasoning provided in the environmental authorisation). The decision did not refer to the Renewable Energy SEA or the REDZ,

Most of the interested and affected parties (especially the neighbours and nearby farms within the viewshed of the windfarm) who participated in the EIA process did not support the first application and this view did not change based on the second application. These parties did not reflect on the strategic context in their comments/objections - their responses gave no recognition of the Renewable Energy SEA or that they were aware of its existence.

In summary, and from a tiering perspective, the value that the decision-maker attached to the strategic context (other than acknowledging and utilising the revised regulatory process), was not reflected in the environmental authorisation. The contributing role that tiering (of information) could play in considering sustainability was therefore lost. This lack of reasoning on the strategic context was especially noteworthy considering that the Rietkloof EIA reflected that the site for the application was surrounded by 11 other potential wind energy facilities within a 50km radius, which already received environmental authorisation (more than 1200MW capacity with more than 400 turbines) (WSP 2019). Also, the replies from the interviewees highlighted the complexity of the application of sustainability in decision-making and the role of scale in debating sustainability - i.e., the view of sustainability changes, depending on the local, regional or national scale being considered.

Based on the above, this criterion was evaluated as not conformed to.

Criteria C11.2: The extent to which key role-players from other sectors refer to the EMF/SEA in addressing their sector interests?

In reviewing the Rietkloof EIA documentation, it was clear that the Renewable Energy SEA received little acknowledgment in other sectors (WSP, 2019).[175] In comments provided as part of the EIA public participation process, there was a primary reliance on the Rietkloof EIA information and their own various sector-specific legislative requirements related to the biophysical functional areas (including agriculture, biodiversity, and avifauna). This view was corroborated by Interviewee A2. Therefore, the potential knowledge brokerage role of tiering to empower stakeholders and enable them to participate in the EIA process, was lost.

[175] Appendix E (Public Participation Report)

There was significant interaction by different sectors during the SEA process, covering various other sector interests such as biodiversity, agriculture, telecommunication, socio-economic and heritage (DEA, 2015). However, this level of involvement did not take place during the EIA process and the SEA information was not reflected in sector inputs during the EIA process (WSP, 2019).

The relevant Municipality, through their SDF (Laingsburg Municipality, 2017), was supportive of the strategic context provided by the SEA, but the SEA information was not used to reflect on sustainability or the appropriateness of renewable energy developments. As such, the SDF, beyond broadly supporting renewable energy, relied on the SEA to provide a relevant strategic environmental context for renewable energy.

The contributing role that the Renewable Energy SEA could have played in lateral/horizontal tiering was not fully realised.

Based on the above, this criterion was evaluated as partially conformed to.

6.3.6 The Intermediate Outcome ToC Component

The criteria developed to evaluate the assumptions made related to the Intermediate Outcome ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criteria C12.1, C13.1 and C13.2 as discussed in the following section.

Criterion C12.1: To what extent are strategic-level EAs considered in other sector strategic planning frameworks in a manner that achieves alignment?

As already discussed under Criterion C7.1, the Laingsburg Municipal SDF (Laingsburg Municipality, 2017) regarded renewable energy development as a key economic growth opportunity. The SDF also referred to the Renewable Energy SEA and the identification of REDZs to promote renewable energy initiatives. Although not discussed in any detail, the SDF reflected that the Komsberg REDZ was partly located in the municipal area. As such, the SDF was also informed by the Renewable Energy SEA.

Beyond the SDF, none of the interviewees referred to, or were aware of other planning initiatives in other sectors that considered the SEA. Interviewee A3 confirmed that there was no follow-up initiative to evaluate the extent to which the SEA informed other sector planning initiatives.

This criterion was evaluated as partially conformed to.

Criterion C13.1: To what extent do the environmental decision-making authorities consider tiering (tiered environmental assessments and/or environmental planning) as valuable in achieving sustainable development outcomes?

Interviewee A3 regarded tiering in EA to be important in general (not specifically related to the case study) in providing a strategic context to inform sustainability for EIAs. Interviewee A4 regarded the Renewable Energy SEA as an example that reflected the importance of tiering, as well as the revised regulatory framework that flowed from it. Interviewee A1 attached more value to the information that flowed from the EIA process, but acknowledged that the outcome of the SEA was a revised regulatory framework. On EMFs, the interviewee's experience, in general, was that EMFs did not add value as the quality thereof was not always good. Although not expressing a specific opinion on tiering, Interviewee A1 was explicit in not regarding the strategic context as an informant to the Rietkloof EIA process.

In summary, tiering was regarded as being of value in achieving sustainable development outcomes, but in practice, this was not reflected in the case study. The case study did not reflect on the importance of tiering in achieving sustainability, as neither the EIA report (WSP, 2019) nor the EIA decision reflected on the SEA (DEA, 2019) as the strategic tier of information, in discussing sustainability.

This criterion was evaluated as partially conformed to.

Criterion C13.2: To what extent have resources been allocated, and institutional arrangements have been developed within provincial authorities support for tiering (through strategic level assessments and planning?

Interviewee A3 confirmed that although SEAs were voluntary instruments, financial and human resources were allocated to conduct SEAs for large infrastructural developments such as electricity infrastructure, renewable energy and shale gas developments/infrastructure. Such resources were, however, not allocated towards EMFs (apart from reviewing EMFs to advise the Minister in providing concurrence to provinces for the adoption of EMFs that were developed by provinces). The interviewee confirmed that in provinces the primary focus was on EMFs, but availability of financial and human resources presented a major challenge. In commenting in

general, this was also confirmed by Interviewee E3. Interviewee A1 did not express any view on this criterion.

This criterion was evaluated as partially conformed to.

6.3.7 The Impact ToC Component

The criteria developed to evaluate the assumptions made related to the Impact ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criteria C14.1, C14.2, C14.3, C15.1, C15.2, C15.3, and C15.4, as discussed in the following section.

Criterion C14.1: To what extent do EMFs/SEAs affect the efficiency of EIAs (i.e., reducing time and cost implications of EIA processes)? In general, and in this specific case study?

Interviewee A2 highlighted that the revised regulatory process that followed for the Rietkloof EIA resulted in increased efficiency (i.e. time and cost) of the EIA process as there was a significant reduction in the timeframes compared to the normal 107 days of a more comprehensive S&EIR process (and was of the view that applicants could push for shorter timeframes with the authority based on the priority attention being given to renewable energy projects). The cost and time savings resulted from not having to conduct an S&EIR process, therefore only producing one BAR and conducting one round of public participation.[176]

Interviewee A1 pointed out that other guidelines (e.g., of bird and bat monitoring) may still influence the timeframes as they may require a period of baseline monitoring (e.g., 12 months of bird monitoring), but that this happens before the commencement of the formal EIA process.[177] Interviewee A1 also noted that, in general, applicants would be required to appoint a specialist early before the start of the (formal) regulatory EIA process. This resulted (and in the future will often result) in applicants appointing these specialists before starting the regulatory EIA process (even before getting the EAP involved). In other words, the start of the formal EIA process through the submission of an application (considering the tight, fixed timeframes) cannot coincide with the commencement of the baseline monitoring process - the baseline monitoring must first be done

[176] Compared to the 2 rounds of public participation and both a scoping and environmental Impact Report having to be produced during a scoping and EIR process.
[177] That is, specialist studies being conducted prior to the applicant submitting a formal application for environmental authorisation to the decision-making authority which, signifies the commencement of the formal (regulated) EIA process.

before commencing with the regulatory EIA process (i.e., a significant amount of effort went into a 'pre-application' phase). However, applicants still benefit from the timelines of the formal regulatory EIA process being reduced to 6-9 months, compared to 12-18 months.

In reviewing the Renewable Energy SEA, it was determined that the SEA process affected conducting a scoping process, predetermining the issues to be addressed by specialists during EIA processes, and developing protocols to guide such specialist studies during EIA processes. Although these protocols were only formalised (i.e., gazetted for implementation) after the finalisation of the Rietkloof EIA process, they were already contained in the SEA that was available to inform the Rietkloof EIA process. This was a clear example of tiering benefitting the subsequent tier by removing the need for a scoping phase and providing EIA guidance – i.e., reducing the information requirements of EIAs.

In summary, and from a tiered assessment perspective, the Renewable Energy SEA outcome improved the (time and cost) efficiency of project-level EIA processes associated with renewable energy processes, as well as (potentially) reducing the information requirements of such EIA processes.

Based on the above, this criterion was evaluated as conformed to.

Criterion C14.2: Do EMFs/SEAs affect the effectiveness of EIAs (i.e., of value in assisting EIAs to deliver sustainable development outcomes)? In general, and in this specific case study?

Interviewee A2 was of the clear opinion that the Renewable Energy SEA did not affect the substantive effectiveness of the EIA and that effectiveness (i.e., achieving sustainable development outcomes) was primarily achieved through the EIA process, based on the EIA information. In contrast, Interviewee A2 was of the view that although a reduced EIA process was followed, the BAR was a "mini-EIA report" – and that the EAP was still required to write a report that dealt with all impacts. From a substantive effectiveness perspective, Interviewee A2 acknowledged that the contribution from the Renewable Energy SEA was that the scoping phase had been eliminated, as the SEA already identified all the key issues, and that the protocols set out the information requirements and process for the specialist information inputs. In addition, a screening report could be compiled based on the datasets on the DFFE website.[178] Interviewee A2 believed that the BAR was by no means a "basic report" (and could be up to 500 pages and

[178] The DFFE website contains datasets on most of the specialist/functional areas, and that EAPs use these datasets to compile a Screening Report (submitted as part of their regulatory EIA process) that highlights the sensitivity of the development site.

very detailed), and that a BAR did not (and in general does not) detract from the level and detail of the assessment. To a certain extent, this view and the volume of information in the BAR, brings into question the claims of efficiency gains that were expressed by the interviewees.

In a follow-up question, if the SEA facilitated achieving sustainability, Interviewee A2 expressed the opinion that "*the SEA sets the scene*" and that perhaps the REDZ resulted in more applications being located in these zones than would normally be the case. However, Interviewee A2 was also of the opinion that in general, "*this was starting to change as more and more applicants were initiating applications outside the REDZs…. although initially it assisted applicants by focusing on REDZ, this was changing*".

Interviewee A1 was of the view that the Renewable Energy SEA did not assist in achieving substantive outcomes, but highlighted that it also depended on how sustainability was defined. Interviewee A1 highlighted that the SEA primarily concentrated on one aspect, i.e., time and cost efficiency and that sustainability in this instance focused more on economic components thereof[179] and less on socio-ecological issues. Interviewee A1 highlighted that the SEA put officials (who review EIAs) under time pressure to consider projects in the REDZ within reduced timeframes, and as such, there were fewer opportunities to review the EIA documentation thoroughly to ensure that all impacts were adequately addressed, negatively impacting the quality of work.

Interviewee A1 was also concerned about cumulative impacts in REDZ. Although the interviewee assumed that the SEA assessed cumulative impacts, the concern was expressed that these impacts were not adequately addressed. Interviewee A1 also expressed uncertainty about how to consider the SEA when reviewing cumulative impacts. This view was consistent with the lack of reasoning in the Environmental Authorisation on considering the strategic context.

When questioned on the applicability of the 'Need and Desirability Guideline' (DEA, 2017c)[180] to achieve substantive effectiveness, Interviewee A1 thought that it was used as a motivation for development rather than assisting the assessment of impacts. No indication was provided by Interviewee A1 on how 'need and desirability' was considered in the decision-making process, and as already highlighted, the environmental authorisation (apart from stating that the need for the project stemmed from the need to supply electricity to the national grid), was void of any reference to 'need and desirability', although it is a regulatory requirement.

[179] Meaning that sustainability includes social, economic and ecological considerations.

[180] At the time of the application, the 2014 version of the guideline was available.

In summary, and from a tiered assessment perspective, Interviewees A1 and A2 did not provide a positive reflection on the ability of the Renewable Energy SEA to create a context for achieving substantive effectiveness through the EIA process. The lack of reasoning in the EIA decision on 'need and desirability' also did not indicate how the decision-maker viewed the project's contribution towards sustainable outcomes. From a tiered assessment perspective, the Rietkloof case study reflected a weak relationship between the strategic and project-level, related to (substantive) effectiveness - the contextual information[181] provided by the Renewable Energy SEA was not used to explain (reason) how the EIA achieved sustainability outcomes.

Based on the above, this criterion was evaluated as not conformed to.

Criterion C14.3: To what extent is the strategic context (i.e., EMFs/SEAs) adequate in ensuring the achievement of the environmental right in a balanced manner?

Interviewees A1 and A2 did not believe that the Renewable Energy SEA assisted with achieving sustainability outcomes for the specific site, but that sustainability (in this case and in general) was rather achieved based on more detailed EIA information. The location of the project in the Komsberg REDZ only addressed efficiency by reducing the timeframes and regulatory process.

The Rietkloof EIA information referenced numerous policies and legislation that created a strategic policy context for sustainability, but this was not pulled through to any reasoning on why the Rietkloof Windfarm was regarded as sustainable, or the balanced consideration of the environmental right. However, the contribution of tiered assessment towards achieving sustainable outcomes was implied through generalised statements and referencing policy documents in the EIA, rather than presenting clear reasoning that reflects on the SEA's contextual information contribution towards achieving the environmental right in a balanced manner.

Interviewees A3 and A4 believe that the SEA does provide information on all aspects of the environment and presents a balanced consideration of environmental rights.

Based on the above it was also clear that those involved in EIA practice (i.e. interviewees A1 and A2) viewed the role and contribution of the SEA towards sustainability at the EIA level differently than those involved in SEA practice (i.e. interviewees A3 and A4). This reflected inadequacies in

[181]Contextual information beyond the scope of an individual EIA is required to motivate (contextualise) sustainability outcomes (Arts *et al.*, 2011).

both EIA practices (in not using tiered information) and SEA practices (in not implementing follow-up to ensure that tiered information was used).

This criterion was evaluated as partially conformed to.

Criterion C15.1: To what extent does the EIA deal with the environmental right in a balanced manner?

Interviewee A2 was of the view that EIAs in general deal with environmental rights in a balanced manner, as they create the opportunity to consider all issues, assess impacts, and provide mitigation measures. EIA processes also allow for public involvement and procedures to ensure that environmental factors are considered in project-level decision-making. Interviewee A2 was of the view that this was also true for the Rietkloof EIA process.

In a follow-up question, if the Renewable Energy SEA helped to achieve this balance, Interviewee A2 did not believe this to be true and expressed the view that sustainability was rather achieved on the merits of individual EIA processes. The fact that the Rietkloof project was located in the Komsberg REDZ only influenced the timeframes of the regulatory process. Details of impact management measures and layout were still required to be done, based on project-specific information, whereas the SEA did not contain such details (e.g., the location of eagle nests was only considered at the EIA level) to inform this level of assessment.

The Rietkloof EIA dealt with all components of the environment that contributed to sustainability and the environmental rights contained in the Constitution (South Africa, 1996). In reviewing the Rietkloof EIA, a search on the word "sustainable" indicated that several policies and legislation were quoted, but no direct discussion on the specific development's contribution towards sustainability could be found (i.e., limited reasoning was provided). Only a generalised reference to the contribution of renewable energy to the sustainable development goal was included: "*Renewable energy developments are considered to contribute towards sustainable development, increasing access to electricity for both the current generation and for future generations, while additionally providing energy sources to commercial and industrial sectors to promote their economic competitiveness and future prosperity. Wind energy is a naturally generated and stable source of energy, contributing to the energy security and sustainable development and is thus in accordance with the country's development goals*" (WSP, 2019:79).[182]

[182] Section 6, page 79 of the Basic Assessment Report (WSP, 2019).

The Rietkloof EIA information reflected that the strategic context was used to justify 'need and desirability'[183] and to consider cumulative impacts. Regarding the latter, and based on the visual specialist input received, the following statement was included in the BAR: "*The proximity of the WEFs also has the benefit of concentrating the visual impacts on the areas sense of place into one area as opposed to impacting on a number of more spread-out areas*" (WSP, 2019:726).[184]

In contrast to Interviewee A2, Interviewee A1 was of the view that the Rietkloof EIA did not deal with the environmental right in a balanced manner. Interviewee A1 questioned the meaning (i.e., different interpretations) of 'environment'. Whilst acknowledging that EIA in general was a tool to balance all components of the environment, Interviewee A1 maintained that when reviewing EIAs for development proposals, economic considerations tended to overpower environmental considerations. Interviewee A1 was of the view that sustainability (i.e., creating a balance between different components of the environment) was not possible – not in this project and also not in most other projects. The interviewee used the coal-fired power station as an example where there was a need for power, but there was a significant impact on the environment and people's health. Interviewee A1 could not recall an example of previous cases reviewed, where such a balance was obtained, and noted that it was always about weighing up the positives and the negatives (rather than achieving a sustainability balance). Interviewee A1 also expressed the view that EIAs were predominantly about the process (and procedural compliance) rather than substantive outcomes.

In summary, the Rietkloof case study reflected the contentious nature of sustainability, especially considering the broad definition of the 'environment' and 'sustainability' in South Africa, as well as the real challenge of dealing with the power dynamics of trade-offs during EIA decision-making processes. Interviewees A1 and A2 both reflected that the Renewable Energy SEA did not contribute to achieving a balanced sustainability outcome through the Rietkloof EIA. The EIA information referenced numerous policies and legislation that created a strategic policy context for sustainability, but this was not pulled through to any meaningful reasoning on why the Rietkloof Windfarm was regarded as sustainable. In this instance, the contribution of tiered assessment towards achieving the environmental right (and sustainable outcomes) at the EIA level, seemed to be implied through generalised statements and referencing policy documents, rather than providing clear reasoning that applied to the Rietkloof case study.

Based on the above, this criterion was evaluated as partially conformed to.

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[183] Section 6 of the Basic Assessment Report (WSP, 2019).

[184] Page 276, Section 9 of the Basic Assessment Report (WSP, 2019).

Criterion C15.2: To what extent does the EIA decision deal with the environmental right in a balanced manner?

Interviewee A1 felt it was a loaded question – but reflected that in general, "*cut and paste*" decisions were pervasive in EIA decision-making, but did not want to provide further comments other than to mention that there were several instances where EAPs had to officially apply (as was legally required in terms of the EIA Regulations) for amendments to environmental decisions because it contained conditions that had no bearing on the authorised project.

Interviewee A1 struggled with expressing a view on the 'to what extent' part of the question. When prompted, Interviewee A1 maintained that the decision only created a balance to a limited extent, as it primarily considered one component of the environment and not all three (not balancing all three components). In motivating the reply, Interviewee A1 maintained that reviewers can only give primary attention to one component (i.e., economics in the REDZ), but in the process of considering one sphere, "*one misses out on other aspects*" and that reviewers "*can never balance out all spheres equally*".

Interviewee A1 also mentioned that, in general, the EIA information submitted was also an issue of concern, as it may not always be correct, but because case officers (reviewers) are not specialists, they can only accept what has been submitted. In reflecting on the application for the Rietkloof Windfarm, Interviewee A1 emphasised that the decision was based on the information provided during the EIA process. Interviewee A1 maintained that the review of the Rietkloof EIA information (even though the previous EIA decision only authorised 9 turbines), supported another 51 turbines to be acceptable. Interviewee A1 highlighted that reviewers can only consider the current information submitted (and not the previous EIA and the assessment of impacts at that stage). Interviewee A1 explained this to mean that there was no opportunity to consider and compare the assessment of impacts between the first and second application, or if the information was correct – and even if this was possible to check the information, the legislated timeframes did not make it possible to request additional information and determine if the additional information was credible/correct. The reviewer therefore must take information "*in good faith*" as being credible and current.

In reviewing the Rietkloof EIA, in particular the environmental authorisation conditions (DEA 2019), it dealt with a wide range of both social and biophysical functional areas:

- Bats and avifauna;
- Vegetation, wetlands, and water resources;

- Roads and transportation;
- Noise;
- Visual resources;
- Human health and safety;
- Hazardous material and waste;
- Excavation and blasting activities;
- Air emissions; and
- Historical, heritage, and paleontological resources.

The reasons provided for the environmental authorisation stated that the decision-maker was "…..*satisfied that subject to compliance with the conditions contained in the Environmental Authorisation, the authorised activities will not conflict with the general objectives of integrated environmental management laid down in Chapter 5 of the National Environmental Management Act, Act 107 of 1998, as amended*" (DEA 2019:29).[185] However, following this statement, the environmental authorisation contained no reasoning for how the decision-maker came to this decision.

The key factors of the environmental authorisation noted that the need for the project stemmed from the need to supply electricity to the national grid. No reference was made in the environmental authorisation to the 'Need and Desirability Guideline' other than including a general statement that all relevant guidelines referred to in the BAR, were considered. No reasoning was provided to support these statements. This was particularly noteworthy when considering the request by the authority prior to the submission of the basis assessment report that "*The BAR must provide a detailed description of the need and desirability*….." (WSP, 2019: xiv).[186] The environmental authorisation only referred to the need to generate electricity for the national grid.

The same can be said of cumulative impacts, where the decision-maker requested that "*The BAR must include a detailed cumulative impact assessment of the facility if there are other similar facilities within a 30km radius of the proposed development site. The specialist studies e.g., biodiversity, visual, heritage etc., which are incorporated as part of the BAR must also assess the facility in terms of potential cumulative impacts. The cumulative impact assessment for all identified and assessed impacts…*" (DEA 2019:29).[187] The information requirements set by the

[185] Annexure 1, page 29 of the environmental authorisation issued by DFFE on 16 September 2019 (DEA, 2009).

[186] The request for information on need and desirability by the decision-making authority is included on page xiv of the Proposed Rietkloof Wind Energy Facility Final Basic Assessment Report (WSP, 2019).

[187] The request for information on need and desirability by the decision-making authority included on page xv of the Proposed Rietkloof Wind Energy Facility Final BAR.

authority were addressed in the basic assessment report, but the environmental authorisation did not refer to cumulative impacts and provided no reasoning for how the decision-maker applied his/her mind.

The environmental authorisation notes, in its 'Reasons for Decision' (DEA, 2019)[188] that the (sustainability) principles contained in section 2 of the NEMA were considered. However, beyond this reference, the environmental authorisation did not provide any reasoning on sustainability or why the project was regarded as sustainable, and no reference was made to the Renewable Energy SEA as providing a strategic context for the project.

In summary, other than the range of functional areas covered by the conditions and the statements contained above (i.e., listing the documents that were considered), there was no reasoning contained in the environmental authorisation to show how the decision-maker reflected on a balanced consideration of the environmental right. From a tiering perspective, the relationship between the Renewable Energy SEA and the Rietkloof EIA in motivating a balanced consideration of the environmental right was absent.

Based on the above, this criterion was evaluated as not conformed to.

Criterion C15.3: To what extent is EIA an effective tool to achieve sustainable development outcomes?

Interviewee A2 referred to the answer provided in response to C15.2 and added that in general, the EIA process forces an EAP to be holistic and to consider all aspects (across the whole spectrum of the broad environment) - i.e., having to consider all aspects of sustainability and this includes compromises/trade-offs to allow development to proceed. Interviewee A2 was also of the opinion that from a strategic spatial perspective, "*there was a need to have no-go areas but also go-areas, with the relevant provisos*".

In a follow-up question on how the Renewable Energy SEA influenced sustainability and how cumulative impacts were considered in the Rietkloof EIA, Interviewee A2 was of the view that the Renewable Energy SEA did not influence the assessment of cumulative impacts. It was highlighted however, that in the case of renewable energy developments located in the REDZs, cumulative assessment must be carefully considered because whilst many such developments were authorised in the surrounding area, many of them lapsed, are re-applied (re-assessed) for,

[188] Annexure 1 to the environmental authorisation issued by DEA on 16 September 2019 (DEA, 2019).

and only a few reaches preferred bidder status and even less are finally developed. This raises the question: "*Does one assess cumulative impacts on all applications or only for preferred bidders*".[189] Interviewee 1 stated that they "*did a bit of both, depending on the information available, but sometimes access to other decisions was difficult*".

Interviewee A1 expressed the view that EAPs (officials and private practitioners) and specialists would be able to achieve sustainable outcomes, but that currently, the EIA tool was primarily being used to "fight battles between people and the environment" and did not think that "*sustainable outcomes are always achieved in this fight*". Interviewee A1 regarded EIA as an appropriate instrument but maintained that there were "loopholes" to be considered because EIAs did not clarify what must be in specialist studies, how to mitigate impacts, and what type of impacts are acceptable to be approved - often the review EAP (officials) were dependent on other professionals and institutions (e.g., Birdlife Africa) to provide their specialist opinions. Interviewee A1 maintained that it was therefore not possible to fully achieve ecological sustainability (as referred to in the Constitution) in all instances.

In asking Interviewee A1 if SEAs and EMFs should assist EIAs in defining what constitutes sustainability in a specific context, the interviewee replied positively that this should be done at a strategic level but expressed apprehension if this was achieved and applied in practice. Interviewee A1 also viewed EMFs to be more suitable in conveying this sustainability view (and SEAs to a certain extent) but also expressed concern about the lack of clarity on how SEAs/EMFs and EIAs are to be linked to/influence each other.

In summary, the interviewees acknowledged the importance of EIAs in achieving sustainability outcomes but expressed concern about their effective implementation in practice in achieving this goal. The interviewees did, however, express the view that EMFs and SEAs can contribute to setting a strategic context for sustainability, but were not sure that this happened in practice. From a tiering perspective, the role of tiering in setting a strategic context for sustainability was acknowledged by interviewees, but this was not evident in current practices. This view was also confirmed in reviewing the information in the Rietkloof Case Study.

Based on the above, this criterion was evaluated as partially conformed to.

[189] According to Government's Renewable Energy Independent Power Producer Procurement Programme (Eberhard & Naude, 2016), Independent Power Producers submit bids to develop renewable energy projects which are evaluated against set criteria (including price competitiveness job creation, using locally produced goods, social development initiatives and community ownership). The successful proposals then receive what is referred to as 'Preferred Bidder status'.

Criterion C15.4: To what extent will tiering be of value to assist EIAs in delivering sustainable development outcomes?

Interviewee A2 referred to previous experiences where EMFs influenced projects by changing the regulatory process by screening such projects to only require basic assessments – i.e., development projects that trigger listed activities in Listing Notices 1 and 3 were only required to follow basic assessment (i.e., reducing the regulatory process from a S&EIR process to basic assessment process). However, Interviewee A2 also mentioned the following challenges - that EMF information was often difficult to find, was outdated, that there was a lack of access to the shape files, or that the environmental management zones in the EMFs were too broad/general and open to interpretation. In general, therefore, the quality of EMFs (i.e., the info available to EAPs) was a challenge.[190] In contrast, the REDZs and the subsequent guidance provided by the regulatory process, were effective as they gave guidance and information was readily available.

Interviewee A2 maintained that in general, "… *in an ideal world, the relationship between the EMF/SEA and the EIA should be clear. The EMF should indicate areas for no development, areas for BA /full EIA, and areas for no assessment".* Interviewee A2 also believed that the EMF should, "…*to a certain extent, indicate where different types of development could be located*". It should (for Municipal EMFs) "…*aid the Municipality to improve the efficiency of decision making and supply services quicker*". Also, "…*EMFs should identify the urban edge and where certain listed activities do not apply*" (i.e., certain listed activities did not apply if located within the planned urban edge).

When asked if SEAs influence trade-offs between socio-economic and biophysical aspects, Interviewee A2 expressed the opinion that they did, if used correctly, and believed that a strategic context should enable a flexible impact management system with a range of assessment options, including in certain instances only requiring an environmental management plan (i.e., reducing the level and even the need for an assessment).

The view of Interviewee A1 on the question of SEAs and EMFs should assist EIAs in defining what constitutes sustainability in a specific context, which was the same as already reflected in Criterion C15.4.

[190] Interviewee A2 admitted to not having recently conducted a project EIA in an area where an EMF was applicable but expressed the opinion that based on past experiences, EMFs were not great. The experience of Interviewee A2 was that an EMF would indicate an area being suitable for industrial development, but then still triggers an EIA regardless, or the authorities will request specialist studies regardless the context created by the EMF.

In summary, the interviewees confirmed that although not always experienced in practice, tiering would be of value in EA. This reflection on the (potential) value of tiering was focused on the regulatory efficiency as well as the substantive effectiveness.

Based on the above, this criterion was evaluated as partially conformed to.

6.4 Key observations emerging from the Rietkloof case study:

From the results of the Rietkloof case study, a number of key observations emerged that are relevant to tiering in EA. These observations are not related to specific criteria, but apply to EA tiering in general, as observed in the case study. The observations relate to the political will to implement tiering, the impact mitigation hierarchy, just administration (reasons and reasoning), Just administration - reasons and reasoning, knowledge brokerage, power dynamics, the relationship between tiers and the application of trade-offs.

Political will to implement tiering: The policy and legislative context for renewable energy development clearly illustrates the approach by the South African Government to use both policies and legislation to drive towards the implementation of renewable energy developments (and SIPs in general). However, *vice versa*, the need for renewable energy development to contribute to economic growth to address the country's socio-economic challenges and international climate change commitments was also used to drive policy development. This history also illustrated the "messiness" of tiering in that it does not flow in a logical top-down sequential hierarchy where the top tier is developed first to inform other subsequent, lower tiers. Although the NEMA does not explicitly include explicit provisions to require tiered assessments and decision-making (in the same manner as the planning legislation through the SPLUMA), the NEMA does include enabling provisions that can be used to conduct tiered assessments and decision-making. An important differentiation, however, is that whilst tiered planning is a legislated requirement in terms of the planning legislation (i.e., SPLUMA), tiered EAs/environmental planning in terms of the NEMA is not a legal requirement, but depends on the willingness of environmental authorities to utilise enabling provisions in a novel way as was done for the renewable energy sector where the outcome of the Renewable Energy SEA was the identification of REDZs and the development of revised (reduced) regulatory procedures. This case study represents one of the few examples in South Africa where a tiered assessment resulted in tiered decision-making that materially influenced the nature of the assessment and decision-making at the subsequent project level tier. It is also an example of a tiered assessment at the programme level (within the hierarchy of policies, plans, programmes, and projects), also culminating in law reform to streamline regulatory

processes in the subsequent project-level tier. The Renewable Energy SEA reflects that whilst tiered EAs in terms of the NEMA are not a legal requirement, it can be done if there is the willingness of environmental authorities to utilise existing enabling provisions, as well as embarking on further law reform.

Impact Mitigation Hierarchy: An important observation flowing from the visual specialist study conducted as part of the Rietkloof EIA was that it did not use the information contained in the SEA to reduce the impact significance rating, but rather used this information to conclude that the residual impact must be regarded as acceptable in light of the strategic context (i.e., the identification of REDZ as sacrificial areas to localise visual impact to a specific zone, and the socio-economic importance of renewable energy). As such, in the visual specialist assessment in the Rietkloof EIA, the strategic context did not influence the mitigation hierarchy but rather influenced the trade-off between different impacts (i.e., it was used to motivate that the residual visual impact was an acceptable trade-off when considering the strategic context – "*It is concluded that potential losses of scenic resources are not sufficiently significant to present a fatal flaw to the proposed project. It is, therefore, recommended that the project proceed, on condition that the mitigation measures identified in this VIA are met throughout the various phases of the development."*[191]

Just administration - reasons and reasoning: In reviewing the Rietkloof EIA information, it was determined that whilst the strategic context may well have influenced the EIA decision-making process, and that the decision-making authority was aware of the strategic context, this was not well argued (conveyed) in the environmental authorisation. The information contained in decisions is an important issue, as it is not only the reasons but also the reasoning that was important in reflecting informed decision-making,[192] consistent with the PAJA requirement for fair and reasonable administrative action. Furthermore, it is also important to convey to stakeholders that the decision-maker regards the strategic context as an important consideration in the decision-making process. In this instance, the decision-maker failed to reflect in its reasoning on the importance it attached to the strategic context in the environmental authorisation that was issued. Also, due to the lack of information in the environmental authorisation on the strategic context, it is understandable that stakeholders (especially the general public and in particular the neighbouring farmers who objected) may be confused why a second application (for the same type and scale of development in the same location) was regarded in a favourable light and authorised. It was also surprising that one of the 'Need and Desirability Guideline' (DEA,

[191] Page 57, Appendix L to the Basic Assessment for the Rietkloof Windfarm (WSP, 2019).

[192] Lezmin 2588 CC v The Provincial Minister for Local Government, Environmental Affairs & Development Planning, Western Cape & the City of Cape Town (21935/2009), Judgement delivered on18 Oct 2010 (Judge Blignault, 2010). .

2017c),[193] as a key policy document that could be used to reason the importance of the strategic context, was not used by the decision-maker (i.e., is not reflected in the environmental authorisation). Although the EIA decision did not refer to the strategic environmental context, the decision-making authority, by accepting a revised regulatory process, and by the favourable consideration of a development proposal that was initially largely turned down (i.e., only 9 turbines approved before the creation of the strategic environmental context), indicated that the decision-maker was alive to the existence of the changed strategic environmental context and that this significantly influenced the decision-making process. However, the strategic context did not influence (or was not reflected in) the reasons provided for the EIA decision or the reasoning of the decision-maker.[194] The value that the decision-maker attached to the strategic context (other than acknowledging and utilising the revised regulatory process), was not reflected in the written decision (i.e., it is not reflected in the reasoning provided in the environmental authorisation). This lack of reasons and reasoning was unfortunate as the interested and affected parties/ stakeholders, therefore, did not understand the value that the decision-maker attached to the strategic context. Importantly, if the omission of a discussion on need and desirability as part of the decisions issued by the decision-making authority is a general tendency, it holds significant implications for EIA practices. Simply put, if the decision-making authorities are not clear in the value they attach to the strategic context, EAPs and other stakeholders will not do so either. Consequently, the knowledge brokerage role that decision-making authorities should play is diminished - i.e., the importance of knowledge sharing and transfer, as a way of breaking down barriers that impede interaction, healthy communication, and collaboration. In this case study this knowledge brokerage role was lost.

Knowledge brokerage: During the interviews, the need for and use of tiering is not reflected in the language used by the persons interviewed, but once tiering is explained, the relevance and application thereof (although not explicitly reflected in practice) were acknowledged. Beyond the use of the revised regulatory procedures, the EIA documentation did not make any extensive use of the SEA information during the EIA process, and even if the strategic context did influence the EIA process and decision-making, this was not well argued (conveyed) in the EIA documentation

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[193] At the time of the application, the 2014-version of the guideline was available.

[194] Lezmin 2588 CC v The Provincial Minister for Local Government, Environmental Affairs & Development Planning, Western Cape & the City of Cape Town (21935/2009), Judgement delivered on18 Oct 2010. In the judgment, the following is also quoted another judgment to highlight that decision-makers should explain decisions "….*in a way which will enable a person aggrieved to say, in effect. "even though I may not agree with it, I now understand why the decision went against me. I am now in a position to decide whether that decision has involved an unwarranted finding of fact, or an error of law, which is worth challenging.*

This requires that the decision-maker should set out his understanding of the relevant law, any findings of fact on which his conclusions depend (especially if those facts have been in dispute), and the reasoning processes which led him to those conclusions. He should do so in clear and unambiguous language, to in vague generalities or the formal language of legislation……".(Judge Blignault, 2010)

decision by the authority. Providing such information is important as it is not only the reasons but also the reasoning that should inform decision-making by the EIA EAP and decision-makers. Furthermore, it is also important to convey to stakeholders that the EIA EAP and decision-makers regard the strategic context as an important consideration in assessment and decision-making. In this instance, the EIA EAP (in the draft BA that was submitted to the stakeholders for comment, as well as the final BA that was submitted for decision-making) did not extensively engage with the information contained in the SEA to reflect the importance it attached to the strategic context. Also, due to the lack of information in the environmental authorisation on the strategic context, it is understandable that stakeholders (especially the general public and in particular the neighboring farmers who objected) may be confused as to why a second application (for the same type and scale of development) was regarded favourably. Importantly, this focus on conveying information is related to the importance of the SEA as a knowledge brokerage instrument and the role of the EAP in facilitating this knowledge exchange. Based on the expectations expressed by Interviewee A1 on the guidance that should be provided by SEAs (e.g., the extent to which an SEA/EMF can determine the information requirements in all instances for the next tier, or how to assess impacts), it seems that the knowledge brokerage role of the Renewable Energy SEA and SEAs and EMFs in general are poorly understood.

Power dynamics and the extent to which the EIA deals with environmental rights in a balanced manner: Interviewee A2 was of the view that the EIA was an appropriate instrument to present information in a balanced manner to give effect to environmental rights. Interestingly, the EAP was of the view that the SEA did not contribute to achieving the goal of achieving the environmental right in a balanced manner, but that sustainability was achieved based on project-specific information. Interviewee A1, on the other hand, was of the view that the EIA did not deal with environmental rights in a balanced manner, mainly based on the challenge of dealing with trade-offs between “environmental” versus “economic” interests and the presence of power dynamics where the economic considerations tend to overpower environmental. The environmental authorisation issued by the decision-making authority listed the documents considered and provided a broad list of reasons to support the decision. However, the *reasons* provided contained no substantive *reasoning*, to provide the reader with any sense of how the decision-maker arrived at a decision and how the decision-maker reflected on a balanced consideration of the environmental right. The above highlighted the following:

- Achieving sustainability or sustainable outcomes is project-specific and context-specific. In other words, the context within which a development site is situated should give guidance to which component of the environment should receive preference, and that all components cannot receive equal consideration in all instances in all environments.

- That power dynamics is a reality that is present in most EIA processes - in how information is analysed, presented, and reviewed for decision-making. Also, the strategic context is an integral part of power dynamics – i.e., it is used in power dynamics to influence views and justify views.
- The decision-maker should provide both the reasons and substantive reasoning must be clear to provide the reader an understanding of how the decision-maker arrived at their decisions and how the decision-maker reflected on a balanced consideration of the environmental right.

The relationship between tiers and the application of trade-offs: When asked if the Renewable Energy SEA influenced trade-offs between socio-economic and biophysical aspects, Interviewee A2 responded positively. However, this view differed from the information in Rietkloof EIA, which indicated that only the visual specialist used the strategic context created by the SEA to motivate a trade-off. As such, there seems to be a difference between theoretical conceptions of how SEAs/EMFs should be used for trade-offs, and the practical application thereof during the EIA process. Also, the SEA did not communicate clearly whether the establishment of the REDZ was seen as a trade-off (i.e., that the visual impact of multiple windfarms was regarded as an acceptable trade-off for other benefits associated with renewable energy developments). Neither the SEA, nor the EIA was clear on the trade-offs between different forms of capital. However, the willingness to make trade-offs between natural /socio-ecological capital and socio-economic capital indicates a 'weaker' level of sustainability. This case study reflected a lack of clarity in EA practice on when and how trade-offs should be applied and how this should be dealt with during the EIA process and decision-making.

6.5 Theory of Change Narrative for the Rietkloof Case Study in practice

The extent to which the 15 assumptions that underpinned the logical framework for EA support the Rietkloof Case Study is depicted in Figure 6-3. Based on the case study analysis of the performance of these assumptions, the ToC narrative for the Rietkloof Case Study is described as follows:

Whilst the institutional context that existed in the form of legislation and policies only partially supported the established tiered EA information, the political will existed to allocate resources and conduct a strategic environmental assessment for renewable energy and establish revised regulatory procedures to inform and provide guidance to EA processes (design component) [(Assumption 1 and 2)]*. Environmental impact assessment (EIA) was, therefore, informed by a credible and current strategic context. The EIA process used the revised regulatory process, but the*

strategic contextual information of the SEA was not used during the EIA process, [(Assumptions 3, 4, 5, 6, 7, and 8)] *(input component). Conducting the EIA processes (activity component), resulted in EIA reports as deliverables, and the review thereof produced decisions (output component), that were aligned with the strategic context,* [(Assumptions 9 and 10)] *although stakeholders did not attach a value to the strategic context and its contribution to sustainability* [(assumption 11, 12 and 13)] *(outcome component). Whilst being consistent with the strategic context, the EIA and the EIA decision did not reflect on the progressive realisation of the environmental right contained in Section 24 of the Constitution, limiting the contribution thereof to cooperative environmental governance* [(Assumptions 14 and 15)] *(impact component).*

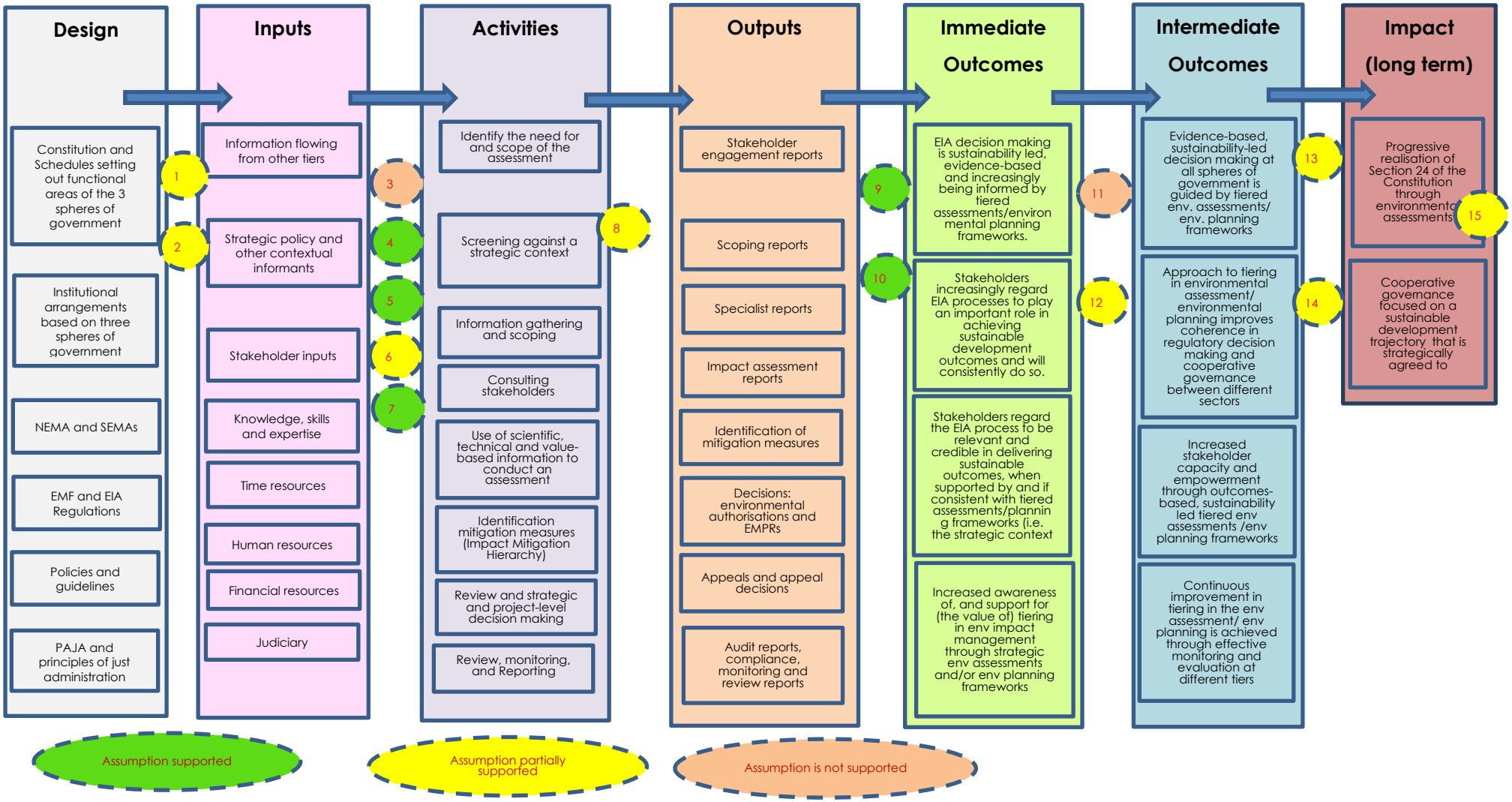

Figure 6-3: ToC Map of the Rietkloof Case Study

CHAPTER 7: PENHILL CASE STUDY

This chapter addressed research objective 3 by evaluating tiering within the South African EA system, based on the Penhill Case Study. Section 7.1 introduces the case study. Section 7.2 provides a summary of the results of the case study analysis. Section 7.3 contains a detailed analysis based on the evaluation criteria per ToC component. Section 7.4 discusses key observations from the Penhill Case Study. Section 7.5 presents the ToC map and narrative for the Rietkloof Case Study in practice, based on the analysis contained in the preceding section.

7.1 Background and Overview of the Penhill Case Study:

The Penhill Case Study involved tiering between an EIA application and a specific, uniquely South African strategic-level environmental policy instrument, namely an EMF. See Chapter 4 for detailed discussions on EMFs.

The City of Cape Town decided to follow an integrated planning approach that integrated the environmental planning/assessment process for an EMF, with the planning process for the development of an SDF. The CoCT 2012 SDF and CoCT 2013 EMF were aligned and were the outcome of producing integrated District Spatial Development Plans/EMFs for each of the eight (8) districts within the CoCT. Figure 7-1 provides a timeline and sequence of events related to the Penhill Case Study. An explanation of the referencing protocol of interviewees and case study documentation can be found in Chapter 5, in Table 5-3.

The proposed Penhill Mixed Use development (the “Penhill development”) is a greenfield mixed-use development on a farm inside the urban edge of Cape Town (see Figure 7-2). The development would result in the loss of agricultural land, a portion of indigenous vegetation, and the infilling of a wetland to establish a mixed-use development consisting of the following components:

- Residential component (about 8000 mixed housing units catering for about 32 000 people).
- Commercial and industrial components (A neighbourhood shopping mall, light industrial and other commercial uses).
- Agricultural component (i.e., small-scale farmers through the provision of land for agriculture and small holdings).
- Sewage package plant and other services; and

- Community facilities, schools, sports fields, parks and open spaces (Aurecon, 2019).

Figure 7-1: Timeline and sequence of events related to the Penhill Case Study

The decision-making timeline is as follows:

- Development of the City of Cape Town Spatial Development Framework 2012: The CoCT developed an SDF (CoCT, 2012a) that was approved in terms of the Land Use Planning Ordinance, 1985 (LUPO) (South Africa, 1985) in May 2012 in the Provincial Notice No 824 in Provincial Gazette No 6994, dated 18 May 2012. The CoCT 2012 SDF was the primary land use management policy instrument and guides all land use and strategic spatial planning decision-making in the metro.

- Development of 8 integrated District SDPs/EMFs: The CoCT developed 8 integrated District SDPs/EMFs to inform the CoCT 2012 SDF. The specific District SDP/EMF relevant to the Penhill site was the Khayelitsha Mitchells Plain Greater Blue Downs DSDP/EMF (CoCT, 2012b). The collective EMF components of the 8 DSDPs/EMFs were presented as the CoCT 2013 EMF (CoCT, 2013) (hereafter referred to as the 'Greater Blue Downs District SDP/EMF' or 'District SPD/EMF').

- Adoption of the CoCT 2013 EMF: The EMF components of the 8 District SDPs/EMFs were collectively presented to the Provincial Minister for Local Government, Environmental Affairs and Development Planning in 2013 for adoption. The CoCT 2013 EMF (CoCT,

2013) was adopted in September 2013 in terms of the Environmental Management Framework Regulations, 2010 (South Africa, 2010) (EMF Regulations).[195]

- Commencement of the pre-application part of the EIA process for the Penhill development: Due to the tight timeframes of the formal EIA process once it commenced, many applicants and EAPs have pre-application meetings with the decision-making authorities and other stakeholders. The purpose thereof is to ensure that adequate information is available when the formal EIA process commences, and that unnecessary delays during the EIA process are avoided. The pre-application phase for the Penhill EIA process commenced in February 2017.

- Review of the CoCT 2012 SDF and adoption of the CoCT 2018 SDF: In 2013, new planning legislation was promulgated, the Spatial Land Use Planning Act, 2013 (SPLUMA) (South Africa, 2013). The SPLUMA makes provision for the review of SDFs.[196] The CoCT 2012 SDF was reviewed and the new CoCT 2018 SDF was adopted in terms of the Cape Town Municipal Planning By-law, 2015,[197] the Municipal Systems Act (South Africa, 2000c),[198] The SPLUMA,[199] and the Western Cape Land Use Planning Act, 2014 (LUPA) (South Africa, 2014).[200] The CoCT 2018 SDF did not change the strategic context of the CoCT 2012 SDF as it related to the Penhill site. The adoption of the CoCT 2018 SDF did not change the status of the CoCT EMF.

- Application for Environmental Authorisation: In terms of the legal requirements of the National Environmental Management Act, 1998 (Act No 107 of 1998) (NEMA) and the Environmental Impact Assessment Regulations, 2014, the proposed development triggered the need for an environmental authorisation before commencing with the proposed development. An application for environmental authorisation was submitted by the Western Cape Department of Human Settlements (Western Cape Government) (the applicant) with Draft Scoping Report in January 2018 (Aurecon, 2018).

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[195] EMF adopted in terms of regulation 5(4)(b) of the EMF Regulations (2010), in Provincial Notice No 297 in Provincial Gazette No 7172 of 13 September 2013).

[196] It should be noted that in the period between the development of the CoCT 2012 SDF and the CoCT 2018 SDF, the planning legislation was amended. The SPLUMA and the Western Cape Land Use Planning Act, 2014 (South Africa 2014b) were enacted and the LUPO was repealed.

[197] Section 10 of the Cape Town Municipal Planning By-law, 2015 (CoCT, 2015).

[198] Section 21 of the Municipal Systems Act 2000 (South Africa, 2000c).

[199] Section 20 of the SPLUMA (South Africa, 2013).

[200] Section 11 of the Western Cape Land Use Planning Act, 2014 (South Africa, 2014b).

- Submission of the final Environmental Impact Report (EIR): The Environmental Impact Assessment that was done for the Penhill Development (the Penhill EIA) culminated into the submission of the final EIR, dated 18 April 2019 (Aurecon, 2019) to the decision-making authority, Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) for consideration and decision-making.[201]

- Issuing of an environmental authorisation: An environmental authorisation decision (the EIA decision) was issued by the DEA&DP on 3 May 2019 (DEA&DP, 2019).

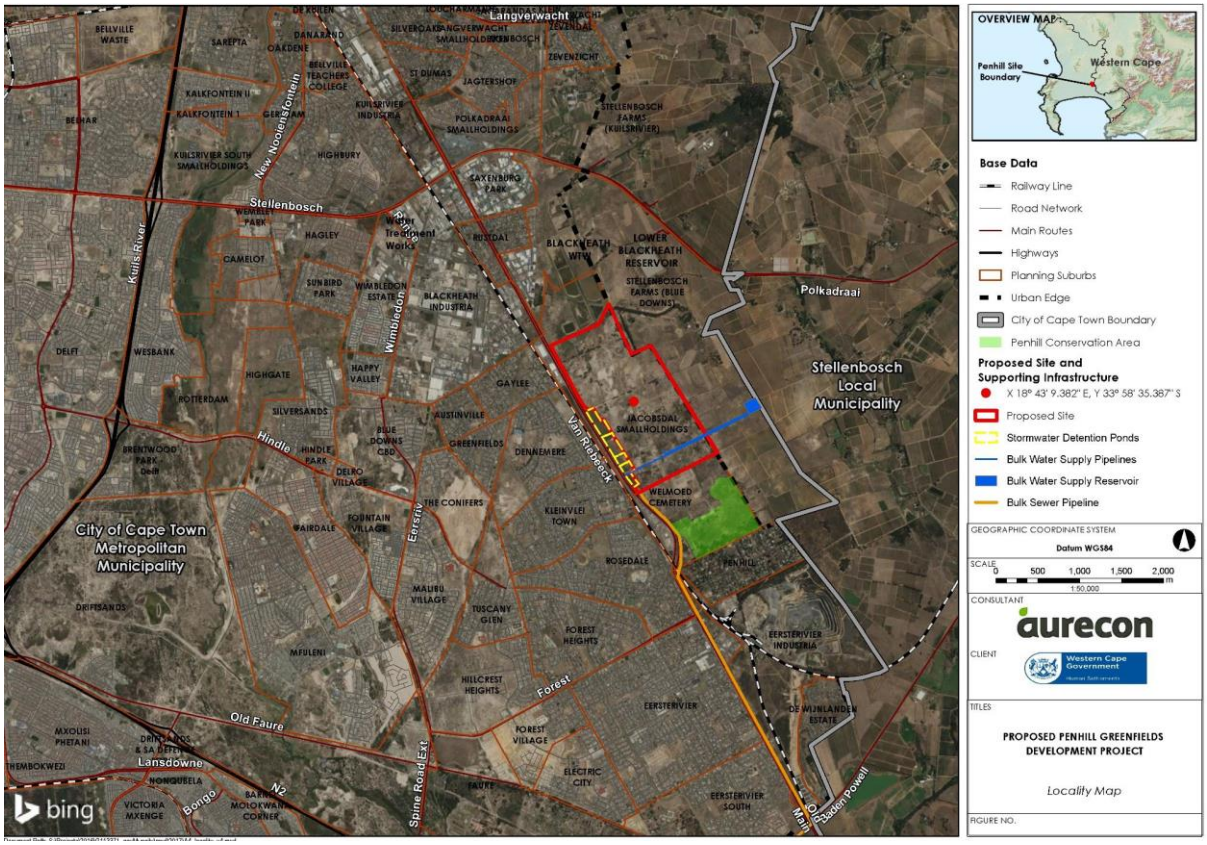

Figure 7-2: Locality map for the Penhill development (Aurecon, 2019)

7.2 Analysis and Results of the Penhill Case Study

The results from the 35 criteria evaluated for Case Study 2 (the Penhill Greenfields Mixed Use development) show that 11 criteria conformed to expectations, while 18 partially conformed, and

[201] The identification of DEA&DP as the decision-making authority is consistent with the legal requirements in section 24C of the NEMA (South Africa, 1998a).

6 did not conform. The results are presented in Table 7-1. The detailed results for each criterion are discussed in the sections below.

The rating of criteria as conforming, partially conforming or non-conforming (green, yellow and red colour coding, respectively) was the subjective evaluation of the researcher based on the detailed information contained in section 7.3.

ToC Component	Assumption	Evaluation criteria
Conformance	***Partial conformance*** / ***Non-conformance***	
Design Component	Assumption A1: It is assumed that the environmental management policies and the legislative framework make clear provisions for tiered environmental assessments and decision-making, in support of establishing a credible, evidenced-based strategic context for EIAs (and other project-level assessment and decision-making)	C1.1
		C1.2
		C1.3
	Assumption A2: Authorities are committed to developing institutional arrangements required to establish strategic context (tiers) to support project-level assessments and decision-making.	C2.1
		C2.2
Input Component	Assumption A3: A relevant strategic environmental context is available in the form of a strategic level assessment and/or environmental management framework, to guide assessment and decision-making at the project level	C3.1
	Assumption A4: Functional specialists provided clear guidance in setting a strategic context and the translation thereof into project-level inputs	C4.1
	Assumption A5: The strategic environmental context was the outcome of an evidence-based policy formulation and a credible environmental assessment process	C5.1
		C5.2
		C5.3
	Assumption A6: The strategic environmental context is supported by relevant key role-players	C6.1
		C6.2
	Assumption A7: The preceding tiered environmental assessment considered both policy/legislation inputs (vertical tiers), as well as other sector inputs (horizontal/diagonal tiering).	C7.1
		C7.2
		C7.3
Activity Component	Assumption A8: EAPs, in compiling the assessment and the review thereof are aware of and understand the role of strategic contextual informants when conducting their duties	C8.1
		C8.2
		C8.3
		C8.4
		C8.5
		C8.6
Output Component	Assumption A9: The EIA decision will validate and strengthen the strategic environmental context	C9.1
Immediate Outcome Component	Assumption A10: Tiered environmental assessments provide clear guidance to lower tiers to facilitate sustainability outcomes at project level assessment and decision-making.	C10.1
	Assumption A11: In considering what constitutes sustainability outcomes, stakeholders attached value to aligning project-level assessments and decisions to the strategic environmental context	C11.1
		C11.2

Intermediate Outcome Component	Assumption A12: The need for aligned/ integrated decision-making will promote the value of tiered environmental assessment to overcome sectoral interests	C12.1
	Assumption A13: The support for the value of tiering in environmental assessment results in allocating resources and establishing institutional arrangements to support strategic-level environmental assessment	C13.1
		C13.2
Impact Component	Assumption A14: The strategic context (through SEAs or EMFs) is actively contributing to sustainable development goals	C14.1
		C14.2
		C14.3
	Assumption A15: EIAs are supported as essential instruments in tiering in environmental assessment for achieving environmental rights.	C15.1
		C15.2
		C15.3
		C15.4

Table 7-1: Analysis of the Penhill Case Study

7.3 Case study analysis per ToC component

This section presents the analysis of the Penhill Case Study according to the various ToC components and their relevant evaluation criteria in Table 5-1.

7.3.1 The Design ToC Component

The criteria developed to evaluate the assumptions related to the Design ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criteria C1.1, C1.2, C1.3, C2.1, and C2.2, as discussed in the following section.

Criterion C1.1: To what extent does the policy context promote tiering in environmental assessment and decision-making?

At the time when the EIA was conducted, there was a well-developed policy context for urban development, including South Africa's National Development Plan 2030 (NDP) (National Planning Commission, 2012), the Western Cape Provincial Spatial Development Framework, 2014 (PSDF) (DEA&DP, 2014), and the Human Settlement Programme (DHS, 2014). This policy context, combined with the tiering provisions in the land use legislation, culminated in a well-developed tiering system in land use planning. However, there is no specific policy context for urban development that promotes tiering in EA.

As discussed in Chapter 2, the notion of tiering was also reflected in the discussion of integrated environmental management in the Environmental Impact Assessment and Management Strategy for South Africa (EIAMS) (DEA, 2014). The EIAMS highlighted the role of SEAs and EMFs in creating a strategic context for EIAs.

As a policy document, the 'Environmental Management Framework Guideline' (DEA, 2012) elaborated on the content requirements for EMFs as set out in the EMF Regulations (South Africa, 2010). It confirmed the purpose of EMFs to provide a strategic context for EIAs and planning initiatives in other sectors.

The 'Need and Desirability Guideline' (DEA, 2017c) also provided a policy context for tiering. It provided guidance on how to consider the strategic context provided by EMFs and SDFs, during EIA processes and decision-making. In doing so, it strengthened the tiering relationship between EIAs and EMFs.

The above-mentioned policy documents did not specifically promote tiering in EA, but they highlighted the tiering role of EMFs and SEAs. The CoCT 2013 EMF (and its 8 SDP/EMFs) contributed to tiering in EA by creating a tiering pathway between legislation, policies, programmes, and projects, in support of urban development within the CoCT.

In summary, there was a clear strategic land use policy and planning context available to inform the Penhill development proposal. However, the same clear policy context was not available to promote tiering in EA, although the tiering role of specific instruments was captured in policy documents. The CoCT 2013 EMF contributed positively towards creating tiering in EA.

This criterion was evaluated as partially conformed to.

Criterion C1.2: To what extent does the legislation include adequate enabling provisions to mandate tiering in environmental assessment, environmental planning, and tiered decision-making?

The environmental legislation did not explicitly contain provisions that required the development of different tiers of EA, whereas the land use planning legislation did. The LUPO, and now the LUPA and the SPLUMA[202] made provision for SDFs and a lower tier of District SDPs,[203] with the

[202] The LUPO was repealed by the LUPA in 2013, and all SFDs are currently being developed in terms of the SPLUMA (as national legislation) and LUPA (as provincial legislation).

[203] Section 4 of the LUPO (South Africa, 1985).

explicit requirement that subsequent, lower tiers must be consistent with the preceding tier. In the Penhill Case Study, tiering in EA specifically benefitted from its integration into the planning processes, by creating a municipal-level CoCT 2013 EMF, which was the combination of 8 District EMFs. It should also be noted that since the development of the CoCT 2012 SDF, new planning legislation was promulgated, the SPLUMA (South Africa, 2013), which was explicit in its requirements for the development of SDFs at national, provincial, regional, and municipal levels.[204]

Whilst the environmental legislation did not explicitly require the interlinking of tiered assessment/planning, it did provide for the development of policies, plans, strategies, frameworks, and project-level regulatory instruments, albeit in a more disjointed way. Therefore, the hierarchy of different levels of assessments/planning was not set out, nor was the relationship between them.

The CoCT decided to follow an integrated planning approach by combining the drafting of an EMF and SDF into a single process. The content requirements for the CoCT 2013 EMF were provided for through the EMF Regulations, 2010 (South Africa, 2010). The procedural and content requirements of the EMF Regulations were followed in drafting the CoCT 2013 EMF. The CoCT 2013 EMF was adopted by the Provincial Minister responsible for environmental management in the Western Cape.[205] The EMF was a geographical area-based tool that interrogates the extent, sensitivity, interrelationship, and significance of environmental attributes in the CoCT, including the Penhill site, and must be taken into account by decision-making authorities when reviewing applications for environmental authorisation.[206] As such, the legislation provided a clear tiering relationship between EMFs and EIAs.

A call for improved cooperation between different sectors at a strategic planning /assessment level was provided for in both the NEMA and the SPLUMA, as well as the EMF Regulations. The CoCT's integrated District SDPs/EMFs gave effect to this cooperative governance principle. However, whilst the integrated DSDPs/EMFs were a huge step towards alignment/integration between environmental and development planning, the planning legislation only made provision for the adoption of an SDF (or District SDPs) by the Municipal Council,[207] whereas the environmental legislation (i.e., the EMF Regulations), only made provision for the adoption of an

[204] Chapter 4 of the SPLUMA (South Africa, 2013).

[205] Provincial Notice No 297 in Provincial Gazette No 7172 of 13 September 2013.

[206] Regulation 2(1) of the 2010 EMF Regulations (Soth Africa, 2010).

[207] Section 4 of the LUPO and subsequently (after 2013), Section 20 of the SPLUMA.

EMF by the MEC (Provincial Minister) with concurrence by the (national) Minister.[208] As such, to have legal effect, the District SDP and the EMF had to be adopted separately in terms of the NEMA and the EMF Regulations, by the Cape Town City Council and the Provincial Minister, respectively.

In summary, the NEMA, as the framework legislation for environmental management in South Africa, did not specifically set a requirement for tiering in EA in South Africa. It did, however, contain provisions that could be used (and if the political will existed) to create tiered assessments. An EMF was a mechanism that enabled tiering, although it was voluntary. However, once adopted, such an EMF must be considered by environmental decision-making authorities. The integrated Greater Blue Downs District SDP/EMF provided the strategic context for project-level EIA processes and thus served to inform the EIA and decision-making process for the Penhill development.

Based on the above, this criterion was evaluated as partially conformed to.

Criterion C1.3: To what extent is there a need for policy and law reform to enable or improve tiering in environmental management?

The case study interviewees applied the relevant policies and legislation uncritically and did not express any view on the need for policy or law reform.

In replying to EA in general, Interviewee E1 was of the view that there were policy and legislation gaps, but that these gaps cannot be filled through policy and law reform *per se*. The interviewee believed that one of the biggest challenges was the time horizons of planning – to enable sustainability, these timeframes were intended to be forward-looking (e.g., EMFs and SDFs), but at most, they are 5 -10-year planning horizons. The interviewee stated that South Africa did not have legislation that required long-term planning, long-term budgeting, and that focused on long-term perspectives that required long-term budget choices. The interviewee maintained that this was relevant to EA because legislation must enable the evaluation of short-term decisions (and budgeting) within the context of long-term policy (sustainability) perspectives. In other words, "…*legislation and policies must enable us to counter decisions that will lock us into unsustainable development choices*" (Interviewee E1).

[208] Regulation 5(4) of the EMF Regulations (Government Notice 33306) (South Africa, 2010).

Interviewee E3 believed that law reform was required to ensure the more explicit use of other instruments to support EIAs. This includes the use of strategic-level EA instruments such as EMFs, however, the voluntary status of these instruments was hampering its effectiveness, and must be addressed in law reform. The interviewee was also of the opinion that law reform was needed to enable the use of a broader suite of IEM instruments in South Africa (strategic and project-level EA instruments). In terms of strategic-level assessments, Interviewee E3 believed that law reform was needed and that legislation should dictate when and how EMFs and SEAs were required. The interviewee used the renewable energy sector as an example and noted that if the legislation were in place to regulate the use of SEAs for different sectors, it would result in more consistency and not the unique regulatory dispensations that differed between sectors.

The interviewees D4 and D5 promoted that the current voluntary status of EMFs was a challenge that must be addressed through law reform. Interviewee D5 also noted that environmental planning cannot be left to Municipalities, but should remain a provincial competency because ecological boundaries did not align with the administrative boundaries of municipalities and that this challenge can only be addressed through EMFs (and assessment being an integral part thereof). Interviewee D5 believed that making EMFs a mandatory requirement could resolve the persistent challenges of EMFs being considered a "*nice to have*".

This criterion was evaluated as not being conformed to, meaning that the current policy and legislative context was inadequate, and policy and law reform were required.

Criterion C2.1: To what extent is there support for tiering in environmental assessment in South Africa and provinces?

The interviewees were uncertain how to reply to the question and had to be prompted. However, once the theoretical concept of tiering was explained, the interviewees indicated that, in general, tiering was important to support EIAs. However, this general support was not replicated in the EIA or the EIA decision in this case study – see discussion on criteria C6.1, C8.1, and C9.1.

Interviewee E1 expressed the view that in the Western Cape, there was effective functional-specific environmental planning within the different functional areas within the environmental sector, but that there was no integrated assessment and plan/strategy that pulled everything together.

Interviewee E3 thought there was no specific strategy and expressed the view that pressures in certain sectors resulted in resources being made available to conduct SEAs (such as the

renewable energy sector). However, there was no strategy on the allocation of resources, or when integrated environmental management (including EA) instruments were to be considered.

Interviewee B1 regarded tiering as essential to support EIA processes, but believed that this was not implemented in practice.

In summary, and from a tiering perspective, whilst interviewees supported the notion of tiering, the case study performance did not reflect this support for tiering, as the strategic context was poorly reflected in the EIA and the EIA decision.

Based on the above, this criterion was evaluated as partially conformed to.

Criteria C2.2: To what extent is there a specific strategy in the province to promote and implement strategic environmental assessment and /or environmental planning initiatives?

Interviewees B1, B3, and B4 did not express an opinion on the specific strategy in the province to promote and implement strategic environmental assessment and /or environmental planning initiatives.

In the more general replies, Interviewee E1 expressed the view that in the Western Cape, there was effective functional-specific environmental planning within the different functional areas within the environmental sector, but that no integrated assessment and plan/strategy pulled everything together. The interviewee noted that whilst EIPs were supposed to play an important role in integrating different sector department's strategies/plans in the provinces, it was not effective in doing so (i.e., it was combining the plans and strategies of different Departments, but not assessing and providing strategic guidance to manage environmental performance). The interviewee highlighted that the province did not have an integrated strategy for EA and planning and did not have the human and financial resources to do it. Also, a different approach was needed to improve environmental performance, based on identified goals and objectives (including limits of acceptable change).

Interviewee E1 expressed the view that, generally, in the Western Cape, there was effective functional-specific environmental planning within the different functional areas within the environmental sector, but that no integrated assessment and plan/strategy pulls everything together. This criterion was evaluated as not conformed to.

7.3.2 The Input ToC Component

The criteria developed to evaluate the assumptions related to the Input ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criteria C3.1, C14.1, C5.1, C5.2, C5.3, C6.1, C6.2, C7.1, C7.2 and C7.3, as discussed in the following section.

Criterion C 3.1: The availability of an EMF, SEA, or any other strategic environmental context

This criterion applied to the specific case study, as well as the whole of South Africa.

As already highlighted, the CoCT 2013 EMF (CoCT, 2013) applied to the Penhill EIA process and decision-making. Interviewee B3 confirmed that the CoCT 2013 EMF (consisting of 8 integrated District SDPs/EMFs) was informed by a strategic assessment to compile baseline information. The baseline information related to all the functional areas and the same information was used to develop an integrated District SDP/EMF (supporting horizontal tiering).

Interviewees D4, D5, and E1 confirmed that EMFs were not available in all areas in South Africa and that SEAs, as reflected in the Rietkloof case study, were only conducted for selected types of infrastructural development (being sector-focused rather than geographically focused).

In summary, and from a tiering perspective, whilst a strategic assessment context in the form of an EMF was available for this Penhill EIA process, strategic contexts in the form of SEAs of EMFs were not available across the country to inform EIA applications.

Based on the above, this criterion was evaluated as not conformed to.

Criterion 4.1: To what extent were functional professionals and specialists involved in and supported the development of the EMF/SEA?

This criterion dealt with the EMF and the extent to which specialists informed the EMF process.

Interviewee B3 confirmed that the CoCT 2013 EMF and the 8 District SDPs/EMFs were based on current[209] information, as it was informed by a strategic assessment to compile baseline information as part of an integrated EMF/SDF process (CoCT, 2012c). The baseline information related to all the functional areas and the same information was used to develop an integrated

[209] The reference to current information means relevant, up-do-date, credible scientific/technical information that was gathered within the last 5 years.

District SDP/EMF (supporting horizontal tiering). Also, the CoCT 2013 EMF was informed by various specialist functional baseline information (CoCT 2012c).[210] The Greater Blue Downs District SDP/EMF was drafted in-house by the CoCT, and the baseline studies included multiple information sources, including internal databases within the CoCT, specialist reports, and scientific articles from internal and external sources (CoCT, 2012c).[211]

In summary, and from a tiering perspective, the strategic context for the project-level EIA for Penhill was provided by the CoCT 2013 EMF and a District SDP/EMF, which, in turn, was informed by a comprehensive set of baseline information.

Based on the above, this criterion was evaluated as conformed to.

Criterion C5.1: To what extent is the strategic environmental context the outcome of a credible, evidence-based, environmental assessment or environmental planning process that considered all components of the environment?

This criterion evaluated the extent to which the CoCT 2013 EMF was the outcome of a credible, evidence-based, EA or environmental planning process that considered all components of the environment.

Both the LUPO (South Africa, 1985) and the EMF Regulations (South Africa, 2010) were clear and specific in terms of the content requirements of the District SDP and EMF[212] respectively. The fact that the EMF was adopted by the Provincial Minister responsible for environmental affairs (with concurrence from the national Minister responsible for environmental affairs), was an indication that the EMF met the above-mentioned legal requirements and was regarded as credible.

Interviewee B3 confirmed that the District SDP/EMF was based on the technical/scientific inputs from various functional specialists. This included extensive spatial analysis – i.e., a geospatial, science-based analysis to inform environmental and land use planning (CoCT, 2012c). The baseline information was used to draft the District SDPs/EMFs using the CoCT's internal human

[210] The Khayelitsha Mitchells Plain Greater Blue Downs District Plan: Baseline Information and Technical Analysis Report, 2012 included various levels of technical and scientific information (CoCT, 2012c).

[211] The Baseline Information and Technical Analysis Report referenced more than 50 information sources (CoCT, 2012c)..

[212] Regulation 4 of the EMF Regulations sets specific content requirements for EMFs (South Africa, 2010).

resources. The District SDP/EMF process included a stakeholder and public consultation process.

The Khayelitsha Mitchells Plain Greater Blue Downs District Plan: Baseline Information and Technical Analysis Report, 2012 (CoCT, 2012c) included more than 40 scientific and technical information sources (i.e. technical reports, geo-referenced databases, scientific articles and reports, spatial plans and policies) that covered various all the components of the environment (social, economic and bio-physical). The integration of environmental planning and development planning (through the 8 integrated District SDPs/EMFs) also contributed towards a balanced consideration of information across the socio-ecological and socio-economic continuum.

In conclusion, the strategic context, in the form of the CoCT 2013 EMF and the Greater Blue Downs District SDP/EMF within which the Penhill site was located, was the outcome of a credible, evidence-based, strategic environmental assessment/planning process that considered all components of the environment, consistent with the Environmental Right in the Constitution to "…..*secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social developmen*t" (South Africa, 1996).[213]

Based on the above, this criterion was evaluated as conformed to.

Criterion C5.2: To what extent is the strategic environmental context current – i.e., has been compiled/updated within the last 5 years?

This criterion deals with the extent to which the CoCT 2013 EMF contains relevant and current information – i.e., it has been compiled/updated within the last 5 years.[214]

The CoCT 2013 EMF was formally adopted[215] in September 2013 and was current at the time that the Penhill EIA was conducted in the period 2017 – 2018 (i.e., pre-application consultation commenced in 2017) (Aurecon, 2019). It is also important to note that the CoCT 2012 SDF was reviewed and the CoCT 2018 SDF was adopted by the CoCT Council in May 2018 (CoCT

[213] Section 24 of the Constitution of South Africa (South Africa, 1996).

[214] The reference to 5 years is linked to the review periods for the political cycles of 5 years and many strategic planning documents such as Municipal Spatial Development Frameworks or Medium-Term Planning Frameworks of government institutions, are linked to these 5-year planning periods.

[215] Provincial Notice No 297 in Provincial Gazette 7172, dated 13 September 2013.

2018).[216] The CoCT 2018 SDF did not change the strategic context for the Penhill development site.

At the time of conducting the Penhill EIA process, the information contained in the District SDP/EMF was current. When reviewing the Penhill EIA documentation and comparing it with the information contained in the District SDP/EMF, it confirmed that the information in the Greater Blue Downs District SDP/EMF about the Penhill site was accurate and current - i.e., the identification of environmental sensitivities and land use planning categories in the District SDP/EMF was consistent with the information that was contained in final EIR (Aurecon, 2019).

It was noted that the CoCT 2018 SDF and the 8 District SDPs/EMFs were (2021/22/23), following a similar integrated EMF/SDF planning process.

In summary, the strategic context, in the form of the CoCT 2012/2018 SDF, the CoCT 2013 EMF and the Greater Blue Downs District SDP/EMF, within which the Penhill site was located, provided information on environmental sensitivities and land use categories that was current at the time when the EIA was conducted and when the environmental authorisation decision was taken. From a tiering perspective, the currency of information in EMF was an effective foundation to facilitate tiered assessment. Also, the alignment between the District EMF and SDP reflected effective horizontal tiering.

Based on the above, this criterion was evaluated as conformed to.

Criterion C5.3: To what extent is the strategic environmental context the outcome of a consultative environmental assessment or environmental planning process?

The Greater Blue Downs District SDP/EMF adhered to the legal provisions for the development of an SDF and District SDP (in terms of the LUPO or subsequently the LUPA and the SPLUMA)[217] and EMF (in terms of the EMF Regulations), which set clear requirements for public consultation.[218] As such, the District SDPs/EMFs were the outcomes of consultative processes

[216] Provincial Notice 7925 in Provincial Gazette 55827, dated 9 May 2018.

[217] The Land Use Planning Ordinance, 1985, applicable in the Western Cape, was repealed by the Western Cape Land Use Planning Act, 2013, whilst, at a national level, the Spatial Land Use Planning Act, 2013, was promulgated. These statutes all set specific requirements for public consultation when drafting SDFs or District SDPs.

[218] Regulation 3 of the EMF Regulations sets requirements for public consultation in drafting and the EMF (South Africa, 2010) and section 4 of the LUPO set requirements for public consultation in the drafting of and the SDF (South Africa, 1985).

(Interviewee B3; CoCT, 2012b).[219] Interviewee B3 also confirmed that in drafting the 8 District SDPs/ EMFs, public consultation took place at a local municipal ward level. The integrated process also contributed towards socio-economic and socio-ecological interests being dealt with equitably. Also, the different functional departments in the CoCT (i.e., different units within the municipality dealing with different functional areas such as waste, air quality, town planning, environmental management, coastal management, etc.) contributed towards the integrated nature of the District SDP/EMF process.

The District SDP/EMF process ran across multiple years and so did the public consultation process. The 8 District SDPs/EMFs were drafted over 3 phases (CoCT, 2012b):

- *Phase 1*: The CoCT initiated the first phase of public consultation in February 2008 at the sub-council level (i.e., neighbourhood level) to create public ownership in the identification of principles and strategic goals that should guide the process.
- *Phase 2*: the circulation of the draft District Plan(s) circulated for public input August - November 2009. The purpose of this phase was to engage on the proposals contained in the draft District Plans, including the integration of the District EMF and SDP.
- *Phase 3*: The final draft District SDPs/EMFs was submitted for public engagement in 2011 on the amended draft district plans. Thereafter, the final draft District SDPs/EMFs were submitted to CoCT Council structures for approval. At the same time, the CoCT 2013 EMF was also submitted to the Western Cape Government for adoption in terms of the EMF Regulations.

Also, the integration of the District SDP and EMF added to the strong focus on public consultation that covered all components of the environment, especially since most of the issues raised during public consultation were socio-economic in nature (Interviewee B3). Interviewee B3 highlighted, however, that although the opportunity for participation was provided, this did not automatically result in all stakeholders taking up the opportunity to participate.

In summary, the strategic context for the project-level Penhill EIA, in the form of integrated District SDPs/EMFs, was the outcome of a consultative strategic environmental assessment/planning process. From a tiering perspective, both vertical, horizontal and diagonal tiering were the outcome of an integrated consultative process.

Based on the above, this criterion was evaluated as conformed to.

[219] Page 17 of the Khayelitsha Mitchells Plain Greater Blue Downs District Plan contains a summary of the drafting process in 3 phases that is inclusive of public consultation (CoCT, 2012b).

Criterion C6.1: To what extent is the strategic environmental context used by the applicant, EAP, specialists?

The EIA incorrectly stated that "*Currently there is no EMF adopted by the CoCT*……." (Aurecon, 2019).[220] The EAP who conducted the EIA process was unaware of the existence of the adopted CoCT 2013 EMF and was not made aware of the EMF by the decision-making authority (Jones, 2021). Also, no reference was made to the integrated District SDP/EMF in the EIA documentation, and at no stage during the EIA process did the officials from the CoCT or DEA&DP bring the existence of the adopted CoCT 2013 EMF to the EAP's attention.

During the interview, Interviewee B1 confirmed being aware of the adopted CoCT 2013 EMF and supported the strategic context that was provided by the EMF. However, both the final EIR (Aurecon, 2019) and the environmental authorisation issued (DEA&DP, 2019) did not refer to the strategic context provided by the CoCT 2013 EMF or the Greater Blue Downs District SDP/EMF. The EIA only referred to the city-wide CoCT 2012 SDF, and no mention was made of the lower-tier District SDP/EMF. In the 'Need and Desirability' component of the final EIR,[221] it was incorrectly stated that there was no adopted EMF that applied to the EIA.[222] Importantly, this statement was not corrected by the decision-making authority or the officials within the CoCT who participated in the EIA process. None of the correspondence from the decision-making authority during the EIA process highlighted the existence of the EMF or the District SDPs/EMFs and the need to consider the EMF, even though this was a legal requirement in terms of the EMF Regulations[223] and the EIA Regulations.

The CoCT 2012 SDF, the CoCT 2013 EMF, and the integrated District SDP/EMF reflected various environmental sensitivities of the Penhill site, including its existing agricultural use, biodiversity importance and the aquatic environments (CoCT, 2012b).[224]

The site sensitivities identified during the EIA process were consistent with those of the District SDP/EMF, although the latter was not referred to in the main body of the final EIR (Aurecon, 2019). However, based on the alignment between the CoCT 2012 SDF and the District

[220] Page 35 of the final EIA Report (Aurecon, 2019).

[221] Section 3.7 of the Final Environmental Impact Report (Aurecon, 2019).

[222] Page 28 of the Final Environmental Impact Report (Aurecon, 2019).

[223] Regulation 5(2) of the EMF Regulations states that an adopted EMF must be considered in any application for Environmental authorisation affecting the area on which such an EMF is applicable (South Africa, 2020).

[224] The combined sensitivities of the Penhill Site are reflected on page 99, Map F7 of the DSDP/EMF (CoCT, 2012b).

SDP/EMF, the reference to the former meant that the latter was indirectly considered. This relationship is best illustrated by the following passage contained in the final EIR:

"*The proposed project forms part of a national catalytic programme, the activity has been explicitly planned for in the CoCT IDP and SDF. However, the site is zoned as Core 1 spatial planning category in the SDF. Core 1 includes 'statutory conservation areas (biodiversity areas that are formally protected and managed); critical biodiversity areas; conservation priority zones; critical, irreplaceable and restorable biodiversity sites; public conservation areas and private conservation areas' ….. It is most likely zoned as this category due to the remaining fragments of Critically Endangered Cape Flats Sand Fynbos. Although this vegetation has now been partly degraded due to human activities on the site, the loss thereof was assessed as being likely to have a moderate negative botanical impact, prior to mitigation …….. Since CoCT specifically includes for this development in the IDP* [Integrated Development Plan], *and the SDF is in conflict with this, a deviation from the SDF is part of the Land Use Planning Approval (LUPA) application*" (Aurecon, 2019:34).[225]

The above meant that the applicant and the EAP did not support the strategic context. However, based on the site sensitivities identified during the EIA process, a biodiversity offset, and an aquatic offset were proposed to deal with the sensitive biophysical environment (Aurecon, 2019).[226] The offset was included in the decision (environmental authorisation) of the decision-making authority (DEA&DP, 2019). Therefore, the applicant, EAP, and decision-making authority acknowledged and accepted the sensitive nature of the site. The environmental offset report, in recommending the implementation of offsets, acknowledged the sensitivity of the site (Aurecon, 2019).[227]

The specialist inputs into the EIA process in most cases (i.e., geohydrology, hydrology, agriculture, botanical visual, heritage, noise waste, and transport) did not refer to the District SDP/EMF, whilst the visual, freshwater, social, and biodiversity offset reports did refer to the District SDP/EMF (Aurecon, 2019).[228]

From a tiering perspective, vertical tiering of EA failed, because the CoCT 2013 EMF, of the District EMF/SDP was not considered during the EIA process. However, the strength of the horizontal tiering between the District SDP and EMF and the strength of the vertical tiering

[225] Page 34 of the final EIR (Aurecon, 2019).

[226] See section 9 of the final EIR (Aurecon, 2019).

[227] See Appendix D13 to the final EIR (Aurecon, 2019).

[228] See Appendix D to the final EIA (Aurecon, 2019).

between the District SDP/EMF and the CoCT 2010 SDF, resulted in the information contained in EMF being considered indirectly during the EIA process. Also, other tiers of information, such as the CoCT Bioregional Plan (CoCT, 2015), the Strategic Plan of the Western Cape Department of Human Settlements (WCG, 2015), and the Western Cape Spatial Development Framework (WCG, 2014), were considered, highlighting that diagonal tiering[229] did influence the EIA outcomes.

In summary, there was no clear indication that the specialist information contained in the District SDP/EMF was used during the EIA process, as only the CoCT 2012 and CoCT 2018 SDFs were referenced. However, the specialist information that was gathered as part of the Penhill EIA process, was consistent with the strategic context created by the District SDP/EMF. From a legal perspective, the lack of awareness of the EAP and the decision-making authority of the status of adopted CoCT 2013 EMF and the use of the information contained in it, constituted a fundamental error (and non-compliance with the legal requirement that adopted EMFs must be considered in decision-making).[230] From a tiering perspective, vertical tiering of EA failed, but horizontal tiering between the CoCT 2013 EMF and CoCT 2012 SDF and diagonal tiering between the CoCT 2012 SDF and the EIA, occurred.

Based on the above, this criterion was evaluated as partially conformed to.

Criterion C6.2: To what extent, with regard to the EIA process, is the strategic environmental context in the EMF/SEA supported by the other relevant stakeholder groupings across different sectors?

The EAP who conducted the EIA process was unaware of the existence of the adopted CoCT 2013 EMF (CoCT, 2013) and was not made aware of its existence by the decision-making authority (Jones, 2021). It was, therefore, unlikely that the other stakeholders were aware of the EMF (unless they participated in the process of drafting the integrated District SDP/EMF), or if they were aware of the EMF, it did not influence their participation during the EIA process.

Interviewee B1 expressed the view that during the EIA process, the applicant (the Western Cape Department of Human Settlements, representing the human settlement sector) strongly motivated to develop most of the site despite the biodiversity and agricultural value of the site (as

[229] Diagonal tiering refers to the instance where the strategic context of a different sector (in this case the planning sector), informs the project-level EIA process (i.e., the CoCT 2012 SDF, informing the EIA process) in the environmental sector.

[230] Regulation 2(1) of the 2010 EMF Regulations.

reflected in the EMF and EIA). From a sector perspective, the human settlement sector's view was clearly reflected in a study conducted on the Penhill site (Planning Partners, 2017), which proposed the development of most of the site. This study created a power dynamic that influenced the outcome of the EIA process in support of development, as the final proposal was to develop most of the site, subject to the implementation of offsets (DEA&DP, 2019).

The CoCT 2012 SDF and CoCT 2013 EMF recommended partial development of the site in a manner that considered the sensitive environmental attributes of the site. Therefore, although the applicant did not directly express any opinion on the strategic context (or indicated that they were aware of the EMF), they, by implication, did not support the strategic context provided by the CoCT 2013 EMF.

The environmental sector (through CapeNature and the CoCT) and agricultural sectors (through the farmers in the vicinity of the Penhill site) also emphasised environmental sensitivities of the site, although they did not refer to the EMF when commenting during the EIA process (Aurecon, 2019). CapeNature supported the proposal for an offset (Aurecon, 2019).[231] The human settlement sector strongly motivated for the development of the site (despite the above sensitivities). It was unlikely that the interested and affected parties were aware of the EMF, as they did not refer to it in their comments. It is also noted that the CoCT officials (who developed the EMF) did not correct the EAP's incorrect statement in the EIA that no adopted EMF applied to the EIA process.

In summary, and from a tiering perspective, no clear and direct statements of support or non-support were voiced by stakeholders for the strategic context provided by the CoCT 2012 SDF and the CoCT 2013 EMF (or that they were aware of the existence thereof). Although the CoCT 2012 SDF and the CoCT 2013 EMF proposed partial development of the Penhill site, the existing farmers on the site did not support the proposed extent of development and the applicant (and the housing sector) wanted to maximise development on the site. By implication, these stakeholder views were not fully aligned with the CoCT 2012 SDF and the CoCT 2013 EMF.

Based on the above, this criterion was evaluated as partially conformed to.

Criterion C7.1: To what extent is the EMF/SEA considered in, and consistent with the SDF?

[231] Appendix C6c to the final EIR (Aurecon, 2019)

The review of the CoCT 2012 SDF (CoCT, 2012a) and the CoCT 2013 EMF (CoCT, 2013), and as confirmed by Interviewee B3, there was a strong focus on the alignment of the CoCT 2013 EMF and the CoCT 2012 SDF. In terms of alignment, the following phrase in the District SDP/EMF is of relevance:

> *"The* [District] *EMF is developed as an input to the DSDP, whilst also having some overlapping components.*
>
> *This should not create confusion or a basis for misalignment as:*
>
> a. *the proposals of the District Plan (specifically the DSDP: district development guidelines, section 4) are also regarded as the "desired state of the environment" (fulfilling the requirement for such a component of an EMF in terms of NEMA);*
>
> b. *the area/activity suitability matrix reflected as EIMZs should be read as an informant to section 4 (the spatial development plan: district development guidelines / EMF desired state of the environment) rather than a stand-alone component of the district plan.* "(CoCT, 2012b:16).

Interviewee B3 was of the view that because the CoCT 2013 EMF and the CoCT 2012 SDF (through the 8 District SDPs/EMFs) were developed through an integrated process, with an integrated output, the strategic environmental context was integrally part of the CoCT 2012 SDF.[232] Whilst there were individual stakeholder views (expressed during public consultation on the District SDP/EMF) that the EMF was not adequate, such views were based on unique, site-specific instances and interests), Interviewee B3 highlighted that the CoCT 2013 EMF did contain all the relevant baseline information and key informants to motivate its findings (i.e., being evidence-based).

The District SDP/EMF included areas of non-alignment[233] – although alignment was achieved for most of the EMF area (>80%), there were instances of non-alignment (specific spaces). These areas of non-alignment were clearly indicated as such in the District SDP/EMF and more research/assessment was required (Interviewee B3). These areas have been identified as

[232] The consistency /alignment between the EMF and the SDF must be clarified. For most of the geographical areas in the covered by the EMF and DSDP, there is alignment on how the land should be used in future as reflected in accordance with the environmental impact management zones in the EMF and the land use categories in the SDF and District SDPs.

[233] Areas of non-alignment refers to areas where the allocation of land use managements zones in terms of the EMF and land use categories in terms of the SDF was not the same.

"*Areas of potential impact on selected natural environmental attributes*" and have specifically been mapped (CoCT, 2012b:98). The purpose thereof was captured as follows:

> "*In the context of the Environmental Impact Management (EIM) zones, areas of potential impact are identified where new development is proposed on areas which have natural environmental attributes that are sensitive or have ecological value. ……. The purpose of identifying these areas is to 'flag' the potential impacts that will need to be assessed in detail as part of an application for Environmental Authorisation, should this not already have occurred*" (CoCT, 2012b:98).

Based on the above, a significant effort was made to achieve alignment, even if there were still areas of non-alignment. These areas of non-alignment were clearly mapped and included in the District SPD/EMF, with the requirement that "[*t*]*he assessment of the potential impacts related to areas identified …. This should occur within a broader assessment of the sustainability of any particular development proposal. This would include consideration of social justice/equity and economic development/prosperity in addition to ecological integrity factors"* (CoCT, 2012b:99).[234]

It should be noted that no part of the Penhill development site was included as an area of non-alignment in the District SPD/EMF.

In summary, although the integrated EMF/SDF outcomes were only partial alignment (due to the existence of areas of non-alignment), this initiative still constituted a positive effort (by the CoCT) towards integrated planning. From a tiering perspective, this constituted a good example of effective horizontal and diagonal tiering.

Based on the above, this criterion was evaluated as conformed to.

Criterion C7.2: To what extent is the strategic environmental assessment and planning context informed by policy/legislation inputs (vertical tiers) where applicable?

There was a strong policy context for urban development. In 2012 South Africa's National Development Plan 2030 (NDP) was officially adopted, setting objectives and targets towards the elimination of the country's poverty, and reducing inequality by 2030 (National Planning Commission, 2012). Importantly, the NDP also promoted the constitutional right of access to

[234] See section 5.3 and "Zone Map F7: Areas of potential impact" on page 99 of the integrated Khayelitsha Mitchells Plain Greater Blue Downs District Spatial Development Plan and Environmental Management Framework (CoCT, 2012b).

suitable housing by promoting mixed housing approaches near public amenities and job opportunities strategies and more compact development to assist people in accessing public spaces and facilities. The NDP promoted infrastructural development as an imperative for economic growth and employment, creating an improved quality of life (i.e., improved standard of living and improved incomes). Furthermore, upgrading informal settlements on suitably located land was seen as a policy priority.

In 2014, the national Department of Human Settlements initiated a human settlement programme through the provision of catalytic human settlements projects (DHS, 2014). As part of this programme-level intervention, the Southern Corridor Integrated Human Settlement Programme was embarked on (as a joint initiative between the local and national spheres of government), comprising 18 Human Settlement Projects within the CoCT. The Penhill development was part of this programme (Aurecon, 2019).

Based on the review of the EIA documentation, the primary strategic planning/policy context on which the Penhill Development is based was the CoCT 2012 SDF (and did not refer to the integrated Greater Blue Downs District SDP/EMF).

The CoCT 2012 SDF provided a strong focus on planning for improved access to economic opportunities and their associated employment opportunities, managing urban growth (creating a balance between urban development and environmental protection), and the vision of *'building an inclusive, integrated and vibrant city'.* However, the CoCT followed an integrated SDF/EMF process, with the EMF being integrated within every District Spatial Development Plan. The CoCT 2013 EMF (CoCT, 2013)[235] was adopted by the Provincial Minister for Local Government, Environmental Affairs and Development Planning in 2013.[236] The EIA incorrectly stated that "*Currently there is no EMF adopted by the CoCT*……." (Aurecon, 2019: 35).

Interviewee B3 (from the CoCT) was of the view that the CoCT 2013 EMF (CoCT, 2013) was informed by the policy and legislation context and referred to the relevant sections of the document.

[235] The CoCT 2013 EMF being the collective EMF components of the 8 District SPDs/EMFs.

[236] Provincial Notice No 297 in Provincial Gazette No 7172 of 13 September 2013.

The integrated District SDP/EMF was drafted in terms of the land use planning legislation (for the SDP component)[237] and the environmental legislation (for the EMF component).[238] The environmental legislation did not explicitly contain provisions that required the development of different tiers of EA, whereas the land use planning legislation did. The LUPO, and now the LUPA and the SPLUMA[239] make provision for SDFs and a lower tier of District SDPs,[240] with the explicit requirement that subsequent, lower tiers must be consistent with the preceding tier. In the Penhill case study, tiering in EA specifically benefitted from its integration into the planning processes, by effectively creating a municipal-level CoCT 2013 EMF, which was the combination of 8 District EMFs.

Whilst the environmental legislation did not explicitly require tiered assessment/planning, it provided for the development of policies, plans, strategies, frameworks, and project-level regulatory instruments, albeit in a more disjointed way (meaning that the hierarchy of different levels of assessments/planning was not clearly spelled out, and neither was the relationship between them).

The District SDP/EMF contained various sections that related to the legislation, policy, and plans that informed the drafting thereof (Interviewee B3; COCT, 2012b). A hierarchy of spatial plans and policies was considered:[241]

- A section discussing the legal status of the District SDP/EMF, including the relationship between the two components of the District SDP/EMF.[242]
- A specific section in the District SDP/EMF that specifically dealt with the legislative and policy context that informed the process. More than 30 statutes and policies were listed.[243]

[237] The SDP constituted a lower tier of planning compared to the CoCT 2012 SDF and was drafted in terms of section 4(10) of the LUPO (South Africa, 1985) and will have the same status of SDFs, including in the future when drafted in terms of the SPLUMA and the LUPA, which, repealed the LUPA in 2013.

[238] The CoCT 2013 EMF was developed in compliance with the requirements of the NEMA (South Africa, 1998a) and the EMF Regulations (South Africa 2010) promulgated under the NEMA.

[239] The LUPO was repealed by the LUPA in 2013, and all SFDs are currently being developed in terms of the SPLUMA (as national legislation) and LUPA (as provincial legislation).

[240] Section 4 of the LUPO (South Africa, 1985).

[241] Page 12, Table 1.1 of the Khayelitsha Mitchells Plain Greater Blue Downs District Spatial Development Plan and Environmental Management Framework (CoCT, 2012b).

[242] Section 1,3 of the Khayelitsha Mitchells Plain Greater Blue Downs District Spatial Development Plan and Environmental Management Framework (CoCT, 2012b).

[243] Section 2 of the Khayelitsha Mitchells Plain Greater Blue Downs District Spatial Development Plan and Environmental Management Framework (CoCT, 2012b).

- All the policy informants that influenced the contents of the environmental impact management zones and land use development informants.[244]
- Development guidelines for decision-making at a sub-district level and included the various policies and plans that informed and should be considered in decision-making for all the sub-districts.[245]
- The Baseline Study Report (CoCT, 2012c) contained all the baseline information that informed the District SDP/EMF process and referenced more than 40 policies, plans, and scientific reports.

The above constituted both vertical and horizontal tiered information across different functional areas (including environmental, development planning, agriculture, heritage, transport, and human settlement) that informed the integrated District SDP/EMF process.

In summary and from a tiering perspective, the relevant District SDP/EMF was informed by a comprehensive set of legislation, policies, and plans. Although the tiering relationship between these informants was not clear in all instances, they provided both vertical and horizontal tiers of information across different functional areas.

Based on the above, this criterion was evaluated as conformed to.

Criterion C7.3: To what extent is the strategic environmental context provided in the EMF/SEA, informed by other sector strategic planning inputs (horizontal/diagonal tiering)?

The integration of the District EMF and SDP ensured that information across different functional areas was considered in the planning process. This relationship was confirmed by Interviewee B3, the Greater Blue Downs District SDP/EMF (CoCT, 2012b), and the Baseline Information Report that informed the latter (COCT, 2012c).

Also, see the discussion under criterion C7.2.

In summary, it was clear that the CoCT 2013 EMF and the Greater Blue Downs District SDP/EMF were informed by other sector strategic planning inputs. From a tiering perspective, horizontal and diagonal tiering were achieved.

[244] Section 5.2 contains various tables that sets out the policies and spatial data that informed the different EMZs that were identified in the EMF (CoCT, 2012b).

[245] Section 6.2 of the Khayelitsha Mitchells Plain Greater Blue Downs District Spatial Development Plan and Environmental Management Framework (CoCT, 2012b).

Based on the above, this criterion was evaluated as conformed to.

7.3.3 The Activity ToC Component

The criteria developed to evaluate the assumptions related to the Activity ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criteria C8.1, C8.2, C8.3, C8.4, C8.5, and C8.6, as discussed in the following section.

Criterion C8.1: To what extent are the key role-players in the EIA process made aware of the existence of the EMF/SEA and the role thereof?

The EAP conducting the Penhill EIA process was unaware of the adopted CoCT 2013 EMF's existence (CoCT, 2013) and was not made aware thereof by the decision-making authority (Jones, 2021). The information in EIA confirmed that the EAP was not aware of the approved CoCT 2013 EMF and that neither the decision-making authority nor the CoCT, as a key stakeholder that was extensively consulted, highlighted the existence of the EMF. Neither the CoCT 2013 EMF nor the District SDP/EMF was referred to in the final EIR (Aurecon, 2019).

Interviewee B1 indicated that she was aware of the EMF but did not reflect on why the EAP's incorrect information on the CoCT 2013 EMF was not corrected. The review of the final EIR (Aurecon 2019) also found no reference to the EMF, and the 'Need and Desirability' section incorrectly noted that "…*there were not approved EMF that was applicable to the EIA process*" (Aurecon, 2019:28). Although the CoCT 2013 EMF was not adopted immediately after the conclusion of the integrated SDF/EMF process in 2012, it was adopted in September 2013. Therefore, the EMF was in existence when the EIA process was conducted. In terms of the EIA Regulations and the NEMA, the EMF had to be considered during the EIA and subsequent decision-making processes.

Based on the interview and the review of the EIA documentation it was clear that neither the CoCT (especially the environmental component of the CoCT) nor the decision-making authority informed the EAP (or any other stakeholder) of the existence of the adopted CoCT 2013 EMF. Therefore, none of the specialists were made aware of the existence thereof. However, tiers of information that were available within the different functional (specialist) environmental fields, were considered by the various specialists. Of the 12 specialist studies, most of them did not make any reference to, or use the CoCT 2012 SDF, or the District SDP /EMF, except for the freshwater impact assessment, the visual assessment, the social impact assessment, and the biodiversity offset report. (see discussion on Criterion C8.2). It was concerning that the EMF

formed an integral part of the District SDPs/EMF, and as such, the EAP or any other stakeholder who considered the CoCT 2012 SDF, should have been aware of the EMF's existence.

The Western Cape Department of Human Settlements was the landowner and the applicant. The final EIR (Aurecon, 2019) did not provide any information to indicate that the landowner was aware of the EMF and the implications it held for future land use on the site. None of the interested and affected parties who participated in the EIA process[246] relied on the CoCT 2013 EMF (or indicated that they were aware of its existence) in submitting their comments.

In summary, the stakeholders that participated in the Penhill EIA process were not aware of the existence of CoCT EMF, or if they were aware thereof, it was not reflected in their inputs during the EIA process. These stakeholders included the applicant, the EAP, and the decision-making authority. From a regulatory perspective, not reflecting on the EMF constituted an oversight. From a tiering perspective, it constituted a failure of awareness of vertical tiering in EA, although the consideration of different tiers of information did take place within the different functional-specific areas within environmental management (i.e., horizontal and diagonal tiering).

Based on the above, this criterion was evaluated as not conformed to.

Criterion C8.2: To what extent is there clear evidence in EIA documentation that the strategic environmental context was considered at project-level assessments?

The Penhill EIA (Aurecon, 2019) contained no reference to the CoCT 2013 EMF (CoCT, 2013) apart from the 'Need and Desirability' section of the final EIR that incorrectly noted that there was no EMF applicable to the EIA process. However, the CoCT 2013 EMF was adopted in September 2013 and was in existence and legally had to be considered during the EIA process.

The CoCT 2012 SDF (CoCT, 2012a) was considered. By implication, the EMF information was also indirectly considered as the CoCT 2012 SDF and CoCT 2013 EMF were aligned through the alignment of the 8 integrated District SDPs/EMFs (CoCT, 2012b) and the CoCT 2012 SDF.

Most of the specialist studies did not refer to, or use the integrated District SDP/EMF, except for:

[246] Appendix C to the final EIR (Aurecon, 2019) contain all the detail on the public participation process.

- the freshwater impact assessment[247] acknowledged the existence of the CoCT 2012 SDF and CoCT 2013 EMF, and reflected on the sensitivity of the site based on these strategic documents and the implications thereof.

- The visual assessment[248] referenced the CoCT 2012 SDF information (but not the EMF or the integrated District SDP/EMF) and referred to the urban edge and that the site was located in an urban edge transitional zone. The study also reflected on the Provincial SDF (DEA&DP, 2014).

- The social impact assessment[249] referenced and discussed the applicability of several policies and legislation, including the CoCT 2012 SDF and the Provincial SDF (but not the EMF). The study also acknowledged the role of the urban edge and assumed that the site was suitable for development as it was located within the CoCT's urban edge.

- The biodiversity offset report[250] also acknowledged the strategic context of the site being located within the urban edge and the CoCT 2012 SDF (and the Greater Blue Downs District SDP), which indicated a large part of the site to be Core 1, earmarked for conservation purposes, with the rest for being proposed for urban development.

As discussed in Chapter 4, functional-specific environmental planning is conducted in the different functional areas of environmental management as required in terms of the SEMAs[251], including strategic plans/strategies such as biodiversity and waste management. These strategic informants were used by the specialists in the Penhill EIA process, including:

- The City of Cape Town's Biodiversity Network (BGIS, 2016).
- The City of Cape Town's policies on Biodiversity Offsets (CoCT, 2009).
- The City of Cape Town's Bioregional Plan (CoCT, 2015).
- The gazetted (published) National List of Threatened Ecosystems (DEA, 2011).
- The Western Cape Biodiversity Spatial Plan Handbook (CapeNature, 2017).
- The national draft policy on biodiversity offsets (DEA, 2017).
- The Western Cape draft policy on biodiversity offsets (DEA&DP, 2016).

[247] Appendix D5 to the final EIR (Aurecon, 2019).

[248] Appendix D7 to the final EIR (Aurecon, 2019).

[249] Appendix D8 to the final EIR (Aurecon, 2019).

[250] Appendix D13 to the final EIR (Aurecon, 2019).

[251] See Chapter 4 (Theory of Change) for a more detailed discussion on environmental planning in terms of the SEMAs.

The above also illustrates the fragmented nature of tiering in the environmental sector (as discussed in Chapter 4) and its influence on tiering in EA. This fragmentation was also corroborated by Interviewee D5.

In conclusion, vertical tiering in EA failed due to the lack of awareness of the CoCT 2013 EMF and the District SDP/EMF. However, the consideration of different tiers of information did take place within the different functional-specific areas within environmental management. Therefore, tiering in EA occurred indirectly in a fragmented manner, through diagonal tiering between functional-specific environmental planning informants and the EIA process.

Based on the above, this criterion was evaluated as partially conformed to.

Criterion C8.3: To what extent did the EMF/SEA influence the scope of alternatives that were considered in the EIA process?

The EAP who conducted the EIA process was unaware of the existence of the adopted CoCT 2013 EMF, and as such, the EMF did not directly influence the identification of alternatives by the EAP during the EIA process. Interviewee B1 was aware of the CoCT 2013 EMF and believed that the sensitivity of the site, as reflected in the EMF, did influence the development proposal. However, Interviewee B1 also indicated that the need for development was strongly motivated by the applicant, resulting in some impacts not being fully mitigated. This culminated in the preferred alternative being to develop the majority of the site, subject to the implementation of offsets.

In contrast to Interviewee B1's verbal confirmation of being aware of the CoCT 2013 EMF, neither the correspondence from the decision-maker during the EIA process (Aurecon, 2019) nor the environmental authorisation issued by the decision-making authority (DEA&DP, 2019) referenced the EMF. Therefore, it was unclear how the CoCT 2013 EMF influenced the identification of alternatives. However, in referencing the CoCT 2012 SDF (i.e., diagonal tiering), the strategic environmental context contained in the EMF was indirectly considered in the EIA process on the strength of horizontal tiering between the SDF and EMF. The following statement contained in the final EIR was of significance in illustrating horizontal tiering between the EMF and SDF:

"The *proposed project forms part of a national catalytic programme, the activity has been explicitly planned for in the CoCT IDP and SDF. However, the site is zoned as Core 1 spatial planning*

category in the SDF. ….. It is most likely zoned as this category due to the remaining fragments of Critically Endangered Cape Flats Sand Fynbos" (Aurecon, 2019:34).[252]

The above statement from the final EIR also illustrated the strong drive for the development of the site, to the extent that the alternatives that were identified required offsetting to be the only viable solution.

During the EIA process (the scoping phase),[253] the EAP provided two alternative on-site development layouts to the specialists for assessment. However, according to the botanical specialist (Helme, 2017) and the freshwater ecologist (BlueScience, 2017), neither alternative presented a meaningful advantage or disadvantage over the other from a botanical and freshwater ecology perspective. The biodiversity offset specialist concluded that "[*e*]*xternal threats to the site and its Critically Endangered vegetation are likely to grow given the particular development context and associated pressures. Given the site's already largely degraded state, additional efforts to avoid and minimise impacts of the proposed project and restore fragmented areas of vegetation on site are not warranted and are unlikely to be effective in the long term. For this reason, it is concluded that it would be better to focus mitigation efforts to rehabilitate/ restore and manage areas in a relatively better condition and protect them in perpetuity*" (De Villiers & von Hase, 2019:11). Therefore, the site sensitivities identified during the EIA process did influence the EAP's identification of layout alternatives. However, the full extent of sensitivity of the site was not accommodated in the alternatives, resulting in unavoidable impacts and the subsequent identification of offsets for some of the biodiversity and aquatic environments that were to be destroyed. Based on the above, biodiversity and wetland offsets were recommended in the final EIR (Aurecon, 2019)[254] and included in the environmental authorisation issued by the decision-maker (DEA&DP, 2019). The importance attached to the human settlement needs also affected the identification of alternatives. In motivating for not pursuing the "no-go" (or no-development) alternative option, the final EIR stated that "…. *the benefits of the project would be foregone and the opportunity to provide low cost housing contributing to municipal, provincial and national targets would not be achieved in this instance. Similarly, any direct and indirect socio-economic benefits for the future occupants / wider area would not be realised*" (Aurecon, 2019:187).[255]

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[252] Section of the Final EIR discussed Need and Desirability (Aurecon, 2019).

[253] Although section 4.2 (pages 41-43) of the Final EIR (Aurecon, 2019) states that the two alternatives were identified during the pre-application stage (i.e., prior to the start of the formal EIA process).

[254] Sections 7.9 and 7.10 of the final EIR (Aurecon, 2019).

[255] Section 9.3 of the final EIR (Aurecon, 2019).

In summary, from a tiering perspective, the strategic environmental context influenced the incorporation of environmental components in the two layout alternatives that were assessed, but the full extent of sensitivity was not addressed, hence the recommendation for offsets. The strong drive for development infused power dynamics into the EIA process that influenced the formulation of alternatives. Whilst vertical tiering in EA failed (although tiering in the functional/specialist areas worked), the strength of horizontal tiering between the CoCT 2013 EMF and the CoCT 2012 SDF indirectly resulted in the strategic environmental context being considered in the identification of alternatives via diagonal tiering between the CoCT 2012 SDF and the EIA.

This criterion was evaluated as partially conformed to.

Criterion C8.4: To what extent did the EMF/SEA influence the application of the impact mitigation hierarchy in the EIA process?

The CoCT 2013 EMF (CoCT, 2013) did not directly influence the application of the mitigation hierarchy, as the EAP, in conducting the EIA process, was unaware of the existence of the adopted CoCT 2013 EMF. Interviewee B1 believed the sensitivity of the site did influence the development proposal. However, the need for development was very strongly pushed and resulted in some impacts not being mitigated, hence the need for an offset was identified. Although Interviewee B1 verbally confirmed that she was aware of CoCT 2013 EMF, this was not reflected in any of the correspondence by the decision-maker, including the final decision (DEA&DP, 2019). Therefore, it was unclear how the EMF influenced the application of the mitigation hierarchy.

The final EIR did not refer to the CoCT 2013 EMF but did reference the CoCT 2012 SDF. Therefore, based on the strength of horizontal and diagonal tiering, the strategic environmental context and site sensitivities were indirectly included through diagonal tiering between the SDF and EIA.[256] The application of the impact mitigation hierarchy was closely linked to the alternatives identified and the extent to which these alternatives addressed the identified impacts. As discussed in criterion C8.3 above, the full extent of sensitivity of the site was not accommodated in the identified alternatives and resulted in unavoidable impacts that could not be mitigated, hence triggering the last step in the impact mitigation hierarchy, that is, the identification of offsets. Offsets for both biodiversity and aquatic environment were included in

[256] Page 34 of the discussion of 'need and desirability' in the final EIR (Aurecon, 2019)

the final recommendations in the final l EIR (Aurecon, 2019)[257] and included in the decision issued by the decision-maker (DEA&DP, 2019).

In summary, from a tiering perspective, the strategic environmental context indirectly influenced the application of the impact mitigation hierarchy, not through the CoCT 2013 EMF, but through the CoCT 2012 SDF. Therefore, the strength of horizontal tiering between the EMF and the CoCT 2012 SDF, and diagonal tiering between the CoCT 2012 SDF and the EIA, rather than vertical tiering in EA (i.e., between the EMF and the EIA), resulted in the strategic environmental context being considered indirectly in the application of the impact mitigation hierarchy. Also, the strong drive for maximising the site's development influenced the alternatives identified and hence influenced the application of the mitigation hierarchy. The drive for development (as reflected by the interviewees) forced a trade-off between positive socio-economic benefits (housing) and negative biophysical impacts, resulting in offsetting being regarded as an acceptable outcome, being the last step in the impact mitigation hierarchy.

This criterion was evaluated as partially conformed to.

Criterion C8.5: To what extent are there any contested views /interpretations on the applicability of the strategic context to the EIA/project?

Interviewee B1 expressed a clear opinion that contested views were expressed during the EIA process, on the extent and type of development that should occur on the site. The developer was adamant about the need for development. The neighbours and the agricultural community were not in favour of large-scale development of the site and the environmental sector promoted development consistent with the sensitivity of the site. However, these views did not rely on the EMF. There was no clear statement of support for (or against) the EMF.

The final IER reflected the contested views on the application of the strategic environmental context during the EIA process: "*The proposed project forms part of a national catalytic programme, the activity has been explicitly planned for in the CoCT IDP and SDF. However, the site is zoned as Core 1 spatial planning category in the SDF. Core 1 includes 'statutory conservation areas (biodiversity areas that are formally protected and managed); critical biodiversity areas; conservation priority zones; critical, irreplaceable and restorable biodiversity sites; public conservation areas and private conservation areas' ……. Since CoCT specifically*

[257] The biodiversity offset is dealt with in section 7.9 and the wetland offset in section 7.1o of the final EIR (Aurecon, 2019)

includes for this development in the IDP [Integrated Development Plan], *and the SDF is in conflict with this, a deviation from the SDF is part of the Land Use Planning Approval (LUPA) application*". (Aurecon, 2019:34). Therefore, the applicant (and their planning consultancy team) and EAP were aware of the conflict between the strategic context and the development proposal.

It should be noted that the Penhill site was <u>not</u> included in the relevant section of the integrated District SDP/EMF, which identifies areas of non-alignment. These areas have been identified as "*Areas of potential impact on selected natural environmental attributes*" and have specifically been mapped. The purpose of identifying areas of non-alignment was captured in the SDF "…..*to 'flag' the potential impacts that will need to be assessed in detail as part of an application for Environmental Authorisation, should this not already have occurred*" (CoCT, 2012c:98). It follows that during the development of the integrated District SDP/EMF, there were no differences of opinion on the future use of the Penhill site, which should be resolved during the EIA process. However, this was clearly not the case as different views emerged during the EIA process. Interviewee B3 pointed out that the public consultation process conducted at an SDF/EMF level cannot be expected to include all members of the public and resolve all conflicts.

In summary, horizontal tiering between the CoCT 2012 SDF and CoCT 2013 EMF created a strategic context for the Penhill site. However, the final developmental proposal emerging from the EIA process was inconsistent with this strategic context. The strategic context did influence the EIA process by applying the impact mitigation hierarchy and proposed offsets, based on the strength of horizontal and diagonal tiering (between the planning and environmental spheres), not vertical tiering in EA.

This criterion was evaluated as partially conformed to.

<u>Criterion C8.6: To what extent is there clear evidence in EIA decisions (environmental authorisations and appeal decisions) that the strategic environmental context was considered?</u>

As already highlighted, the environmental authorisation (decision) issued by the decision-making authority (DEA&DP, 2019) did not make any reference to the CoCT 2013 EMF (CoCT, 2013), the CoCT 2012 SDF (CoCT, 2012a), or the integrated DSDP/EMF applicable to the Penhill site.

In discussing 'need and desirability', the decision only stated that "[*t*]*he provision of housing and services to communities is considered a priority, and an ongoing issue of national importance. The proposed development will assist in alleviating the housing shortage in the area and other*

areas in the City by providing new housing opportunities. The proposed development is located inside the urban edge of the City of Cape Town…." (DEA&DP, 2019:19).[258]

Apart from the above statement, the strategic environmental context of the site was not reflected in the reasons or the reasoning for the environmental authorisation issued by the decision-maker. Therefore, although the strategic environmental context may well have influenced the EIA decision-making process and the decision-making authority was aware of this strategic context, this was not explicitly conveyed and translated into the environmental authorisation. From a just administration perspective, it was important to not only provide the reasons but also the reasoning for the decision (i.e., reflecting informed decision-making[259] consistent with the requirement for fair and reasonable administrative action) (South Africa, 2000b).[260] Therefore, stakeholders were unaware of how (and if) the decision-maker regarded the strategic context (and tiered EAs) as a relevant consideration in the decision-making process.

From a regulatory perspective, the decision-maker was in non-compliance with the EMF Regulations (South Africa, 2010) and the NEMA (South Africa, 1998a) which, required that an adopted EMF must be formally considered in decision-making.[261] This finding of non-compliance was based on the understanding that decisions should reflect the relevant factors[262] considered in decision-making. It follows that if the decision did not reflect on 'need and desirability', it was not considered a relevant decision-making factor. From a tiering perspective, the decision-making authority did not indicate that tiering in EA was an important consideration in decision-making.

In summary, the importance given to the housing need in the decision, and the inclusion of environmental offsets, meant that the decision-makers were aware of the strategic context, and it may well have influenced decision-making. However, this was not adequately reflected in the reasons and reasoning contained in the environmental authorisation, which was issued by the decision-maker.

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[258] See the "Annexure 3: Reasons for the Decision" section of the environmental authorisation issued by the decision maker (DEA&DP, 2019).

[259] Lezmin 2588 CC v The Provincial Minister for Local Government, Environmental Affairs & Development Planning, Western Cape & the City of Cape Town (21935/2009), Judgement delivered on 18 Oct 2010 (Judge Blignault, 2010).

[260] The Promotion of Administrative Justice Act, 2000 contains requirements that promote fair and reasonable administrative action (South Africa, 2000b).

[261] Section 24O(1)(v) of the NEMA, regulation 16(3)(c) of the EIA Regulations, Appendix 1, 2 and 3 to the EIA Regulations (GNR 326 of 7 April 2017), and regulation 5 of the EMF Regulations (GN R547 of 18 June 2010).

[262] See regulation 4(1)(b) of the EIA Regulations (South Africa, 2014a), read with section 24) of the NEMA (South Africa, 1998a), and read with section 5 of the PAJA (South Africa, 2000b).

This criterion was evaluated as not conformed to.

7.3.4 The Output ToC Component

The criteria developed to evaluate the assumptions related to the Output ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criterion C9.1, as discussed in the following section.

Criteria C9.1: To what extent does the EIA decision align and give effect to the strategic environmental planning context? (i.e., the EMF/SEA)

The lack of reference in the environmental authorisation to the CoCT 2013 EMF meant that the alignment between the EMF and the EIA through vertical tiering was not considered during the decision-making process. Interviewee B1 believed that the EIA decision was partially aligned with the strategic context and that although the full extent of sensitivity of the site was not catered for in the authorised development layout, the inclusion of an offset requirement was an acceptable compromise. Interviewee B1 emphasised that the presence of power dynamics did influence the outcome of the EIA process by increasing the development footprint, but that the sensitivity of the site (consistent with the strategic context) required offsets.

The review of the environmental authorisation indicated that consistent with Interviewee B1's view, the full extent of sensitivity of the site as reflected in the EMF and the District SDP/EMF, was not catered for in the development layout that was authorised, but that biodiversity and wetland offsets were included to address the residual impacts. However, this decision was not based on the District SDP/EMF (CoCT, 2012b), but based on the information presented in the final EIR (Aurecon, 2019).[263] In addition, the final EIR referenced the CoCT 2012 SDF (CoCT, 2012a) and as such, the alignment of both the final EIR and the EIA decision to the strategic environmental context was based on the strength of the horizontal and diagonal tiering.

In summary, from a tiering perspective, the decision was void of any reference to the alignment between the decision and the strategic context provided by the CoCT EMF. Partial alignment, to the extent that the full sensitivity of the site as contained in EMF was not catered for in the

[263] Need and Desirability are addressed in section 3 of the final EIR, the freshwater specialist study (Appendix D5 to the final EIR), and the offset specialist report (Appendix D15 to the final EIR) (Aurecon, 2019).

decision, was indirectly achieved based on the strength of horizontal tiering between CoCT 2013 EMF and the CoCT 2012 SDF, and diagonal tiering between the CoCT 2012 SDF and the EIA.

This criterion was evaluated as partially conformed to.

7.3.5 The Immediate Outcome ToC Component

The criteria developed to evaluate the assumptions related to the Immediate Outcome ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criteria C10.1, C11.1, and C11.2, as discussed in the following section.

Criteria C10.1: To what extent does the strategic environmental context (i.e., EMF/SEA) provide clear guidance on what constitutes appropriate and inappropriate types and scales of development and land use to promote sustainable development outcomes at project-level assessment?

The EAP who conducted the EIA process was unaware of the existence of the adopted CoCT 2013 EMF (CoCT, 2013) and was not made aware of the EMF by the decision-making authority (Jones, 2021). The EAP declined an interview. However, the information in the final EIR (Aurecon, 2019) reflected the views of the EAP.

Interviewee B1 maintained that the strategic context provided by the CoCT 2013 EMF adequately reflected the sensitivities of the site, but did not adequately convey what development could happen on the site. However, this reasoning was not conveyed in the correspondence between the decision-making authority (through Interviewee B1) and the EAP.

The CoCT was the lead authority for the drafting of the CoCT 2012 SDF (CoCT, 2012a), the District SDP/EMF (CoCT, 2012b), and the CoCT 2013 EMF (CoCT, 2013). Interviewee B3 did not have specific knowledge of the Penhill site but highlighted that, in general, the CoCT 2013 EMF and the 8 integrated District SDPs/EMFs included information on sensitivities that must be considered and types of development that would be acceptable in the various environmental

management zones. The review of the EMF and the District SDP/EMF (CoCT, 2012b) confirmed that it did include such guidance.[264]

Interviewee B3 also highlighted that areas of non-alignment between the Environmental Management Zone (EMZs) of the EMF and land use categories of the SDF were identified and included in the EMF/SDF. These areas of non-alignment required further assessments to resolve what constituted acceptable, sustainable development outcomes for these sites. The District SDP/EMF (CoCT, 2012b) did include such guidance.[265]

Interviewee B3 highlighted that, in general, the CoCT 2013 EMF and the 8 District SDPs/EMFs provided guidance but did not remove the need for further site-specific EIA information. It clearly identified issues to be considered during EIAs for every EMZ)[266] and the type of development considered to be appropriate within the different EMZs. However, at this strategic level, the scale of information was very coarse and not detailed enough to influence the scope of a project-level assessment in all instances. The user had to apply his/her mind to the applicability of strategic-level information at a site level.

Reviewing the District SDP/EMF confirmed that it informed the type of development, but was not detailed enough to inform the scale and significance of impacts, confirming that part of the site could be considered for urban development. It did not take away the need for an EIA process and the requirement that the EAP and specialists apply their minds, but informed by the issues to be addressed in the EIA process.

The Penhill site was not included in the relevant section of the integrated District SDP/EMF, which dealt with areas where alignment could not be reached during the District SDP/EMF process.[267] For these sites, the EIA process was required to provide additional information to resolve the conflict.

In summary, the strategic context provided by the District SDP/EMF (CoCT, 2012b) did provide guidance to the EIA process. Based on the above, this criterion was evaluated as conformed to.

[264] Section 6 of the District SDP/EMF contained guidelines for land use decisions (CoCT, 2012b).

[265] Section 5.3 of the District SDP/EMF contained guidance on areas of conflict (CoCT, 2012b).

[266] All geographical spaces in the EMF were allocated a specific EMZ in accordance with the sensitivity category of the EMZ, as well as appropriate development parameters for the EMZ (CoCT, 2013).

[267] Section 5.3 3 of the DSDP/EMF contained guidance on areas of conflict (CoCT, 2012b).

Criteria C11.1: To what extent do key role-players, in evaluating the sustainability of project-level EIAs and decisions, attach value to the alignment thereof with the strategic environmental context?

As already highlighted, the final EIR (Aurecon, 2019) and the EIA decision (DEA&DP, 2019) did not refer to the CoCT 2013 EMF or the District SDP/EMF (CoCT, 2012b) during the EIA process. However, the strategic environmental context was indirectly considered through its integration /alignment into the CoCT 2012 SDF – the CoCT 2012 SDF was considered during the EIA process.

Interviewee B1 expressed that strategic guidance towards sustainability outcomes was important in EIA decision-making. The interviewee believed (even though not conveyed as such during the EIA process) that the strategic context of the EMF did provide guidance on what constituted sustainable development, albeit at a strategic level.[268]

During the EIA process, the various specialists (through the consideration of tiered information within their functional area of expertise) and the consideration of the CoCT 2012 SDF, resulted in the strategic environmental context being considered indirectly. The strategic context did influence the view of what constituted sustainability, although the full extent of sensitivity of the site was not catered for as per the EMF.[269] It did, however, result in the need for offsetting being identified as an outcome of the EIA process.

From a tiering perspective, the direct value of vertical tiering in EA in providing a context for sustainable development was lost, but through. Still, through the strength of horizontal tiering (between the District SDP/EMF, and diagonal tiering (between the CoCT 2012 SDF and the EIA), the strategic environmental context still indirectly influenced the EIA process in terms of what constituted a sustainability outcome.

Due to the indirect link (diagonal tiering) to the strategic environmental context, this criterion was evaluated as partially conformed to.

Criteria C11.2: The extent to which key role-players from other sectors refer to the EMF/SEA in addressing their sector interests?

[268] Section 9.2 of the final EIR in which the EAP provide reasoning on sustainability outcomes (Aurecon, 2019).

[269] The alternatives identified in the EIA process (section 4 of the final EIR) did not fully cater for the site sensitivities (the spatial extent thereof) when compared to that of CoCT 2013 EMF or the CoCT 2012 SDF.

The spatial development planning and functional-specific environmental planning processes were integrated (Interviewee B3; CoCT, 2012a, b and c; CoCT, 2013). Also, various specialists across different functional areas participated in the integrated District SDP/EMF process.

Considering the integrated nature of the SDF/EMF process, the CoCT 2013 EMF did influence the outcome of the CoCT 2012 SDF. There is a legal requirement that an SDF must consider all other sector inputs.[270] Accordingly, the EMF was integrated into the SDF, resulting in the EMF indirectly influencing the input from other sectors. Also, the inclusion of a section in the integrated District SDP/EMF on areas of non-alignment[271] implied that the EMF indirectly influenced other sectors (including transport, human settlements, and agriculture) through their involvement in the SDF process.

The applicant, the Western Cape Department of Human Settlements, represented the human settlement sector and was strongly motivated to develop most of the site despite the site's biodiversity and agricultural value. This extent of proposed development was inconsistent with the SDF, as reflected in the final EIR (Aurecon, 2019). A separate human settlement study (outside the EIA process), which was conducted for the Penhill site on behalf of the applicant, considered the CoCT 2012 SDF and the District SDP/EMF in identifying the alternatives. These alternatives informed the EIA process (Planning Partners, 2017) and strongly focused on developing most of the site. However, the acceptance of offsets as an outcome of the EIA process indicates that the applicant was, to a certain extent, influenced by the strategic environmental context.

Based on the above, this criterion was evaluated as partially conformed to.

7.3.6 The Intermediate Outcome ToC Component

The criteria developed to evaluate the assumptions related to the Intermediate Outcome ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criteria C12.1, C13.1, and C13.2, as discussed in the following section.

[270] Section 12 of the SPLUMA (South Africa, 2013) states that "A municipal spatial development framework must assist in integrating, coordinating, aligning and expressing development policies and plans emanating from the various sectors of the spheres of government as they apply within the municipal area".

[271] Section 5.3 of the integrated Khayelitsha Mitchells Plain Greater Blue Downs DSDP/EMF (CoCT, 2012b).

Criterion C12.1: To what extent are strategic-level environmental assessments considered in other sector strategic planning frameworks in a manner that achieves alignment?

As already mentioned in Criterion C11.2 and elsewhere, the CoCT 2012 SDF was influenced by the CoCT 2013 EMF (Interviewee B3, CoCT, 2012a, 2012b; 2012c; CoC 2013), and that through the SDF, considering the legal requirement that an SDF must represent all sector inputs,[272] the integration of the SDF and EMF also implied that the EMF influenced other sector planning within the CoCT.

Interviewee B3 also confirmed that all the other 'line departments' in the CoCT were consulted and involved in the EMF/SDF process (through the District SDP/EMF processes), including transport, heritage, land use planning, conservation, electricity, waste, and water management. Alignment between all these sectoral interests and planning needs was achieved through the integrated EMF/SDF process. A high level of alignment was achieved (i.e., more than 90% of geographical areas). Areas of non-alignment were indicated in the District SDP/EMF in instances where agreement could not be reached.[273]

Considering the high level of alignment that was achieved in the integration of the SDF and EMF, this criterion was evaluated as conformed to.

Criterion C13.1: To what extent do the environmental decision-making authorities consider tiering (tiered environmental assessments and/or environmental planning) as valuable in achieving sustainable development outcomes?

Interviewees B1 and B3 did not explicitly express an opinion on tiering but regarded the CoCT 2013 EMF as an important informant to EIAs, and to guide achieving sustainable development outcomes. The interviewees considered sustainability to be context-specific and that the EMF's main purpose was to focus attention on the important issues to be addressed during EIA processes. Similar views were expressed by interviewees E1 and D5, related to EA practices in general. These views were, however, not replicated (in practice) in the case study as the EMF was not referenced in reflecting on sustainability. Interviewees B1 and B3 considered tiering in EA to be important in general (not specifically related to the case study) in providing a strategic context to inform sustainability for EIAs. Interviewee E1 believed the value of EMFs was

[272] Section 12 of the SPLUMA (South Africa, 2013) states that "A municipal spatial development framework must assist in integrating, coordinating, aligning and expressing development policies and plans emanating from the various sectors of the spheres of government as they apply within the municipal area".

[273] Section 5.3 of the integrated Khayelitsha Mitchells Plain Greater Blue Downs District SDP/EMF (CoCT, 2012b).

diminished as the quality thereof was not always good. Both interviewees D5 and E1 regarded EMFs as an important instrument in the future to set a sustainability context for EIAs.

In summary, tiering was regarded as being of value in achieving sustainable development outcomes, but in practice, this was not reflected in the case study. The case study did not reflect on the importance of tiering in achieving sustainability, as neither the final EIR (Aurecon, 2019) nor the EIA decision (DEA&DP, 2019) reflected on the CoCT 2013 EMF as the strategic tier of information, in discussing sustainability.

This criterion was evaluated as partially conformed to.

Criterion C13.2: To what extent have resources been allocated, and institutional arrangements have been developed within provincial authorities support for tiering (through strategic level assessments and planning?

Interviewee B3 highlighted that the CoCT was committed to following integrated EMF/SDF processes and that the required institutional resources have been made available to achieve this goal. This commitment was more noteworthy when considering that the EMF was a voluntary instrument (South Africa, 2010).

Interviewee E1 confirmed that the Western Cape DEA&DP supported tiering in EA (especially the creation of strategic assessment tiers), but that the value-add thereof has not yet been realised in practice. In general practice, SDFs and EMFs did not alleviate the information needs at the project level, and the guidance was vague, leading to many instances where EIA information was used to deviate from these strategic frameworks. Interviewee E1 also emphasised that EMFs and SDFs should be engaged with (and seen to attach a value to the SDF/EMF) during the EIA process and not only during the final decision-making phase. The interviewee was also of the opinion that through spatial targeting, strategic trade-offs can be made without waiting for project-level applications and detailed information. The interviewee attached a high value to EMFs being able to improve regulatory efficiency and believed that more must be done in this regard.

Interviewee D5 noted that procedures were put in place in the Western Cape Province to ensure that EMFs were being considered during decision-making (e.g., the EIA application form noted that EMFs must be considered, consistent with the legal requirements to do so). However, in practice, there was still an over-reliance on SDFs rather than EMFs as a source of strategic-level information. The interviewee thought this could partly be due to the strong development planning focus of the unit (Chief Directorate) responsible for regulatory environmental decision-making

(i.e., power dynamics favouring a developmental approach). In addition, the over-reliance on SDFs was also based on the perception that it was a more reliable tool that remains current (i.e., up to date). In addition, the land use planning legislation contained strong provisions in support of SDFs (i.e., section 22(1) of the SPLUMA states that " *…. a municipal planning tribunal or any other authority required or mandated to make a land development decision in terms of this Act or any other law relating to land development may not make a decision which is inconsistent with a municipal spatial development framework*"). The Interviewee also noted that the Western Cape Department responsible for environmental management conducted a review (follow-up) study on the implementation of one of the EMFs and found that EMFs were not considered in EIA decision-making[274]. The review study also found that, in theory, EMFs were considered important in providing a strategic context for sustainability, but it was not implemented in practice.

Interviewees D5 and E1 confirmed that due to austerity measures, no financial resources were allocated towards the development of EMFs. They also confirmed that inadequate human resources were available to perform this function.

In summary, the allocation of institutional resources was made available in the CoCT to develop an EMF. However, at a provincial level, there was a significant lack of resources allocated towards this function. This also highlighted that the voluntary nature of EMFs means that their implementation was vulnerable to political will to allocate institutional resources towards EMFs.

This criterion was evaluated as partially conformed to.

7.3.7 The Impact ToC Component

The criteria developed to evaluate the assumptions related to the Impact ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criteria C14.1, C14.2, C14.3, C15.1, C15.2, C15.3, and C15.4, as discussed in the following section.

Criteria C14.1: To what extent did EMFs/SEAs affect the efficiency of EIA (i.e., reducing time and cost implications of the EIA process)?

[274] This follow-up study was not available on the Department's website.

The EAP was unaware of the adopted CoCT 2013 EMF (CoCT, 2013) and declined a formal interview. Interviewee B1 believed the strategic context of the EMF did provide guidance on the sensitivity of environmental attributes, but that this information did not influence the (time and cost) efficiency of the EIA process. The review of the final EIR confirmed that the EAP primarily relied on EIA-specific information, and no indications could be found that the strategic context affected the efficiency of the EIA process.

The review of the CoCT 2013 EMF confirmed that it did not result in any changes in the regulatory requirements of the EIA process, but the information contained in the EMF could be used to inform the information requirements of EIA processes, potentially improving the efficiency of EIA processes (i.e., the time and cost of information gathering). To unlock this potential, users were required to apply their minds to the application of the EMF to EIA processes. However, even if the CoCT 2013 EMF had the potential to improve the efficiency of the Penhill EIA process, the EMF was not considered during the EIA process, and any potential efficiency gains the EMF may have had, were lost.

Interviewee B3 believed that, in general, the integrated District SDPs/EMFs provided guidance to EIA processes but did not remove the need for an EIA process and the consideration of site-specific issues. As such, Interviewee B3 was of the view that the EMF did not significantly reduce time and cost implications, but it did provide more certainty regarding the type of development that was appropriate, and environmental sensitivities that applied to a specific area (i.e., providing certainty to developers). Interviewee B3 did, however, maintain that if used correctly, the information contained in the EMF could have an efficiency gain by reducing the information requirements and, by implication reduce the time and cost implication of having to gather such information during the EIA process. Interviewee D5 agreed with this view related to EMFs in general. Interviewee E1 was of the view that EMFs should include, or be used to develop regulatory instruments to reduce the regulatory burden associated with the current EIA system.

In summary and from a tiering perspective, there were no clear indications that the CoCT 2013 EMF reduced the time or cost implications of the EIA process related to the Penhill Case Study. The evaluation of this criterion highlighted the discrepancy between the theoretical view that EMFs could influence the efficiency of EIA processes and the lack of implementation thereof in practice. EMFs could only show efficiency gains if applied in practice.

Based on the above, this criterion was evaluated as not conformed to.

Criteria C14.2: To what extent do EMFs/SEAs affect the effectiveness of EIAs (i.e., of value in assisting EIAs to deliver sustainable development outcomes)?

The EAP was unaware of the CoCT 2013 EMF and declined an interview (Jones, 2021). Interviewee B1 believed that the strategic context of the CoCT 2013 EMF did provide guidance on what constituted sustainable development. Interviewee B3 believed that, in general, the District SDPs/EMFs provided guidance to EIA processes but did not remove the need for an EIA process. However, the interviewee believed that the EMF provided more certainty regarding the appropriate type of development (i.e., providing certainty to developers) and guidance on the issues to be addressed during EIA processes.

The EMF/SDF did not contain sustainability objectives but provided information on the sensitivity of environmental attributes. Therefore, the information in the EMF required interpretation to determine its value regarding sustainability within the context of the Penhill site.

In the Penhill EIA process, the existence of the CoCT 2013 EMF was not acknowledged (Aurecon 2019; Jones, 2021), but the strategic environmental context indirectly influenced the EIA outcome through diagonal tiering between the CoCT 2012 SDF and the EIA. The consideration of the socio-economic (need and desirability) benefits of housing compared to the biophysical sensitivities of the site strongly influenced the alternatives identified, and the identification of offsets bore testimony to the substantive influence of the strategic context on the outcome of the EIA process.[275]

No reasoning on sustainability was provided in the environmental authorisation that was issued (DEA&DP, 2019), other than highlighting the socio-economic need for housing as a strategic/policy consideration. The EMF was not referenced in the decision.

In summary, and from a tiering perspective, the contribution that vertical tiering in EA could have made to sustainability was lost due to the EMF not being acknowledged. However, the strategic environmental context still indirectly influenced substantive effectiveness through the strength of diagonal tiering between the CoCT 2012 SDF and the EIA. Overall, the outcome of the EIA process placed a strong focus on optimising the socio-economic benefits in the development of the Penhill site.

Based on the above, this criterion was evaluated as partially conformed to.

[275] See the need and desirability discussion in section 3.7 of the final EIR (Aurecon, 2019).

Criterion C14.3: To what extent is the strategic context (i.e., EMFs/SEAs) adequate in ensuring the achievement of the environmental right in a balanced manner?

Interviewees B1 and B3 expressed a similar view that CoCT 2013 EMF *per se* did not constitute sustainable development, but that it focused attention on the relevant issue to be considered during the EIA processes – put differently, sustainability is a context-specific outcome of EIA processes, and the EMF highlighted issues of strategic importance that must be considered and investigated during the EIA process. This included the sensitivity of the environmental attributes as incorporated in the various environmental management zones of the EMF.

In terms of tiering in general, Interviewee D5 noted that EMFs and SEAs were considered the only EA instruments that could be used to proactively plan for sustainability and create a strategic context for EIA to deliver sustainability outcomes on the ground. However, they maintained that current EIA practices did not adequately utilize strategic informants. Interviewees D5 and E1 also highlighted the importance of EMFs as a proactive planning instrument that considered both existing and future development impacts and resource use.

The CoCT 2013 EMF did not identify specific sustainability objectives or a discussion of environmental rights *per se*. Consistent with the views expressed by the interviewees, the information in the EMF required interpretation to determine its context-specific application toward achieving environmental rights and sustainability during EIA processes.

This criterion was evaluated as partially conformed to.

Criteria C15.1: To what extent does the EIA deal with the environmental right in a balanced manner?

The EAP declined an interview and only stated in an email that she was not aware of the CoCT 2013 EMF (Jones, 2021). Interviewee B1 believed that the EIA did consider the environmental right in a balanced manner and although the development proposal was not fully aligned with the EMF, the recommendation for an offset serves to highlight this balanced consideration of the environmental right in the Constitution to "…..*secure ecologically sustainable development and*

*use of natural resources while promoting justifiable economic and social developmen*t" (South Africa 1996).[276]

The review of EIA found that the final EIR (Aurecon, 2019) did consider the environmental right in a balanced manner, by considering a range of socio-ecological and socio-economic aspects (with a list of 12 specialist studies being conducted which, included social, transport, agriculture, visual botany impact studies).[277] Although the development proposal was not fully aligned with the CoCT 2013 EMF (in terms of the extent of the area to be protected/not developed), the recommendation in the final EIR for an offset served to highlight this balance. The search for a balance was also reflected in the following statement: "*In summary, the EIA for the preferred layout for the proposed project has identified and assessed all positive and negative environmental, social and economic impacts based on the identified 12 specialist studies. There are a number of negative impacts ranging from negligible to moderate, for which mitigation measures exist. ……. These negative impacts largely relate to the development of a greenfields site in totality, with associated loss of the natural environment and ecosystems. Although specialists were requested to identify sensitive areas on the site that could be excluded from the development (in support of the mitigation hierarchy), it was found that the maintenance thereof in the context of a densely populated settlement would be difficult to guarantee. The overwhelming requirement for land for housing was considered as a strong mitigation to develop the land to its full potential. On this basis, contribution to a biodiversity offset fund has been proposed to ensure that these residual impacts can be partly mitigated through the restoration of similar Critically Endangered Cape Flats Sand Fynbos habitats elsewhere in the City. The loss of wetlands that provide functionality, ecosystem conservation and species conservation can be addressed on the site*……" (Aurecon, 2019:197). It was clear from the above that the final EIR considered all components (i.e., social, economic, and biophysical) to reflect on the environmental right in a balanced manner. It was also clear that developmental needs were considered to be of primary importance (i.e., a higher weight was allocated to the socio-economic component of the broader environment).

In summary, although power dynamics during the EIA process favoured the development of the site, the EIA process still considered all aspects of the environment (i.e., social, economic, and biophysical) in a balanced manner. From a tiering perspective, although the lack of acknowledgment of the CoCT 2013 EMF resulted in a vertical tiering in EA failure, the strength of horizontal tiering in the District SDF/EMF development process and the diagonal tiering between

[276] Section 24 of the Constitution of South Africa (South Africa, 1996).

[277] Appendix D to the final EIR and section 7 of the EIR contain the specialist studies and their inclusion into the main EIR respectively (Aurecon, 2019).

the CoCT 2012 SDF and the EIA process, resulted in a range of socio-economic and socio-ecological issues being considered and presented in a balanced manner during the EIA process.

Based on the above, this criterion was evaluated as conformed to.

Criteria C15.2: To what extent does the EIA decision deal with the environmental right in a balanced manner?

The EAP declined an interview and only stated in an email that she was not aware of the CoCT 2013 EMF (Jones, 2021). Interviewee B1 thought that the EIA decision considered the environmental right in a balanced manner and although the decision was not fully aligned with the EMF (insofar as the extent of development was concerned), the recommendation for an offset served to highlight this balance. However, this reasoning was not reflected in the EIA decision that was issued (DEA&DP, 2019).

Similar to the final EIR, the EIA decision (DEA&DP, 2019) considered both socio-ecological and socio-economic aspects and discussed all the specialist areas dealt with during the EIA process and presented in the final EIR[278] - it discussed the positive and negative impacts of all components of the environment. Most notably, the discussion on 'need and desirability' in the decision, reflected that the decision-making authority had a context-specific view of sustainability that was strongly focused on human settlement needs – "*The provision of housing and services to communities is considered a priority, and an ongoing issue of national importance. The proposed development will assist in alleviating the housing shortage in the area and other areas in the City by providing new housing opportunities. The proposed development is located inside the urban edge of the City of Cape Town….*" (DEA&DP, 2019:20).

In summary, the environmental right was considered in a balanced manner, although the reasoning was based on EIA-specific considerations, not the strategic environmental context. From a tiering perspective, and insofar as the environmental authorisation issued by the decision-maker (DEA&DP, 2019) was concerned, the value of both diagonal and vertical tiering in EA was lost, as the decision did not refer to the strategic context for the site other than to refer to the need for housing within the City of Cape Town when discussing 'need and desirability'.[279]

[278] Annexure 3 "Reason for the decision" to the decision (DEA&DP, 2019).

[279] Annexure 3 "Reason for the decision" to the decision (DEA&DP, 2019).

Based on the above, this criterion was evaluated as being conformed to.

Criteria C15.3: To what extent is EIA an effective tool to achieve sustainable development outcomes?

The EAP declined an interview and only stated in an email that she was not aware of the CoCT 2013 EMF (Jones, 2021). Interviewee B1 believed that the EIA was an effective instrument for achieving sustainability, as in the Penhill EIA. EIA processes enable considering environmental issues, identifying impacts, identifying alternatives, and avoiding or mitigating impacts, irrespective of where such developments are located. The interviewee highlighted that some of the challenges included power dynamics and interestingly highlighted that service delivery projects were the most likely projects that resulted in undue pressure on officials to consider such project proposals that were very site-specific (i.e. limited site alternatives) - i.e. power dynamics where the political priority for service delivery were expected to override the need for a wide range of alternatives and how the impact mitigation hierarchy was being implemented. Regarding EIA follow-up, the interviewee highlighted that there were not adequate resources for officials to follow up on all decisions/authorisations issued.

Interviewee B2 believed that the EIA process was reasonably prescriptive, setting out clear requirements that allowed for adequate outcomes to be achieved. However, if there were vested interests (i.e., undue power dynamics, regardless of the origins thereof), such interests could derail the EIA process. In general, the interviewee considered timeframes to be adequate, but if EAPs submitted insufficient information, it resulted in undue pressure on authorities to resolve this challenge within the legislated timeframes. The interviewee confirmed that sustainability was an essential consideration, even in the presence of contested views on what constituted sustainability in a specific context. The interviewee again highlighted that power dynamics often influence the outcome of EIA processes and what constitutes sustainability in a specific context.

Interviewee B3 considered EIA an essential instrument to achieve project-level sustainability outcomes, but EAPs must apply their minds to the strategic guidance provided by EMFs in achieving sustainability gains.

In summary, EIA was considered an important instrument to facilitate project-level sustainability outcomes. However, there is often an inadequate focus on deliberating sustainability outcomes within the context of the strategic information provided by PPPs, including EMFs. Power dynamics also played a role in influencing sustainability, not only within the specific context of the Penhill EIA process but in general.

Based on the above, this criterion was evaluated as partially conformed to.

Criteria C15.4: Will tiering contribute to EIAs delivering sustainable development outcomes?

Interviewee B1 believed that the tiering in EA did have some value, e.g., in SEAs where sensitivities and impacts were assessed and EMFs where sensitive environmental attributes were mapped. The interviewee emphasised, however, that the creation of a strategic context did not remove the need for an assessment. Interviewee B1 believed that, in general, EMFs and SEAs were adequate in guiding what constitutes appropriate development and can assist with the identification of alternatives. The interviewee believed that the tiered environmental system could be improved if 'no-go and go' areas were explicitly identified as part of the strategic context.

Interviewee B1 agreed that the strategic context should be used in the decision-making process to provide reasons for the decision as required in terms of the PAJA and the EIA Regulations. When questioned on why this was not done in the Penhill decision, the interviewee acknowledged that the presence of power dynamics could result in a weak reliance on the strategic context, but also acknowledged the need for a consistent reliance on, and presentation of the strategic context in decision-making in general. When questioned on the importance of reasons and reasoning in the decision, the interviewee acknowledged that decisions often contain concluding statements rather than comprehensive reasoning. Whilst acknowledging the need for both reasons and reasoning, the dilemma of the decision-maker was that providing extensive reasoning also increases exposure to grounds for appeals or legal actions. Interviewee B1 also believed that the strategic context should be appropriate in assisting decision-makers in providing reasons and reasoning for decisions – i.e., sustainability is context-specific, and the strategic context must assist stakeholders in conveying how the strategic context influences the application of sustainability within a given context.

In the Penhill case study, the establishment of tiering in EA was achieved through the development of the CoCT 2013 EMF informed by District SDP/EMFs. This information did create a strategic context that could be used to evaluate sustainability at an EIA level. However, in practice, this information was not used during the EIA process and decision-making.

Both interviewees D5 and E1 emphasised that EMFs are crucial in creating a strategic context for EIAs and as such, that successful tiering is required to achieve sustainability outcomes at the EIA level that are context-specific. However, this was not effectively achieved in practice and improvements in both EIA and EMF practices were needed.

In the Penhill case study, vertical tiering in EA failed, but horizontal tiering between the EMF and SDF, and diagonal tiering between the SDF and EIA, were relatively successful.

In summary, it was agreed that in theory, tiering could and should assist in creating a strategic context for sustainability. However, this was not achieved in practice.

Based on the above, this criterion was evaluated as partially conformed to.

7.4 Key Observations emerging from Penhill case study

From the results of the Penhill case study, a number of key observations emerged that are relevant to tiering in EA. These observations are not related to specific criteria, but apply to EA tiering in general, as observed in the case study. The observations relate to power dynamics, knowledge brokerage, administrative justice, the strength of horizontal and diagonal tiering and the political will to conduct an EMF to implement tiering.

Power dynamics:

The views expressed by interviewees and the wording used in the final EIR indicate that primary importance was given to the housing needs in developing the Penhill site. The clear preference of the applicant for the development of the Penhill site was reflected in the study they commissioned (Planning Partners, 2017). The nature of the alternatives identified (based on the above study by Planning Partners) and the motivation for not pursuing the “no-go” alternative and how this influenced the application of the impact mitigation hierarch to reach the point where certain impacts were considered to be “unavoidable” to enable optimising socio-economic benefits resulting in an offset being implemented. Several interviewees directly or indirectly referred to the presence of power dynamics. The case study reflected how power dynamics influenced the EIA process toward supporting a strong developmental outcome. It also illustrated that the omni-presence of power dynamics was an unavoidable part of EIA processes (and was part of the final EIR). In the case study, power dynamics influenced how/what information is presented, alternatives identified, and the application of the impact mitigation hierarchy.

Knowledge brokerage: the case study highlighted the importance of knowledge brokerage in tiered assessments on two levels:

- The knowledge brokering role of EIAs: The Penhill case study reflected how power dynamics influenced the EIA process towards supporting a strong developmental outcome and how information is presented in support thereof. The knowledge brokerage role of tiering was lost as the EIA did not present any reasoning on how the strategic context contained in the EMF influenced decision-making. The case study also emphasised the important role of the EAP (interviewee B2) and the decision-making authority (through the review official - i.e., Interviewee B1) in the balanced consideration and presentation of information in achieving sustainability outcomes. Again, in the Penhill case study, this opportunity was largely lost.

- The knowledge brokering role of EMFs: Firstly, it must be highlighted that the lack of acknowledgment of the existence of the CoCT 2013 EMF meant that the value of vertical tiering in EA was lost in this case study – i.e., using the strategic environmental context in the reasoning of alternatives, impact rating and the application of the mitigation hierarchy, as well as empowering stakeholders on the importance of the strategic environmental context. However, the strength of the horizontal/diagonal tiering between the EMF and SDF process indirectly resulted in the value of the strategic environmental context being realised. The EIA outcome to implement offsets testified to the value of the strategic environmental context (preferably through vertical tiering and not indirectly through horizontal tiering) in partially countering inappropriate power dynamics also should be highlighted, although it is difficult to determine the exact extent to which this was achieved in this case study.

Administrative justice: Although the value of vertical tiering in EA was lost due to the lack of acknowledgment of the CoCT 2013 EMF, the substantive information related to the strategic context was considered during the EIA process, albeit through the strength of horizontal tiering between the EMF and SDF. However, legally, and from a fair and just administrative perspective, the lack of consideration of vertical tiering (i.e., the information contained in the EMF) constituted a major flaw. Also, the environmental authorisation did not refer to the strategic context other than emphasising the housing need. Therefore, the value that the decision-maker attached to the strategic context provided by the EMF, was not reflected in the reasons or the reasoning contained in the written decision.[280] This was unfortunate as the interested and affected parties/ stakeholders could not understand the value the decision-maker attached to the strategic context.

[280] Lezmin 2588 CC v The Provincial Minister for Local Government, Environmental Affairs & Development Planning, Western Cape & the City of Cape Town (21935/2009), Judgement delivered on 18 Oct 2010. In the judgment, the following is also quoted another judgment to highlight that decision-makers should explain decisions "….*in a way which will enable a person aggrieved to say, in effect. "even though I may not agree with it, I now understand why the decision went against me. I am now in a position to decide whether that decision has involved an unwarranted finding of fact, or an error of law, which is worth challenging. This requires that the decision-maker should set out his understanding of the relevant law, any findings of fact on which his conclusions depend (especially if those facts have been in dispute), and the reasoning processes which led him to those conclusions. He should do so in clear and unambiguous language, to in vague generalities or the formal language of legislation……" (Judge Blignault, 2010*.

Simply put, if decision-making authorities are not clear about the value attached to the strategic context, stakeholders would not do so either. In the Penhill case study this impacted the knowledge brokerage role that decision-making authorities should play - i.e., the importance of knowledge sharing and transfer, as a way of breaking down barriers that impede stakeholder interaction, healthy communication, and collaboration, was lost.

The strength of horizontal and diagonal tiering: The Penhill case study highlights the strength of (vertical and horizontal) tiering in the planning sector and the extent to which diagonal tiering compensates for the lack of tiering in EA:

- The clear tiering requirements in the planning legislation have resulted in a well-established tiering practice, particularly at the municipal level. Vertical tiering between the national, provincial, regional, municipal, and sub-municipal levels of planning is provided for.[281] Horizontal tiering (with the requirement that other sector strategies/plans must be considered in the drafting of SDFs) is also provided for in legislation.[282] Added to this, the drafting of municipal SDFs and the review thereof every 5 years, were legal requirements. The importance of considering the SDF in decision-making is also underscored by the interesting provision in the SPLUMA that "A *Municipal Planning Tribunal or any authority required or mandated to make a decision in terms of this Act or any other law relating to land development, may not make a decision which is inconsistent with a municipal spatial development framework.*"[283] The above legal context has resulted in a strong tiering system and culture being established within the planning sector, resources were being allocated towards this mandate, and regulatory decision-making was required to consider (be aligned to) the tiered information.
- The Penhill Case Study also reflected the extent to which the above tiering system and culture is lacking in the EA sector. There is a lack of clearly defined tiers, the strategic level tier is still voluntary, and although a legal requirement, the information contained in strategic tiers is poorly considered (i.e., treated as voluntary) in regulatory decision-making. In the Penhill case study, it was the strength of the tiering in the land use planning sector and the strength of the diagonal tiering between the municipal SDF (as a strategic planning tier) and the EIA that paved the way for informed decision-making and the incorporation of strategic environmental informants into the EIA process.

[281] Section 12 – 22 of the Spatial Planning and Land Use Act, 2013 (South Africa, 2013).

[282] Section 12(5) provides that "a municipal spatial development framework must assist in integrating, coordinating, aligning and expressing development policies and plans emanating from the various sectors of the spheres of government as they apply within a municipal areas."

[283] Section 22(1) of the SPLUMA (South Africa, 2013).

Political will to conduct an EMF: Another important contribution to the effective implementation of tiering was the political will of the CoCT to conduct an integrated SDF/EMF process. This strong political will towards integrated planning may not exist in all municipalities (a sentiment expressed by some interviewees), and the outcome of the planning process may therefore not be as well-informed (or balanced) by the incorporation of environmental considerations as is the case in the CoCT. Also, the environmental sector cannot always depend on the strength of tiering in the land use planning sector to create a strategic environmental context that promotes environmental rights in a balanced manner. Not all municipalities have the political will and the resources to conduct EMFs as in the CoCT.

7.5 Theory of Change Narrative for the Penhill Case Study based on practice

The extent to which the 15 assumptions that underpinned the logical framework for EA are valid (=conform) for the Penhill case study is depicted in Figure 7-3. Based on the performance of these assumptions, ToC narrative for the Penhill case study can be described as follows:

> *Whilst the institutional context that existed in the form of legislation and policies only partially supported the established tiered EA information, the political will existed within the CoCT to allocate resources and conduct an integrated EMF/SDF to inform and provide guidance to EA processes, although it did not revise the regulatory EIA process (design component) (Assumptions 1 and 2). A credible and current strategic context provided by the CoCT 2013 EMF was available to inform the Penhill EIA. The EIA process followed the prescribed regulatory EIA process(Assumptions 3, 4, 5, 6 and 7)(input component). However, the strategic contextual information of the EMF was not used during the EIA process (Assumption 8). Conducting the EIA process (activity component), resulted in Environmental Impact Report as a deliverable, and the review thereof produced an environmental authorisation (output component). Although the Environmental Impact Report and environmental authorisation did not recognise the EMF information, these EIA outputs were partially aligned with the strategic context, inclusive of the use of offsets. The EMF information was indirectly used through horizontal tiering between the integrated EMF and SDF, and diagonal tiering between the SDF and the EIA (Assumptions 9 and 10). The stakeholders did not reflect on the strategic context during the EIA process and therefore, did not attach value to the strategic context and its contribution to sustainability (Assumptions 11, 12, and 13) (outcome component). Whilst being consistent with the strategic context, the EIA and the EIA decision did not reflect on sustainability or the progressive realisation of the environmental right contained in Section 24 of the Constitution within the strategic context provided by the EMF. Through horizontal tiering between the*

EMF and the SDF, cooperative governance was improved *(Assumptions 14 and 15)* *(impact component).*

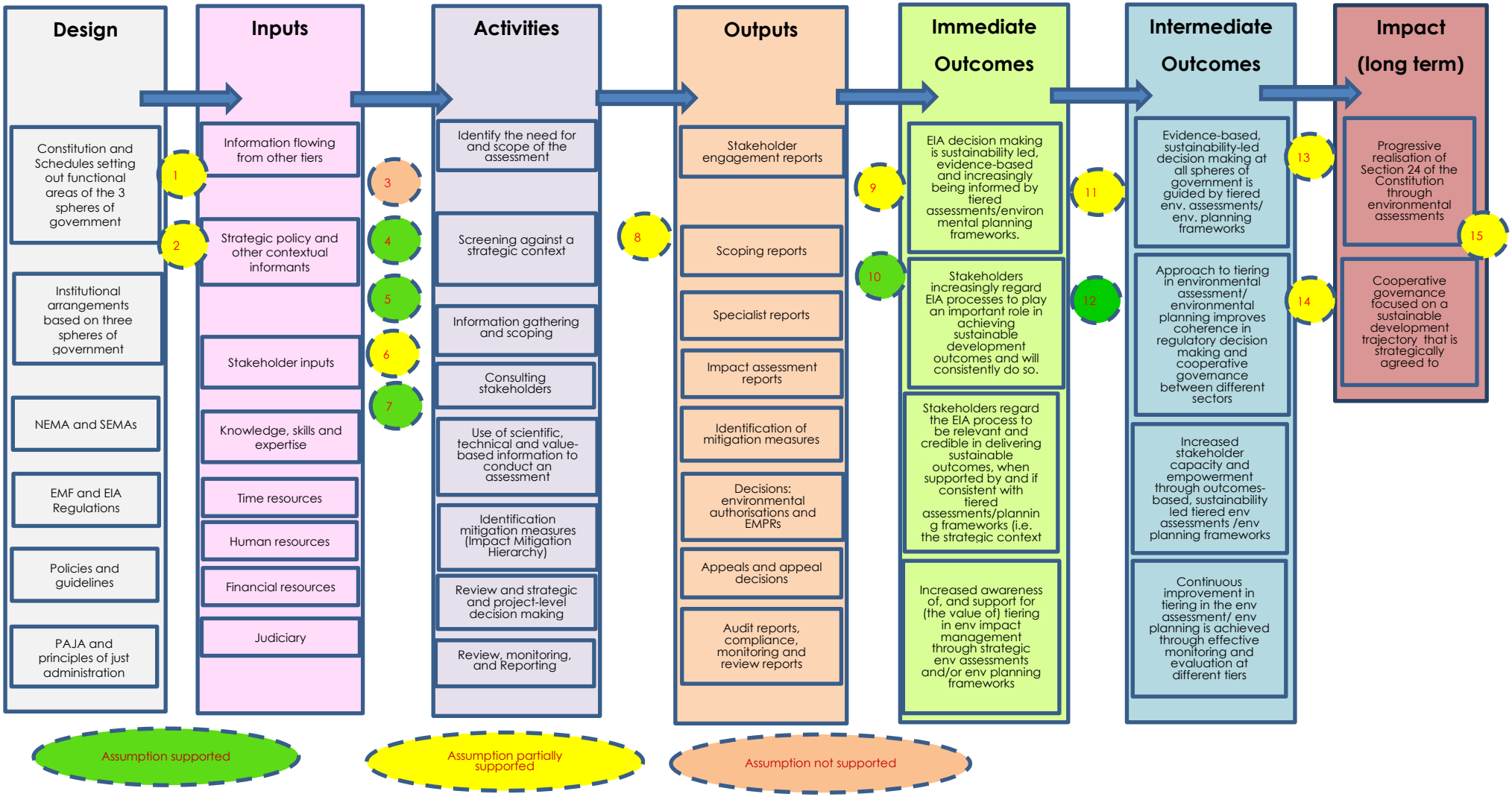

Figure 7-3: ToC Map for the Penhill Case Study

CHAPTER 8: GEORGE REX CASE STUDY (CASE 3)

This chapter addressed research objective 3 by evaluating how EIA functions within a tiered EA system in South Africa, based on the George Rex case study. Section 8.1 introduces the case study. Section 8.2 provides a summary of the results of the case study analysis. Section 8.3 contains a detailed analysis based on the evaluation criteria per the ToC component. Section 8.4 discusses key observations from the George Rex case study. Section 8.5 presents the ToC map and narrative for the George Rex case study in practice, based on the analysis contained in the preceding sections.

8.1 Introduction

This George Rex case study involved tiering between two EIA applications for the same development and an EMF (conducted at a strategic level) between 2010 and 2019. Figure 8-4 provides an overview of a timeline and sequence of events related to the EMF and the EIA applications. The proposal for the development was submitted by Jazz Spirit 130 (Pty) Ltd in 2019 and comprised a mixed-use development with a sports, adventure, and tourism focus.

The property on which the proposed development will be situated is located in the town of Knysna (in the Southern Part of the Western Cape Province – see Figure 8-1). This property (19,4ha in extent) is undeveloped, but surrounded by other developments. This includes a wastewater treatment works on the northern boundary, a residential development on the eastern boundary, a hotel on the western boundary, and a golf course to the south (Figures 8-1, 8-2, and 8-3).

Figure 8-1: Site location of the George Rex development

Figure 8-2: George Rex site location and surrounding areas (Ebersohn, 2022)

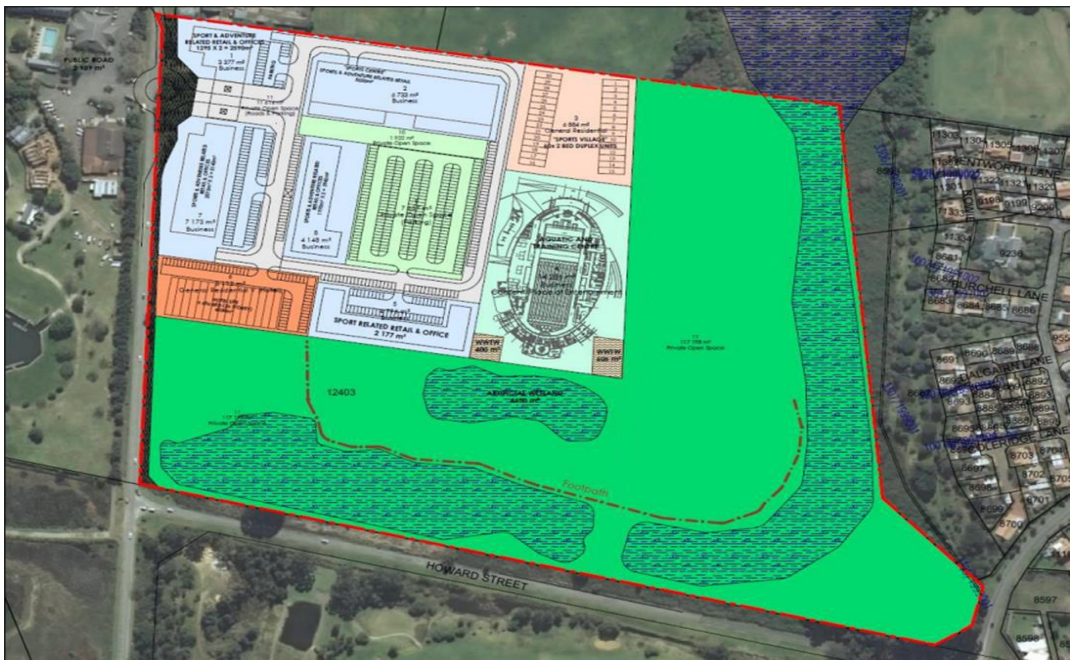

Figure 8-3: Proposed George Rex development layout (Ebersohn, 2019)

The property is also located within the Knysna National Lakes Area (Vreken, 2021).[284] It had a long history with various development proposals (site development plans) over a period of two (2) decades (Ebersohn, 2022). The final development proposal was based on the various specialists' recommendations, meetings with authorities (DEA, DEA&DP, SANParks, Department of Water Affairs, Knysna Municipality), and various NGOs (Ebersohn, 2022). As indicated, the development proposal was for 40% of the property to be developed and the remaining 60% to be rehabilitated. The final development proposal consisted of the following (see Figure 8-3) components:

- Flats/sports village
- Hotel
- Business components:
    - Sports and wellness-orientated retail and offices/consulting rooms for sport & wellness-related professional services).

[284] Proclaimed as a National Lakes Area in terms of section 86(3) of the Environmental Management Act: Protected Areas Act 2003 (Act 57 of 2003), in Government Gazette 31775, dated 16 January 2009. The Knysna estuary, as part of the National Lake Area, is managed and protected by the SANParks. It is a biologically rich area which holds over 200 species of fish, the Pansy shell and the endangered Knysna Seahorse.

    - ‘Place of assembly’ for an indoor pool, ancillary high-performance sports facilities, and recreation areas for concerts, conventions, exhibitions, etc.
- Open space areas:
    - For recreation and parking,
    - Walking trails and conservation areas.
- Associated infrastructure such as roads, water, and electricity services (Ebersohn 2022).

Most of the site is covered by a wetland with no legal protection status other than being included in the Knysna National Lakes Area (Ebersohn, 2022). The George Rex wetland is located on a relatively flat slope (< 1:100) and drains slowly to the South and West. The medium to low permeability of the soil results in surface ponding during periods of persistent rainfall.

Although the water from the wetland originally flowed directly into the Knysna Estuary, this flow has been significantly altered by the construction of George Rex Drive on the western boundary of the site (see Figures 8-1 to 8-3), resulting in ponding of the water and the flooding of George Rex Drive during high rainfall events. The entire site is 2 to 3m above mean sea level. A constructed channel is located on the eastern boundary of the site, with the remaining wetland on the property being predominantly located on the southern and western parts of the site. The main impacts that altered the site, include the dumping of sawdust; invasion of alien plants; obstruction of the natural flow of water into the wetland; and elevated levels of nutrient inflows from the adjacent catchment and nearby wastewater treatment works (WWTW) (Ebersohn, 2022). Based on these impacts, the ecological functioning of the wetland has declined. (Rountree and Scherman, 2017). However, the specialists indicated that the wetland can be rehabilitated to improve its ecological functioning. This will provide a level of protection to the downstream Knysna Estuary against poor effluent discharges from the WWTW located immediately upstream of the property.

In terms of the legal requirements of the NEMA (South Africa, 1998a) and the EIA Regulations (South Africa, 2014a), the proposed development triggers the need for the proponent (the developer) to apply for environmental authorisation before commencing with the proposed development.

Jazz Spirit 130 (Pty) Ltd (the applicant) lodged two applications for environmental authorisation for the proposed development. Eco Route environmental consultants conducted the EIA processes in support of both applications. Two environmental refusals were issued by the

Department of Forestry, Fisheries and Environment (DFFE)[285] (previously the Department of Environmental Affairs) as the decision-making authority, the first on 17 October 2020 (DFFE, 2020) and the second on 8 June 2022 (DFFE, 2022).

Figure 8-4 provides an overview of a timeline – the sequence of events – related to the EMF and the applications.

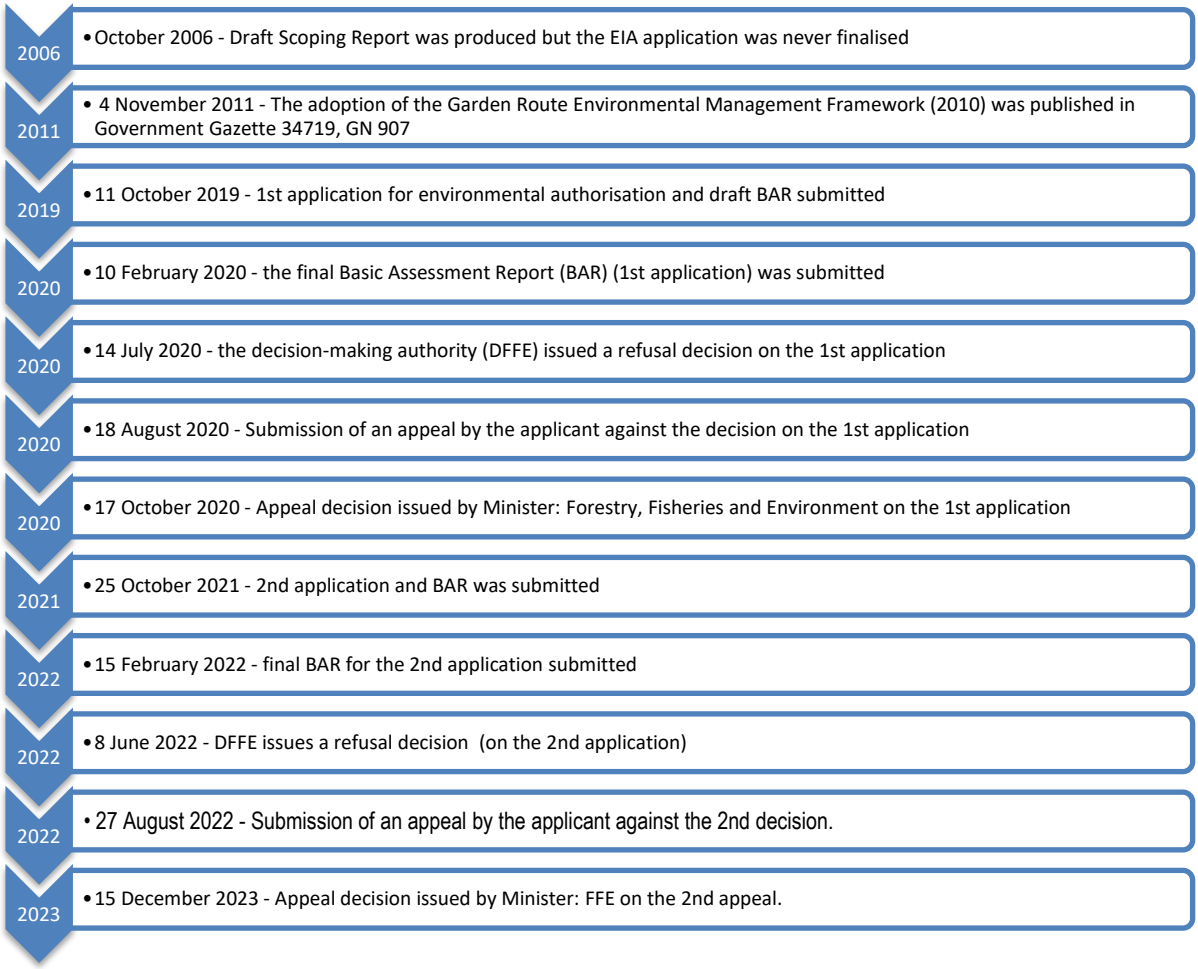

Figure 8-4: Timeline and sequence of events for the George Rex case study

Pre-application period: Preceding the submission of the first application in 2019, several specialist studies, including wetland and botanical studies, were conducted in the period between 1995 and 2019 (Ebersohn, 2019). Although an EIA process was commenced in 2005, including conducting

[285] Since the property is located within a designated Knysna National Lakes Area (Vreken 2022), DFFE is the competent decision-making authority in terms of the EIA Regulations (South Africa, 2014a).

several specialist studies, it was never concluded (Badenhorst, 2006).[286] This research did not discuss the unfinished application and EIA process in detail.

The Garden Route EMF: The Garden Route EMF provided the strategic environmental context for the George Rex site. The geographical area known as the Garden Route is one of the most picturesque areas in the country and stretches from Mossel Bay to Storms River. The Garden Route Environmental Management Framework (Garden Route EMF) only covered part of this area – the National Lakes Area.[287] The EMF covered the area between the towns of Wilderness on the west, Knysna on the east, and the Quteniqua mountain range on the north. This area includes the unique coastal lake system consisting of six main lakes and the Knysna Estuary. The latter was considered one of the most important estuaries in South Africa (Earth Inc, 2010). The proposed George Rex development was located in the National Lakes Area on the edge of the Knysna Estuary (Earth-Inc, 2010) (Figures 8-1, 8-2, and 8-3).

The Garden Route EMF, compiled by Earth-Inc Environmental and Development Consultants, was finalised in November 2010 (Earth Inc, 2010). The EMF was adopted by the Minister of Environmental Affairs and Tourism in November 2011.[288] The compilation of the Garden Route EMF preceded the EMF regulations and according to Interviewee C3, one of the DFFE officials involved in drafting the EMF, the Garden Route EMF was to set the benchmark on how to do EMFs and the content requirements thereof. The adoption of the Garden Route EMF was enabled by the EMF Regulations (South Africa, 2010) that came into effect just before the EMF was finalised.

The first application: Consistent with the regulatory requirements, an application for environmental authorisation and the Draft Basic Assessment Report (BAR)[289] dated 10 October 2019 was submitted to, and received by the competent decision-making authority, the Department of Forestry, Fisheries and Environment (DFFE), on 11 October 2019. A final BAR was submitted to DFFE on 10 March 2020. On 14 July 2020, DFFE issued a negative decision, refusing environmental authorisation (DFFE, 2020). The primary reason for this refusal was procedural of nature because the BAR was not made available to the public for the full 30 days as required

[286] The EIA process commenced in 2005 and was conducted by a different consultant, Pieter Badenhorst Professional Services but was not concluded. Subsequently, Eco Route Consultancy conducted the EIA processes and managed the regulatory application processes for the 1st and second applications (2019 and 2022) that were concluded and resulted in decisions being issued.

[287] Proclaimed as a National Lakes Area in terms of section 86(3) of the Environmental Management Act: Protected Areas Act 2003 (Act 57 of 2003), in Government Gazette 31775, dated 16 January 2009.

[288] Published in Government Gazette 34719, Government Notice 907, dated 4 November 2011.

[289] The BAR is a more streamlined version compared to an Environmental Impact Report, applicable to developments with an anticipated lesser impact.

in the legislation (i.e., the final BAR dated 10 March 2020 was also the final day available to the public for comment!).

The first appeal: Based on the refusal issued by DFFE, the applicant lodged an appeal on 18 August 2020, in terms of the appeal provisions of the NEMA.[290] The appeal decision by the Minister as the appeal authority, was issued on 17 October 2020 (Minister: FFE, 2020). Two of the appeal grounds (related to lack of authority notification to the applicant of the decision and consideration of irrelevant information) were dismissed, but based on the third appeal ground (regarding the lack of public consultation), the appeal decision included the following:

"*Having carefully considered the abovementioned information and in terms of sections 43(6) of NEMA, I have decided to dismiss the ground of appeal mentioned in paragraphs 1.6.1 and 1.5.3 above. Regarding the ground of appeal mentioned in paragraph 1.6.2 above, the appellant is afforded the opportunity to address the shortcomings of the PPP, as alluded to in paragraphs 2.2.11 to 2.2.13 above. The matter is accordingly remitted to the Department to allow for the further consultation and reconsideration of the application*" (Minister: FFE, 2020:9).[291]

The appeal decision, therefore, allowed the applicant to resubmit the application, subject to addressing the public participation shortcomings. The second application (and EIA process), therefore, informed (i.e., horizontal tiering) the second application (and EIA process).

The second application: Based on the appeal decision on the first application, and in consultation with DFFE a second revised EIA process was conducted, resulting in a second application, supported by a draft BAR submitted to DFFE on 25 October 2021. Following the required regulatory process, including public consultation, a final BAR was submitted to DFFE on 15 February 2022 (Ebersohn, 2022). The development proposal that was applied for in this second application, was the same as the first application – this was based on the appeal decision that did not identify fatal flaws based on substance but was primarily based on procedural shortcomings. There was a horizontal tiering relationship between the 1st and the second applications, as the second application utilised (but augmented) the information contained in the first application. In reviewing the second application, DFFE again refused environmental authorisation on 8 June 2022 (DFFE, 2022).

The second appeal: Based on the refusal issued by DFFE, the applicant lodged an appeal on 27 August 2023 in terms of the provisions of the NEMA. The appeal decision by the Minister as the

[290] Section 43 of the NEMA provides for appeals to be submitted against EIA decisions. For the George Rex case study, the appeal authority was the Minister of Forestry, Fisheries and the Environment.

[291] Paragraph 3.3 (Page 9) of the Appeal Decision (Minister: FFE, 2020).

appeal authority, was issued on 15 December 2023 (Minister: FFE, 2023). The appeal decision set aside the refusal decision and required the application to be amended to address shortcomings before submitting it to the decision-making authority for reconsideration. The latter process was still to be concluded when this research was concluded.

8.2 Analysis and Findings for the George Rex Case Study

From the 35 criteria (see Chapter 4) evaluated for the George Rex case, 6 conformed to expectations, while 20 partially conformed and 9 did not conform. The findings are presented and reflected in Table 8-1. The detailed findings for each criterion are discussed in the subsequent sections.

The official responsible for the review of the application and the associated EIA declined an interview, although the criteria could still be evaluated based on the official's documented involvement during the EIA process.

The rating of criteria as conforming, partially conforming or non-conforming (green, yellow and red colour coding, respectively) was the subjective evaluation of the researcher based on the detailed information contained in section 8.3.

ToC Component	Assumption	Evaluation criteria
Conformance	***Partial conformance*** / ***Non-conformance***	
Design Component	Assumption A1: It is assumed that the environmental management policies and the legislative framework make clear provision for tiered environmental assessments and tiered decision-making, in support of establishing a credible, evidenced-based strategic context for EIAs (and other project-level assessment and decision-making).	C1.1
		C1.2
		C1.3
	Assumption A2: Authorities are committed to developing institutional arrangements required to establish strategic context (tiers) to support project-level assessments and decision-making.	C2.1
		C2.2
Input Component	Assumption A3: A relevant strategic environmental context is available in the form of a strategic level assessment and/or environmental management framework, to guide assessment and decision-making at the project level.	C3.1
	Assumption A4: Functional specialists provided clear guidance in setting a strategic context and the translation thereof into project-level inputs.	C4.1
	Assumption A5: The strategic environmental context was the outcome of an evidence-based policy formulation and a credible environmental assessment process.	C5.1
		C5.2
		C5.3
	Assumption A6: The strategic environmental context is supported by relevant key role-players	C6.1
		C6.2
	Assumption A7: The preceding tiered environmental assessment considered both policy/legislation inputs (vertical tiers), as well as other sector inputs (horizontal/diagonal tiering).	C7.1
		C7.2

		C7.3
Activity Component	Assumption A8: EAPs, in compiling the assessment and the review thereof are aware of and understand the role of strategic contextual informants when conducting their duties.	C8.1
		C8.2
		C8.3
		C8.4
		C8.5
		C8.6
Output Component	Assumption A9: The EIA decision will validate and strengthen the strategic environmental context.	C9.1
Immediate Outcome Component	Assumption A10: Tiered environmental assessments provide clear guidance to lower tiers to facilitate sustainability outcomes at project level assessment and decision-making.	C10.1
	Assumption A11: In considering what constitutes sustainability outcomes, stakeholders attached value to aligning project-level assessments and decisions to the strategic environmental context.	C11.1
		C11.2
Intermediate Outcome Component	Assumption A12: The need for aligned/ integrated decision-making will promote the value of tiered environmental assessment to overcome sectoral interests	C12.1
	Assumption A13: The support for the value of tiering in environmental assessment results in allocating resources and establishing institutional arrangements to support strategic-level assessment.	C13.1
		C13.2
Impact Component	Assumption A14: The strategic context (through SEAs or EMFs) is actively contributing to sustainable development goals.	C14.1
		C14.2
		C14.3
	Assumption A15: EIAs are supported as essential instruments in tiering in environmental assessment for achieving environmental rights.	C15.1
		C15.2
		C15.3
		C15.4

Table 8-1: Analysis of the George Rex Case Study

8.3 Case study analysis per ToC component

This section presents the analysis of the George Rex Case Study according to the various ToC components and their relevant evaluation criteria in Table 5-1.

8.3.1 The Design ToC Component

The criteria developed to evaluate the assumptions related to the ToC's Design Component were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criteria C1.1, C1.2, C1.3, C2.1, and C2.2, as discussed in the following section.

Criterion C1.1: To what extent does the policy context promote tiering in environmental assessment and decision-making?

There was a well-developed policy context for urban development, including South Africa's National Development Plan 2030 (NDP) (National Planning Commission, 2012), the Western Cape Provincial Spatial Development Framework, 2014 (PSDF) (DEA&DP, 2014), and the Knysna Spatial Development Framework 2017 (Knysna Municipality, 2017). The legislation and policy context culminated in a well-developed tiering system in land use planning applicable to the case study.

The above policies did not specifically promote tiering in EA but conducting the Garden Route EMF contributed to EA tiering by creating a strategic assessment tier. The EMF provided maps with environmental management zones to inform EIA processes. Consistent with the enabling provisions of the NEMA,[292] a strong focus of the EMF was to provide support for regulatory decision-making *"……this EMF is being conducted as a response to the conflict between the development, perceived and entrenched land owner rights, and conservation requirements, as well as the need for economic growth. This approach requires a high level mechanism which establishes a management framework which will not only address long term conservation planning issues, but will facilitate and support development decision making on a local, provincial and national level. The administrative mandate of the National Department of Environmental Affairs and Tourism (DEAT) is the management and protection of the South African National Park system through SANParks. The development and urbanisation pressures on the National Parks comprising the National Lakes Area is clearly evident establishing the driver for the development of this EMF.*" (Earth-Inc, 2010:4).[293]

In summary, a clear strategic policy and spatial, tiered land use planning context was available to inform the George Rex development proposal. However, the same policy context did not exist to promote tiering in EA. The Garden Route EMF contributed to creating tiering in EA, although it was outdated when the George Rex EIA process commenced.

This criterion was evaluated as partially conformed to.

Criterion C1.2: To what extent does the legislation include adequate enabling provisions to mandate tiering in environmental assessment, environmental planning, and tiered decision-making?

[292] Section 24(3) of the NEMA (South Africa, 1998a)

[293] Page 4 of the Garden Route EMF (Earth-Inc, 2010).

The framework legislation for environmental management (NEMA) (South Africa, 1998a) does not explicitly legislate tiering (see Chapter 4). The EMF Regulations (South Africa, 2010) provide the enabling provisions for creating a strategic legal context but conducting EMFs is voluntary (see Chapter 4).

The George Rex development involved development activities that were listed in terms of sections 24(2)(a) of the NEMA, and that required the applicant to obtain environmental authorisation (i.e., environmental approval) before commencing with the development (DEA 2014a).[294] [295] Based on the listed activities triggered by the George Rex development, the applicant was required to follow a Basic Assessment (BA) process, producing a BAR to support the application for environmental authorisation.

The Garden Route EMF constitutes a strategic level EA and was developed in terms of the provisions in the NEMA.[296] There was no legal requirement to develop an EMF[297] (i.e., a strategic-level tiered assessment), but the Garden Route EMF was developed based on the political will of the national Department responsible for environmental management (pers. comm. Smit, 2023), to develop a strategic-level informant to regulatory decision-making in the National Lakes Area. The finalisation of this EMF preceded the promulgation of the 2010 EMF Regulations (South Africa, 2010) was specifically focused on the procedural and content requirements of EMFs. However, the contents of the Garden Route EMF, although preceding EMF Regulations, were consistent with the content requirements of the EMF Regulations.

From a regulatory perspective, an EMF formally adopted by the environmental authority must be considered in EIA processes for project proposals.[298] Although a relatively weak link, the legislation provided a tiering relationship between EMFs and EIAs. The legal requirement to consider the Garden Route EMF applied to the George Rex EIA process and decision-making.

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[294] On 4 December 2014, the Minister of Environmental Affairs promulgated new regulations in terms of Chapter 5 of the NEMA, viz, the EIA Regulations 2014 (Government Notices (GN) No. R. 982, R. 983, R. 984 and R. 985 in Government Gazette No. 38282 of 4 December 2014). These regulations came into effect on 8 December 2014 (South Africa, 2014a)

[295] The EIA Regulations 2014 published in Government Notice (GN) No. R982, provide for the control of certain Listed Activities. These activities are listed in GN No. R983 (Listing Notice 1 – Basic Assessment), R984 (Listing Notice 2 – Scoping & EIA Process) and R985 (Listing Notice 3 – Basic Assessment) of 4 December, and are prohibited until environmental authorisation (South Africa, 2014a).

[296] Section 24(3) of the NEMA (South Africa 1998a)

[297] The NEMA (South Africa 1998) and the EMF Regulations (South Africa, 2014a) provide the enabling provisions for the development of EMFs, but the development thereof is voluntary. However, once adopted by the Minister responsible for environmental management, the EMF *must* be considered in regulatory decision-making.

[298]Section 24O(1)(v) of the NEMA, regulation 16(3)(c) of the EIA Regulations, Appendix 1, 2 and 3 to the EIA Regulations (GNR 326 of 7 April 2017), and regulation 5 of the EMF Regulations (GN R547 of 18 June 2010).

Apart from providing information that must be considered during the EIA process, the Garden Route EMF did not contain any recommendations to change the regulatory requirements of the EIA process as set out in the EIA Regulations (South Africa, 2014a) - i.e., it did not provide for a revised regulatory process as an alternative to the EIA process for developments located in the geographical area of the EMF.

In summary, the NEMA, as the framework legislation for environmental management in South Africa, did not specifically set a requirement for tiering in EA. It did, however, contain provisions that can be used to create tiered EAs, if the political will existed. Although the development of the Garden Route EMF was not enabled through legislation at the time, the decision to develop the EMF was voluntary. However, the Garden Route EMF was adopted[299] and the consideration thereof during the George Rex EIA process was a legal requirement. The Garden Route EMF did not change any legal requirements of the EIA process but provided information to be considered during the George Rex EIA process.

Based on the legislative context discussed above, this criterion was evaluated as partially conformed to.

Criterion C1.3: To what extent is there a need for policy and law reform to enable or improve tiering in environmental management?

Interviewee C2 did not express any opinion on the need for policy and law reform. Interviewees C3 and C4 expressed that policy and law reform may be beneficial in promoting integrated environmental management as originally intended (beyond the primary focus on EIAs) but that the nature and extent of such reform must be carefully considered. This conditional support for policy and law reform to enable better use of a broader range of IEM instruments was also expressed by interviewees D4, D5, E1, E2, and E3, related to EA in general.

In summary, there was support for some form of policy and law reform to enable the improved utilisation of EMFs (and strategic-level information in general), but the interviewees could not provide any detail on the nature and extent thereof. Strategic debates are still needed in this regard.

This criterion was evaluated as not conformed to, meaning that the current policy and legislative context was inadequate, and policy and law reform were required.

[299] Adoption refers to the decision by the minister responsible for environmental management to publish the adoption of an EMF as an environmental management instrument that must be considered during regulatory decision-making processes. (South Africa, 2014a).

Criterion C2.1: To what extent is there support for tiering in environmental assessment in South Africa and provinces?

Interviewees C2, C3, and C4 were uncertain how to reply to the question and had to be prompted. However, once the theoretical concept of tiering was explained, the interviewees indicated that in general tiering was important to support EIAs. However, this general support was not replicated in the EIA or the EIA decision – see discussion on criteria C6.1, C8.1, and C9.1.

Interviewees D5 and E1 noted that while effective functional-specific environmental planning generally occurs within the different functional areas within the Western Cape, no assessment or plan/strategy integrated everything - this was primarily driven by the legal requirements contained in the environmental legislation.[300] Interviewee D5 noted that two EMF follow-up studies (not available on the Departmental website) found that EMFs are poorly referenced and poorly used in EIA decision-making. At a national level, the decision-making authority in the George Rex case study, interviewees D4 and E3 agreed that the support for tiering is not reflected (or used) in EIA practices.

In summary, tiering is supported as important. However, the case study performance did not translate this support for tiering into EIA practices and EIA decision-making.

Based on the above, this criterion was evaluated as partially conformed to.

Criteria C2.2: To what extent is there a specific strategy in the province to promote and implement strategic environmental assessment and /or environmental planning initiatives?

Interviewees C2 and C4 did not express an opinion on the specific strategy in DFFE to promote and implement strategic environmental assessment and/or environmental planning initiatives. Interviewee C3 noted that DFFE did not have any strategy related to EMFs and that more support was being given to SEAs. This view was corroborated by Interviewee E3.

Interviewee E1 confirmed that the Western Cape (the province within which the George Rex development is located) had a clear strategy to conduct functional-specific environmental planning in the different functional areas within the environmental sector (driven by the legal

[300] The various SEMAs contains requirements for the development of strategic level plans and strategies, and section 11 of the NEMA sets the requirement for Environmental Implementation Plans (see Chapter 3 for a more detailed discussion of these requirements)

mandate, as stipulated in the various SEMAs. The interviewee noted that although there was strategic (institutional) support for integrated planning (conducting integrated EMFs/SDFs), there were not enough financial resources to do so. This view was corroborated by Interviewee D5.

Interviewee D4 was not aware of a specific strategy at a national level (in DFFE) to promote strategic-level EAs. The interviewee noted that DFFE was actively using SEAs to support infrastructural development and the development of a legal framework for the development of other IEM instruments. The interviewee thought a strategy was needed to make other IEM instruments mandatory (including strategic assessment instruments) to clarify when and how to use these instruments. Regarding EMFs, the interviewee confirmed that DFFE was not funding any EMFs (as was done in the past). The interviewee believed that because its compilation was still voluntary, and it was considered by some to be an inferior instrument - EMFs therefore struggled to reach the implementation phase. The interviewee promoted that the development of EMFs and their consideration in EIAs should be mandatory.

Interviewee D5 noted that there was no specific strategy to implement strategic-level EAs in the Western Cape Province, but rather an *ad hoc* approach to developing EMFs. In the last 8 years, 5 EMFs were developed, but due to austerity measures, no resources were available for EMFs in the future. There was a strategic focus in the Department to move towards integrated planning (i.e., integrating EMFs and SDFs) and the last three EMFs support this drive. However, there was still internal disagreement on the need for integrated planning, resulting in the inconsistent implementation of the strategic decision towards integrated planning. The interviewee was of the opinion that a much stronger policy position was needed in this regard.

In summary, functional-specific environmental planning was being conducted in the various functional areas of environmental management (e.g., biodiversity and climate change). There were also good examples where strategic-level assessment and integrated planning occurred, but there is no coherent strategy to establish tiering in EA in the Western Cape or at a national level.

This criterion is evaluated as partially conformed to.

8.3.2 The Input ToC Component

The criteria developed to evaluate the assumptions related to the Input ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated

against Criteria C3.1, C4.1, C5.1, C5.2, C5.3, C6.2, C7.1, C7.2, and C7.3, as discussed in the following section.

Criterion C 3.1: To what extent are all EIAs in the province supported by a strategic context provided for in an EMF/SEA?

This criterion applies to the specific case study, as well as the whole of South Africa.

As already highlighted, the Garden Route EMF (Earth-Inc, 2010) applied to the George Rex EIA process and decision-making. However, the EIA process was predominantly informed by the Knysna SDF (Knysna Municipality, 2017) and other strategic planning policies/plans that were listed and discussed in the specialist planning report (Vreken, 2021).[301] These included the NDP (National Planning Commission, 2012), the Provincial SDF (DEA&DP, 2014), and the Eden District Spatial Development Framework (2017).

Interviewee D5 confirmed that EMFs were not available for all areas in the Western Cape. Interviewee C3 confirmed that EMFs were not available for all areas in the country and that limited financial resources were allocated to conduct EMFs. The interviewee confirmed that the Garden Route EMF would not be updated as no resources were available in DFFE to do so. Interviewee D4 confirmed that the focus in DFFE shifted to SEAs for infrastructural development in selected sectors. Interviewees C3, D4, D5, E1, and E3 also confirmed that EMFs were not available in all areas in South Africa and that SEAs were only conducted for selected types of infrastructural development (being sector-focused rather than geographically focused).

In summary, and from a tiering perspective, a strategic assessment context in the form of the Garden Route EMF was available for the George Rex EIA process. In general, beyond the case study, strategic contexts in the form of SEAs of EMFs were not available across the country to inform all EIA applications.

Based on the above, this criterion was evaluated as not conformed to.

Criterion C4.1: To what extent were functional professionals and specialists involved in and supported the development of the EMF/SEA?

[301] Pages 38 and 43 of the specialist planning report (Vreken, 2021).

This criterion dealt with the extent to which specialists' information informed the Garden Route EMF process or any other strategic environmental context for the George Rex EIA process. Interviewees C3 and C4 confirmed that the Garden Route EMF made provision for a comprehensive list of independent specialists to be involved in all phases of the EMF process under the leadership of a lead consultant of the Earth-Inc, covering all the major specialist areas across the biophysical to the socio-economic spectrum. The collective use of the specialist information was used to guide project-level planning and assessments. Both Interviewee's C3 and C4 confirmed that the EMF provided relevant information to inform project-level decision-making. According to them, the EMF process benefitted from the GIS information that was made available by SANParks during the EMF process. The Garden Route EMF (Earth-Inc, 2010) and the BAR (Ebersohn, 2022) information confirmed that the George Rex site is located within the boundaries of a protected area, the Knysna National Lakes Area[302] – the documents confirmed that the majority of the property constituted a functional wetland (although the ecological status thereof was negatively impacted by past events such as the construction of George Rex Drive and the dumping of sawdust). All the major events that impacted the George Rex site (i.e., the dumping of sawdust, the WWTS, and other developments surrounding the site), were already present when the Garden Route EMF was completed (Earth-Inc, 2010).

The Knysna SDF (Knysna Municipality, 2017) included environmental considerations that provided some strategic environmental context. However, the SDF did not refer to the Garden Route EMF. According to the SDF, the property was located within the urban edge and earmarked for "new development" (Vreken, 2021).

Whilst the specialist inputs into the Garden Route EMF process covered all relevant functional areas,[303] the EMF has not been updated since its finalisation in 2010. Therefore, whilst the specialist inputs into the EMF process were effective in providing guidance to project-level EIA processes at the time the EMF was completed in 2010, it was doubtful if all the information in the EMF was still relevant, 12 years later (Interviewee C3). For example, according to Rountree and Scherman (2017), the ecological status of the wetland has deteriorated between 2006 and 2017. Interviewee C3 confirmed that during the EMF process, the specialist information was used to develop a "ranking system" that identified sensitivities for specific geographical areas. He also expressed the opinion that the George Rex site, being located within the Lakes Area, would have raised several concerns.

[302] Page 26 of the final BAR (Ebersohn, 2022)

[303] See Section B: Status Quo Assessment, of the Garden Route EMF (Earth-Inc, 2010).

In the absence of a current (updated) EMF, the most relevant information informing the George Rex EIA process about the strategic context was contained in the Knysna Municipal SDF (Knysna Municipal, 2017). For example, the latest systematic conservation planning information on critical biodiversity areas was included in the SDF.[304] According to the Knysna Municipal SDF, the George Rex property was located within the urban edge, indicating that it was earmarked for urban development in some form (Vreken, 2021).

In summary, from a tiered EA perspective, the Garden Route EMF provided adequate information to guide EIA processes. However, the EMF has not been updated since 2010, and some of its information was outdated and was not referred to in the EIA process. Based on the above, this criterion was evaluated as only partially conformed to.

Criterion C5.1: To what extent is the strategic environmental context the outcome of a credible, evidence-based environmental assessment or environmental planning process that considered all components of the environment?

This criterion dealt with the Garden Route EMF (Earth-Inc, 2010) and the extent to which it was the outcome of a credible, evidence-based EA or environmental planning process that considered all components of the environment.

Interviewees C3 and C4 argued that the EMF, at the time when it was drafted, was based on the technical/scientific inputs from various functional specialists (covering all components of the environment) and extensive spatial analysis. This included a stakeholder and public consultation process to identify issues and concerns and to determine the sensitivities in the study areas. According to Interviewee C4, the spatial analysis during the EMF process benefitted significantly from the involvement of the South African National Parks Board (SANParks) through the availability of their GIS specialists. This allowed for spatial analysis and guidance down to the property level.

The review of the Garden Route EMF information confirmed that various specialists were involved in the drafting of the EMF. Section B of the EMF: Status Quo Assessment covered all the relevant functional areas across the social, economic and biophysical spectrum. The development of the EMF included a comprehensive consultation process that included several public meetings, advertisements and providing opportunities for public input.[305] Therefore, the Garden Route EMF

[304] Figure 10 on page 17 of the Knysna SDF (Knysna Municipality, 2017).

[305] See Section A, page 54 of the Garden Route EMF (Earth-Inc, 2010)

(at the time when it was drafted) was the outcome of a credible, evidence-based, EA process that considered all components of the environment. The EMF process did not follow the typical SEA approach of scoping and assessment of impacts and focused more on based constraints and opportunity mapping (see discussion on EMFs in Chapter 4).

Interviewee C3 also emphasised that the EMF was a credible, evidence-based process that included authorities (including SANParks, Municipality of Knysna, and the provincial department responsible for environmental management), and that allowed for social, economic, and biophysical issues to be considered.

Interviewee C3 also highlighted that the scale of information was credible and that areas of contention (such as the urban edge and the edge of the wetland areas), were ground-truthed using an aerial inspection and in consultation with relevant persons from the Municipality, SANParks, CapeNature and the provincial department responsible for environmental management.

In summary, based on the interviews and analysis of the Garden Route EMF information, it can be concluded that the strategic context within which the George Rex EIA was located was the outcome of a credible, evidence-based EMF that considered all components of the environment.

Based on the above, this criterion was evaluated as conformed to.

Criterion C5.2: To what extent is the strategic environmental context current – i.e., has been compiled/updated within the last five years?

This criterion dealt with the Garden Route EMF (as a tiered EA outcome) and the extent to which it contained relevant and current information – i.e., it was compiled/updated within the last 5 years.[306]

Interviewee C4, Interviewee C3, and the review of the Garden Route EMF confirmed that the analysis was based on technical/scientific information over 12 years old (completed in 2010) and that the EMF has not been updated since. Interviewee C4 confirmed that the information at the time, was relevant and provided guidance to regulatory processes. While some of the information in the EMF may still be relevant, its outdated status renders it ineffective. Interviewee C4 stressed

[306] The reference to 5 years is linked to the review periods for the political cycles of 5 years and many strategic planning documents such as Municipal Spatial Development Frameworks or Medium-Term Planning Frameworks of government institutions, are linked to this 5-year planning periods.

that this was why the EMF was not used and why he did not raise the need to consider the EMF during the EIA process. It must be noted, however, that from a legal perspective, the Garden Route EMF, although outdated, still constituted an adopted EMF that must be considered during the EIA process.

Without an updated EMF, the municipal SDF was regarded as the relevant informant in the strategic context (including environmental considerations). Municipal SDFs were legally required to be updated every 5 years,[307] whereas no such legal requirement existed for EMFs.

The development of the SDF for Knysna also included a strategic environmental assessment that was conducted based on the requirement in the SPLUMA that a municipal SDF must "….*include a strategic assessment of the environmental pressures and opportunities within the municipal area, including the spatial location of environmental sensitivities, high potential agricultural land and coastal access strips, where applicable*".[308] Such an assessment was done as part of the Integrated Strategic Spatial Framework (ISDF) to inform the Knysna SDF process (Knysna Municipality, 2015). While the ISDF relied strongly on the Garden Route EMF, it was noted that the strategic environmental assessment was conducted on the 'natural environmental context',[309] as a sector input into the SDF. This constituted an indirect and relatively weak horizontal tiering link between the EMF and the SDF (i.e., only using the biophysical information contained in the EMF). From a perspective of tiering in EA, the above biophysical focus of the strategic environmental assessment and ISDF conducted as informants to the SDF process cannot be equated to an EMF process where the full scope of socio-ecological and socio-economic information (as per the requirements of the EMF Regulations[310]) are required in the formulation of and designation of environmental management zones during the EMF process.

In summary, the strategic environmental context (from a tiered EA perspective), in the Garden Route EMF, within which the George Rex EIA was located, was outdated.

Based on the above this criterion was evaluated as not conformed to.

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[307] In terms of the requirements of the Spatial Planning and Land Use Act, 2013 (Act No. 16 of 2013) (South Africa, 2013)

[308] Section 21(j) of the SPLUMA (South Africa, 2013).

[309] The full title of the report was "Integrated Spatial Development Framework: Strategic Environmental Assessment: Natural Environmental Context (draft)" (Knysna Municipality, 2015).

[310] Regulation 4 of the EMF Regulations (South Africa, 2010).

Criterion C5.3: To what extent is the strategic environmental context the outcome of a consultative environmental assessment or environmental planning process?

This criterion dealt with the Garden Route EMF and the extent to which EMF created a strategic context that was the outcome of a consultative EA or environmental planning process. Interviewees C3 and C4, and the review of the Garden Route EMF documentation confirmed that the EMF process included a comprehensive consultation process with various role players (Earth-Inc, 2017).[311] This included public open days (public meetings) and press notifications during the EMF process. Interviewees C3 and C4 also confirmed that all three spheres of government were represented on a Steering Committee that was established for the EMF process. Interviewee C3 especially considered the interaction between the different authorities as a valuable outcome of the EMF process.

The public consultation process was regarded as effective by Interviewees C3 and C4, but it must be acknowledged that the purpose of public consultation at this strategic level (covering several towns) was not (and could not reasonably be expected to) reach and engage with all individual landowners.

In summary, the Garden Route EMF as the strategic context for the project-level EIA was the outcome of a comprehensive, consultative, strategic-level EA process.

This criterion was evaluated as conformed to.

Criterion C6.1: To what extent is the strategic environmental context used by the applicant, EAP, and specialists (i.e., the project team)?

Interviewee C2 confirmed reliance on the specialist town planning report to consider relevant information to inform the strategic context for the EIA process. This reliance on the specialist to consider the strategic context meant that the EAP did not use the EMF to guide the information requirements of the EIA process, including the scoping of issues, and identification of alternatives. In reviewing the specialist report (Vreken, 2021), no reference was made to the EMF. Interviewee C2 confirmed being aware of the EMF, although no reference was made to the EMF in the final BAR. This omission was inconsistent with the legal requirement that EMFs must be considered in decision-making.[312] Both the town planning specialist and Interviewee C2 relied on the strategic

[311] Paragraph 4, page 54 of the Section A of the Garden Route EMF (Earth-In, 2010).

[312] Regulation 2(1) of the 2010 EMF Regulations. Even if outdated, the EMF must still be considered in decision-making (South Africa, 2010).

context provided by the Knysna SDF, especially the inclusion of the development site within the urban edge and the designation thereof for "new development" (Vreken, 2021).[313] Therefore, vertical tiering between the EMF and the EIA failed, but the strategic context in the Knysna SDF influenced the EIA process through diagonal tiering.

In summary, and from an EA perspective, vertical tiering failed, as the Garden Route EMF did not play a role in directly informing the views expressed by any of the stakeholders on the George Rex Development, during the EIA process. The Knysna SDF influenced the EIA process through diagonal tiering. Although some stakeholders did not support the proposed development,[314] they did not use the EMF to support their views. Not considering the EMF in decision-making was inconsistent with the legal requirement in the NEMA and the EIA Regulations.

Based on the above, this criterion was evaluated as not conformed to.

Criterion C6.2: To what extent, with regard to the EIA process, is the strategic environmental context in the EMF/SEA supported by the other relevant stakeholder groupings across different sectors?

Interviewee C2 confirmed that apart from SANParks, DFFE, and DEA&DP, the other stakeholders were unaware of Garden Route EMF. None of the comments received during the EIA process referred to the Garden Route EMF. This included DEA&DP and SANParks, and more importantly, DFFE as the decision-maker and the authority responsible for the commissioning of the EMF (Ebersohn, 2022).[315] What was surprising was that the specific officials in DEA&DP, SANParks, and DFFE who were involved in the drafting of the Garden Route EMF were also involved in the George Rex EIA process, yet none of them raised the EMF in their comments. Interviewee C2 confirmed that the interested and affected parties, and the specialists, were not informed of the existence of the EMF, and that the decision-making authority also did not require the EAP (Interviewee C2) to consider the EMF.[316]

Interviewee C2 also stated that she primarily considered site-specific information submitted by the specialists in drafting the final Basic Assessment report. Reliance was put on the town

[313] Pages 42, 43 and 44 of the specialist planning report (Vreken, 2021).

[314] Appendix J (comments and response report) to the final BAR (Ebersohn, 2022).

[315] Appendix J to the final BAR (Ebersohn, 2022).

[316] The information in Appendix J includes the letters from the decision-making authority and none of these letters refer to the requirement to consider the EMF (Ebersohn, 2022).

planning specialist to consider strategic informants, rather than making the specialist aware of the EMF's existence and the EAP using the EMF information to inform the information requirements of the EIA process (consistent with the purpose of EMFs).

The EMF highlighted some sensitivities of the George Rex site but did not explicitly exclude the development of the site. The Knysna Municipality indirectly used the biophysical information in the EMF when drafting the SDF (Knysna Municipality, 2015), but still included it within the urban edge and earmarked it for some form of development. SANParks, as the conservation authority, supported the development (Interviewee C2). By implication, they indirectly supported the strategic environmental context of the SDF, which included the George Rex site within the urban edge and earmarked it for development.

In summary, no clear statement or non-support for the strategic context as created by the EMF, was voiced by other sector stakeholders. Also, they were not made aware by the EAP of the existence of the EMF. The negative comments submitted by some of the interested and affected parties during the EIA process were local, site-specific concerns. Regarding tiering in EA, the public indicated no awareness of the EMF or attached no value to it, even if they were aware thereof.

Based on the above, this criterion was evaluated as partially conformed to.

Criterion C7.1: To what extent is the EMF/SEA considered in, and consistent with the SDF?

The Knysna SDF 2017 process considered similar (but updated versions) baseline environmental information as was considered in the EMF process (e.g., conservation planning data, SANParks sensitivity mapping, etc.).[317] The Knysna SDF was informed by an Integrated Strategic Development Framework: Strategic Environmental Assessment: Natural Environmental Context (draft) (Knysna ISDF SEA) (Knysna Municipality, 2015).[318] The Knysna ISDF-SEA, in turn, extensively relied on the information of the Garden Route EMF. However, the Knysna SDF 2017 did not refer to the Garden Route EMF. Therefore, through relatively weak horizontal tiering, the Garden Route EMF indirectly influenced the strategic context applicable to the EIA process.

[317] Reference to the CBA base maps and SANPark's information is made throughout the SDF (Knysna Municipality, 2017).

[318] There is no record that the ISDF was adopted by the Knysna Municipal Council (pers comm. Allan Rhodes) (Rhodes, 2023).

Interestingly, the ISDF-SEA stated: "[t]*he ISDF document can be seen as the 'Executive Summary' of the SEA. Furthermore, it is proposed that the ISDF be seen as an Environmental Management Framework (EMF) as defined under NEMA and therefore can be promoted as grounded within legislation.*" (Knysna Municipality, 2015:5). However, the development and adoption of an EMF was a provincial/national legal mandate[319] and the intention as expressed in the Knysna ISDF: SEA could not be realised by the Municipality. The Municipality also never contacted DEA&DP to pursue the stated proposal.

Interviewee C3 also highlighted that during the drafting of the Garden Route EMF, the Municipal SDF was considered, but the SDF at the time did not consider the EMF. According to Interviewee C3, the SDF was considered a "given", hence the EMF was aligned with the SDF.

In summary, the Knysna SDF 2017 was indirectly informed by the Garden Route EMF through the information contained in the Knysna ISDF: SEA. Therefore, a relatively weak level of horizontal tiering existed between the EMF and SDF.

Based on the above, this criterion was evaluated as conformed to.

Criterion C7.2: To what extent is the strategic environmental assessment and planning context informed by policy/legislation inputs (vertical tiers) where applicable?

The strategic planning and policy context applicable to the George Rex site consisted of the following:

In 2012 South Africa's National Development Plan 2030 (NDP) was formally adopted by the Cabinet, setting objectives and targets to eliminate the country's poverty and reduce inequality by 2030 (National Planning Commission, 2012). The NDP provided a broad strategic framework that comprised six focused, interlinked priorities:

- Building Safer Communities;
- Environmental Sustainability;
- Faster and inclusive economic, rural and urban economic growth;
- Economic infrastructure;

[319] Regulation 2 and 3 of the EMF Regulations (South Africa, 2010)

- Promoting Health; and
- Transforming human settlements and urban space economy.

The NDP was a strategic policy document that did not contain information specific to the development site, but the principles provided strategic guidance for the George Rex development. The EIA documentation, specifically the specialist town planning report (Vreken, 2021), reflected on the consistency of the George Rex development proposal with the NDP.[320] This was related to economic investment, job creation, infrastructural development, spatial transformation, and environmental resilience (i.e., optimising resources and space).

In addition, the Western Cape Provincial Spatial Development Framework, 2014 (PSDF) (DEA&DP, 2014) was relevant for the George Rex development, providing a strategic spatial land use planning policy that aimed to promote:

- Greater productivity, competitiveness, and opportunities within the spatial economy;
- More inclusive development in the urban areas; and
- Strengthening resilience and sustainable development.

As with the NDP, the PSDF gave strategic spatial policy direction but did not include information directly applicable to the George Rex Development site. The PSDF provided strategic guidance for developing the Municipal Spatial Development Frameworks (SDFs). According to the EIA documentation, specifically the specialist town planning report (Vreken, 2021), George Rex's development proposal was broadly consistent with the policy direction provided by the PSDF. [321]

The Eden District Spatial Development Framework (2017): The Eden District SDF was approved by the municipal council in 2017 and aimed to sustainably grow the district's economy. The contents (level of planning detail) of the plan were relevant to the George Rex development proposal, specifically referring to the Knysna Lagoon/Estuary from both a conservation and recreational perspective. The specialist planning Report also promoted the proposed George Rex development within the guidance provided by the District SDF (Vreken, 2021).[322]

The Knysna Spatial Development Framework 2017 (Knysna Municipality, 2017): The Knysna SDF constituted the relevant spatial (land use) planning policy that provided a spatial vision for

[320] Pages 34 and 35 of the specialist planning report (Vreken, 2021).

[321] Pages 39 and 40 of the specialist planning report (Vreken, 2021).

[322] Pages 40 and 41 of the specialist planning report (Vreken, 2021).

the Knysna municipal area within which the proposed George Rex development was located. According to the Knysna SDF, the George Rex site was located within the urban edge of Knysna, and the area within which the George Rex site was located was designated suitable for 'New Development' (Vreken 2021).[323] The Garden Route EMF information was used to compile a strategic plan (Knysna Municipality, 2015)[324] as an informant to the Knysna SDF 2017. As such the Garden Route EMF indirectly influenced the SDF. The specialist planning report that was part of the EIA process, motivated the George Rex development to be consistent with the Knysna SDF - i.e., being a novel development proposal that would increase employment, business, and housing opportunities, would constitute the efficient use of services, was regarded as an 'infill' development that utilised vacant land within the urban edge (Vreken, 2021).[325]

The Garden Route Environmental Management Framework (2010): The Garden Route EMF, compiled by Earth-Inc Environmental and Development Consultants, was finalised in November 2010 (Earth Inc, 2010).[326] The Garden Route EMF provided a relevant strategic context for the site, at a scale consistent with the Knysna SDF at the time it was completed. However, the EMF was compiled in 2010 and has not been reviewed subsequently. In terms of accessibility of the EMF information to inform EIA processes, it must be noted that the electronic version of the EMF that was available on the DFFE website, did not include all the relevant maps.

A clear strategic policy and spatial and use planning context was available to inform the George Rex development proposal. However, from a strategic environmental perspective, the Garden Route EMF was outdated and the maps relevant to the EMF were not readily available as part of the electronic version on the DFFE website. This lack of accessibility meant that the full EMF (including relevant maps), as a key informant for the strategic environmental context was not readily available to stakeholders.

The policies and legislation that informed the drafting of the Garden Route EMF were documented in the EMF (Interviewees C3 and C4, and Earth-Inc, 2010).[327] Although the EMF Regulations were not promulgated at the time the Garden Route EMF was concluded in 2010, the EMF was drafted consistent with the draft law reform proposals that existed at the time, as

[323] Pages 39 and 41 of the specialist planning report (Vreken, 2021).

[324] An Integrated Strategic Development Framework was compiled that informed the SDF adopted by the Municipality. There are no records that the ISDF was adopted by the Knysna Municipal Council (pers comm. Allan Rhodes) (Rhodes, 2023).

[325] Pages 42, 43 and 44 of the specialist planning report (Vreken, 2021).

[326] The Garden Route EMF was adopted in 2011 - published in Government Gazette 34719, Government Notice 907, dated 4 November 2011.

[327] The Garden Route EMF was finalised in January 2010 (Earth-Inc 2010) and the EMF Regulations were published June 2010 (South Africa, 2010).

well as the enabling provisions contained in the NEMA.[328] When the adoption of the EMF was finally gazetted, it was done in terms of both the NEMA and the EMF Regulations (South Africa, 2010).[329] The EMF Regulations were gazetted shortly after the Garden Route EMF was finalised. The Garden Route EMF included an extensive discussion on the legislative and policy context as informants to the EMF process.[330]

According to Interviewee C3, a specific focus at the time when drafting the Garden Route EMF, the various authorities were consulted to ensure that their decision-making requirements were addressed in the information included in the EMF.[331]

In summary, the strategic environmental context was well-informed by policy/legislation inputs, indicating vertical tiering between the legislation, policy, strategic assessment, and project-level assessment.

Based on the above, this criterion was evaluated as conformed to.

Criterion C7.3: To what extent is the strategic environmental context provided in the EMF/SEA, informed by other sector strategic planning inputs (horizontal/diagonal tiering)?

Interviewee C4 indicated that in drafting the Garden Route EMF, the Integrated Development Plans and their associated SDFs of the relevant Municipalities (the EMF transcended the boundaries of a number of Municipalities) were considered. Interviewee C4 also stated that various sector strategies were considered and was particularly appreciative of the cooperation with SANParks the national conservation agency responsible for the management of the National Lakes Area) and their GIS data that contributed to the ability of the EMF to provide erf-level (property-level) guidance. Interviewee C3 corroborated this.

Reviewing the EMF information confirmed that inputs from different sectors were considered by the various specialist inputs during the EMF process (considering various datasets at regional and national levels, legislation, policies/strategies, and guidelines):[332]

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[328] See section A, pages 4-8 of the EMF (Earth-Inc, 2010) and its reference to section 24 of the NEMA (South Africa, 1998a).

[329] The adoption of the Garden Route EMF published in Government Gazette 34719, GN 905, dated 4 November 2011.

[330] Section A, chapter 3, pages 23-53 of the EMF (Earth-Inc, 2010).

[331] See Section A, Chapter 4 on public participation (Earth-Inc, 2010)

[332] Section A: Status Quo Report contains various specialist studies that reference policies, legislation and various datasets used in the EMF process (Earth-Inc, 2010).

- Biodiversity – (SANBI, 2014; Mucina & Rutherford 2006; Vlok & Euston-Brown,2008).
- Agriculture – (Laker 2002; Schafer & Robertson 2004).
- Heritage and Landscapes – (Oberholzer, 2005; DEA&DP, 2005)
- Socio-economic (planning) considerations included:
    - Provincial policies – Western Cape Provincial Spatial Development Framework (DEA&DP 2005)
    - Local/municipal context –Knysna State of the Environment Report (SoER) (Knysna Municipality, 2005) and the Knysna Spatial Development Framework (Knysna Municipality, 2007).

The above constituted vertical and horizontal tiered information across different functional areas (including environmental, agriculture, heritage, and human settlement) that informed the EMF process.

In summary and from a tiering perspective, the Garden Route EMF was informed by a comprehensive set of legislation, policies, and plans that included vertical and horizontal tiers of information across different functional areas.

Based on the above, this criterion was evaluated as conformed to.

8.3.3 The Activity ToC Component

The criteria developed to evaluate the assumptions related to the ToC's Activity Component were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criteria C8.1, C8.2, C8.3, C8.4, C8.5, and C8.6, as discussed in the following section.

Criterion C8.1: Are the key role-players made aware of the existence of the EMF/SEA and the role thereof?

Although Interviewee C2 indicated awareness of the Garden Route EMF, the BAR (Ebersohn, 2022) did not reference the EMF. The report by the town planning specialist, as the key informant of the strategic context for the George Rex Development during the EIA process, did not refer to the EMF (Vreken, 2021). Interviewee C4 was involved in the EMF process (in 2009-2010) and

the EIA process. However, the interviewee did not convey this information during the EIA process.

Interviewee C2 confirmed that the applicant, specialist, and interested and affected parties were not made aware of the existence of the EMF. The inputs received from stakeholders during the EIA process did not refer to the EMF. Importantly, DFFE as the decision-making authority also did not inform the applicant and EAP of the existence of the EMF and the need to consider its information (Ebersohn, 2022).[333]

The comments from the authorities that were involved in the development of the EMF in 2010, did not refer to the Garden Route EMF in the comments they provided during the EIA process (Ebersohn, 2022).[334] This was particularly noteworthy as the officials from DFFE, DEA&DP and SANParks involved in the EIA process were also involved in the EMF process in 2010.

Neither the EIA decisions (refusals) issued by the decision-making authority on the first and the second application nor the appeal decisions on the first and the second EIA decisions referred to the strategic environmental context represented by the EMFs or the SDF.

As already highlighted, from a regulatory perspective, the lack of consideration of the information contained in an adopted EMF during decision-making constituted a fundamental error and non-compliance with the legal requirement that adopted EMFs must be considered during decision-making.[335]

In summary, the stakeholders that participated in the George Rex EIA were not aware of the existence of the Garden Route EMF. If they knew about the EMF, they did not convey this in their inputs during the EIA process. This included the applicant, the EAP, and the decision-making authority. Legally, this constituted an oversight. From a tiering perspective, this constituted a failure of vertical tiering in EA.

Based on the above, this criterion was evaluated as not conformed to.

[333] Appendix J to the final BAR (Ebersohn, 2022).

[334] Appendix J to the final BAR (Ebersohn, 2022).

[335] Regulation 2(1) of the 2010 EMF Regulations. Even if outdated, the EMF must still be considered in decision-making (South Africa, 2010).

Criterion C8.2: To what extent is there clear evidence in EIA documentation that the strategic environmental context was considered at project-level assessments?

The BAR (Ebersohn, 2022) contained no reference to the EMF, including the 'Need and Desirability' section of the BAR that specifically requires strategies policy and planning informants to be considered in evaluating 'need and desirability'. In terms of the EIA Regulations (South Africa, 2014a),[336] when considering an application, the decision-making authority must consider, *inter alia*, the need for and desirability of the development.[337] A key component of 'need and desirability' was the requirement to consider the strategic-level information (including SEAs, EMFs, and SDFs) in discussing 'need and desirability'. It must be noted, however, that the tiering of information relevant to the EIA process, was not contained in a single, tiered EA document such as the Garden Route EMF. The tiering of information was evident in the different specialist reports, particularly biodiversity and land use planning (i.e., tiering happened in the different planning levels in the functional areas of biodiversity and land use planning). However, the EMF pulls all these functional-specific inputs into an integrated, single deliverable.

Although the final BAR specifically noted the importance of considering EMFs (quoting from the 'Need and Desirability Guideline' (DEA, 2017c)[338] in discussing 'need and desirability', the BAR did not refer to the Garden Route EMF. The Knysna SDF (Knysna Municipality, 2017) and other strategic-level information relevant to the land use planning sector,[339] were, however, extensively used in the discussion on 'need and desirability' in the BAR.

In addressing 'need and desirability', the final BAR dealt with all the questions/criteria posed by the 'Need and Desirability Guideline' (DEA, 2017c), which included clear guidance that EMFs should be considered. In discussion 'need and desirability' the BAR quoted the statement in the Knysna ISDF-SEA that *"…..it is proposed that the ISDF be seen as an Environmental Management Framework (EMF) as defined under NEMA and therefore can be promoted as grounded within legislation"* (Knysna Municipality, 2015:7). Apart from the above statement (which had no legal effect as the ISDF did not meet the legal requirements of the EMF Regulations to be considered as an EMF, and was never adopted as such), no reference was made to the EMF in the EIA documentation, including the BAR (Ebersohn, 2022).

[336] Regulations appendix 1 (3) (f), appendix 2 (2) (f), appendix 3(f) of Government Notice No. R. 982 of 04 December 2014 refers (South Africa, 2014a).

[337] Regulation 18 of Government Notice No. R. 982 of 04 December 2014 refers (South Africa, 2014a).

[338] See page 39 (section on need and desirability) of the final BAR (Ebersohn, 2022).

[339] See pages 37 – 44 of the final BAR (Ebersohn, 2022).

In summary, from an EA tiering perspective, vertical tiering in the George Rex failed. However, different tiers of information available within various functional areas of environmental management were considered. Therefore, while vertical tiering in EA failed, the strategic environmental context was considered during the EIA process based on the strength of tiering in other functional areas (i.e., diagonal tiering between the SDF and EIA, as well as between the functional-specific planning outputs and the EIA).

Based on the above, this criterion was evaluated as partially conformed to.

Criterion C8.3: To what extent did the EMF/SEA influence the scope of alternatives considered in the EIA process?

The Garden Route EMF did not influence the selection of alternatives. Rather, alternatives were identified based on an iterative consultation with stakeholders and primarily informed by specialist inputs (Interviewee C2).

The review of the George Rex EIA documentation, specifically the BAR, found that alternatives were primarily focused on urban development and were strongly influenced by the Knysna SDF (Knysna Municipality, 2015). According to the Knysna SDF, the George Rex site was located within the urban edge of the Knysna. As such, the identified alternatives primarily focused on urban development, although the scale of development was reduced through an iterative consultation process with stakeholders and informed by specialist inputs.

The review of the George Rex EIA documentation showed that the second application presented the same type and scale of development that was refused based on the first application. The lack of identification of additional alternatives during the second application was based on the appeal decision on the first application which, did not raise any concerns regarding alternatives but was primarily founded on procedural issues. The appeal decision provided an opportunity for resubmission of the same application, by concluding that: "[t]*he matter is accordingly remitted to the Department to allow for the further consultation and reconsideration of the application*" (Minister: FFE 2020:9).[340] The second application was again refused and one of the reasons was that the applicant did not adequately present alternatives. This second decision was also appealed. The second appeal decision upheld the grounds of appeal related to alternatives and requested the applicant to provide additional specialist information in support of the alternatives presented. The appeal decision "….[*d*]*ismiss the grounds of appeal relating to the assessment*

[340] Paragraph 3.3 (Page 9) of the first appeal decision on the first refusal decision (Minister: FFE, 2020).

of alternatives…..[s]*et aside the refusal decision issued….and* [r]*emit the EA* [environmental authorisation] *application to the CA* [decision-making authority] *for further consultation and reconsideration*" (Minister: FFE, 2023:9).[341] Part of the challenge of this case study is the lack of clarity of the relationship between the first and the second application (i.e. the tiering relationship between the information contained in the first and second application and this influenced how alternatives were presented and evaluated). The EAP regarded the information in the first application to be relevant to the second application, whereas the decision-making considered the second application *de novo*. The EAP and the decision-making authority should have clarified the tiering relationship between applications.

In summary, from a tiering in EA perspective, the EMF failed to inform the identification of alternatives. However, the strategic context in the SDF did influence the alternative selected during the EIA process (i.e., through diagonal tiering between the SDF and the EIA). The decision-making history also reflects that the tiering relationship between the first and second applications was not adequately clarified.

This criterion was evaluated as partially conformed to.

Criterion C8.4: To what extent did the EMF/SEA influence the application of the impact mitigation hierarchy in the EIA process?

Interviewee C2 argued that the Garden Route EMF did not affect the application of the impact mitigation hierarchy in the EIA process. The mitigation of impacts was based on site-specific information, which included improving the wetland functioning and water quality from the adjacent wastewater treatment works into the Knysna Estuary. These impacts were due to the past development of George Rex Drive and activities such as dumping sawdust in the site, interrupting the intertidal connection between the site and the estuary.[342] The application of the impact mitigation hierarchy was based on all the impacts and mitigation actions that were identified through the EIA specialist reports. The information contained in the EMF did not influence the identification of mitigation measures. The strategic context provided by the SDF (Knysna Municipality, 2017), insofar as determining the George Rex site to be within the urban edge, did

[341] Paragraph 3.3 (Page 37) of the second appeal decision on the second refusal decision (Minister: FFE, 2023)

[342] The infilling of the wetland and the disruption of intertidal interaction between the site wetlands and the estuary was also referred to in the EMF (Status Quo assessment, page 43) (Earth-Inc, 2010).

influence the EIA process, although this fact was not used to evaluate the significance of impacts (i.e. applying the impact mitigation hierarchy).

Interviewee C3 indicated that the notion of the Impact Mitigation Hierarchy did not exist at the time the EMF was compiled (or if it did, it was not mainstreamed). However, the information in the EMF can be used to address the avoidance of impacts and the mitigation thereof. However, the EMF was ignored and the information contained in the SDF was not effectively used (i.e. reasoning provided) by the EAP to evaluate the impacts.

In summary, although the impact mitigation hierarchy was applied based on the use of EIA information, the strategic environmental context did not influence the application of the impact mitigation hierarchy.

This criterion was evaluated as partially conformed to.

Criterion C8.5: To what extent are there contested views /interpretations on the applicability of the strategic context on the EIA/project?

Based on the negative comments received during the EIA process, it was clear that some of the interested and affected parties did not support the development proposal (Interviewee C2). Interviewee C2 argued that these negative views were based on the site-specific EIA information and did not rely on the strategic context of the SDF (Knysna Municipality, 2017) to justify their views (referring to the inclusion of the site within the urban edge in the SDF). However, neither Interviewee C2 nor the stakeholders referred to the EMF. The fact that the stakeholder was not informed about the EMF meant that its knowledge brokerage role was lost.

Interviewee C3 was involved in drafting the Garden Route EMF and participated in the George Rex EIA process. When questioned on the relevance of the EMF to the IEA process the interviewee indicated that the EMF raised some concerns, but did not elaborate further – the interviewee did not support the development of the site. However, the interviewee did not convey the EMF information during the EIA process, and no proof of any negative comments from Interviewee C3 during the EIA process was found in the EIA documentation.

Reviewing the comments received from stakeholders during the EIA process confirmed that the negative views expressed by neighbouring landowners were based on site-specific concerns

(Ebersohn, 2022).[343] Also, the refusal decision issued by DFFE did not refer to the EMF or the strategic context as part of the key factors influencing the decision (DFFE, 2022). From a tiering perspective, the reasoning for the EIA decision (refusal) did not reflect the link between the EMF and the EIA.

As noted, the site was located within the urban edge, designated for 'new development' (Vreken 2021). The development proposal indicated that 60% of the site was recommended for conservation in the final BAR (Ebersohn, 2022). Still, several stakeholders did not support the development of the remaining 40% of the site. DFFE did not support the development proposal and issued a refusal decision (DFFE, 2022), but the strategic context as presented in the EMF and SDF was not used in the reasoning presented in the decisions. Therefore, although not based on the EMF, but on the SDF, there were contested views on the strategic context for the site. The diagonal tiering (and the possible knowledge brokerage role it could play) between the SDF and the EIA also did not change perceptions about the development. It could also be argued that the strategic context provided by the SDF did not prevent the NIMBI attitude from emerging from the EIA process.

In summary, there were contested views regarding the strategic context of the site. The EAP supported the development based on the strategic context provided by the Knysna SDF 2017 but the interested and affected parties and the decision-making authority did not support the development based on the site-specific information contained in the EIA. The objections against the development did not rely on the strategic context in expressing these objections. Vertical tiering in EA failed to inform stakeholders due to a lack of awareness of the Garden Route EMF, or if they were aware of the EMF, they did not consider it relevant.

Based on the above this criterion was evaluated as not conformed to.

Criterion C8.6: To what extent is there clear evidence in EIA decisions (environmental authorisations and appeal decisions) that the strategic environmental context was considered?

The legal requirement to consider 'need and desirability' was specifically aimed at focusing attention on the strategic context during EIA processes and decision-making (DEA, 2017c).[344] However, neither the EIA decision (environmental refusal) issued by DFFE on the first application (DFFE, 2020), nor the EIA decision (also a refusal) issued in terms of the second application

[343] Section H of the final BAR and Appendix J of the final BAR (Ebersohn, 2022)

[344] Regulation 2, 3, Appendix 2 and Appendix 3 of the EIA Regulations, 2014

(DFFE, 2022), referred to the Garden Route EMF, or the Knysna SDF 2017. Both decisions were void of any discussion on 'need and desirability'. Neither the appeal decision (Minister: FFE, 2020) on the first application nor the second appeal decision (Minister: FFE, 2023) referred to the strategic environmental context.[345]

In summary, neither the information in the environmental refusal decisions and the appeal decision on the first application nor the information contained in the second EIA decision (refusal), considered the strategic environmental context. Although inconsistent with the requirement of 'need and desirability', the strategic environmental context played no role in decision-making. Vertical tiering in EA failed as it did not influence decision-making.

Based on the above, this criterion was evaluated as not conformed to.

8.3.4 The Output ToC Component

The criteria developed to evaluate the assumptions related to the Activity ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criterion C9.1, as discussed in the following section.

Criterion C9.1: To what extent does the EIA decision align and give effect to the strategic environmental planning context (i.e., the EMF/SEA) and was it well motivated?

Interviewee C2 stated that the DFFE decision to refuse the application for environmental authorisation was based on the project-specific EIA information in the BA Report, not the EMF. The refusal issued by DFFE (DFFE, 2022) did not refer to the strategic context for the site provided by the EMF or the SDF.

The legal requirement to consider 'need and desirability' provided a clear link between the EIA and the strategic context within which the development proposal was located. In the 'Guideline on Need and Desirability' (DEA, 2017c), specific questions were posed to consider the link between the development proposal and the EMF and SDF. Therefore, the Garden Route EMF

[345] The second appeal decision did however uphold the grounds of appeal that the refusal decision referred to impacts on small-scale fisheries (as a strategic concern), as a typo (i.e., impact on small-scale fisheries is not a relevant issue to be considered).

(Earth-Inc, 2010) and the Knysna SDF (Knysna Municipality, 2017) provided the context for considering the 'need and desirability' of the proposed George Rex development.

The Garden Route EMF raises several sensitivities related to the site, but also acknowledges and maps it as a disturbed area.[346] The EMF did not specifically exclude the development of the site. The EMF maps indicated that the site partially contained natural vegetation (Earth-Inc, 2010),[347] which coincides with the area the site development plan for the George Rex development proposed for protection (Ebersohn, 2022). According to Interviewee C3, the location of the George Rex site on the edge of the Knysna Estuary certainly raises some "red flags". Interviewee C3 was not in support of the development of the site (although this view was not expressed as part of the EIA documentation).

The Knysna SDF (Knysna Municipality, 2017) supported the development of the site by including it within the urban edge and earmarking it for 'new development'. The specialist town planning report (Vreken, 2021) extensively discussed the strategic land use planning context and recommended that the proposed George Rex Development was consistent with the land use context provided by the Knysna SDF (Knysna Municipality, 2017). The development proposal contained in the BAR was consistent with the specialist's recommendation. As such, diagonal tiering between the SDF and the EIA significantly influenced the EIA process.

The decision on the George Rex application did not engage the 'need and desirability'. The one strategic issue that was included in the decision stated that "…*the potential impacts on the environment as well as the socio-economic conditions could not be evaluated (particularly insofar as small-scale Fisheries are concerned), especially because of the lack of a proper underwater noise impact study*…." (DFFE, 2022:12)[348]. Although a strategic issue, "small-scale fisheries" was neither mentioned in any document in the final BAR nor raised by any interested and affected party. The inclusion of this issue in the refusal decision is an unfortunate mistake that was acknowledged as such in the second appeal decision "[*u*]*phold the appellant's ground of appeal relating to …..small-scale fisheries and underwater noise*" (Minister: FFE, 2023:37).[349]

In summary, the EIA decision did not provide any reasoning for how the decision-making authority considered the strategic environmental context, meaning that vertical tiering in EA failed in this

[346] Figure 12a and 12b of the Garden Route EMF (Earth-Inc, 2010).

[347] Figure 12 of the Garden Route EMF (Earth-Inc, 2010).

[348] Page 12 of the refusal decision issued by DFFE (DFFE, 2022).

[349] Page 37 of the appeal decision (Minister: FFE, 2023).

regard. Through diagonal tiering, the strategic context in the SDF influenced the EIA process outcome.

This criterion was evaluated as not conformed to.

8.3.5 The Immediate Outcome ToC Component

The criteria developed to evaluate the assumptions related to the Immediate Outcome ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criteria C10.1, C11.1, and C11.2, as discussed in the following section.

Criterion C10.1: To what extent does the strategic environmental context (i.e., EMF/SEA) provide clear guidance on what constitutes appropriate and inappropriate types and scale of development and land use to promote sustainable development outcomes at project-level assessment?

The information in the Garden Route EMF was at an adequate scale to guide project-level applications, especially in urban areas (Interviewees C3 and C4). According to Interviewee C3, this was intended by the chapter on the 'desired state of the environment' and how information was presented in the EMF narrative. However, this EMF chapter did not provide detailed guidance on appropriate development. Interviewee C4 believed that the EMF provided adequate guidance on the appropriate types of development in different geographical areas consistent with their sensitivities, but that it required the user to apply his/her mind to the applicability thereof in EIA processes. Both interviewees confirmed that the information contained in the EMF was outdated, especially around urban areas. The review of the EMF information confirmed that the maps, combined with the EMF narrative' did not provide detailed information down to the property level (although it did provide strategic-level guidance to EIA processes). More importantly, the EMF information has not been updated and although some information was still relevant, most of the information was (considered to be) outdated.

Interviewee C2 confirmed that inputs related to the strategic context of the EIA process were provided through the specialist town planning report (Vreken, 2021). The specialist town planning report did not consider the Garden Route EMF. The primary information used by the specialist was the tiered spatial land use planning frameworks – i.e., the National Development Plan 2030 (National Planning Commission, 2012), the Provincial Spatial Development Framework

(DEA&DP, 2014), the District Spatial Development Framework and the Municipal Spatial Development Framework (Knysna Municipality, 2015; 2017).

The town planning specialist concluded that the development as proposed in the application, was consistent with the land use planning context. In particular, the specialist report found the site to be located within the urban edge proposed in the Knysna SDF, and earmarked for 'new development' (Vreken, 2021). The specialist report did not make any reference to the environmental informants to the strategic context, such as the conservation status of the site falling within the boundaries of a National Protected Area (i.e., the Knysna National Lakes Area)[350] and that the site was classified as a wetland in the National Freshwater Ecosystem Priority Areas database (Nel *et. al.,* 2011).

With regards to tiering in land use planning, the Knysna SDF was informed by an Integrated Strategic Development Framework: Strategic Environmental Assessment: Natural Environmental Context (draft) (Knysna ISDF - SEA) (Knysna Municipality, 2015).[351] The Knysna ISDF-SEA in turn, extensively relied on the information of the Garden Route EMF. However, no reference was made to the EMF in the Knysna SDF (Knysna Municipality, 2017). Therefore, through relatively weak horizontal tiering, the Garden Route EMF indirectly influenced the strategic land use planning context of the SDF applicable to the EIA process. The primary consideration of the strategic context for the George Rex site took place through diagonal tiering between the Knysna SDF and the George Rex EIA process.

The Garden Route EMF acknowledged the historical impacts caused by dumping sawdust and the construction of the George Rex Drive. The EMF mapped the George Rex site as a disturbed area.[352] The EMF only mapped sensitive attributes of the site, but did not specifically exclude the development of the site. The part of the site that contains natural vegetation according to the EMF maps (Earth-Inc, 2010)[353] was located in the area that was proposed for protection in the George Rex development (Ebersohn, 2022).

In summary, through diagonal tiering, the Knysna SDF (Knysna Municipality, 2017) was the primary informant in creating the strategic environmental context. The Garden Route EMF indirectly informed the Knysna SDF via the information in the Knysna ISDF- SEA (Knysna Municipality, 2015). Therefore, the extent to which strategic environmental context contained in

[350] Confirmed on page 26 of the final BAR (and why DFFE is the content authority) (Ebersohn, 2022)

[351] There is no record that the ISDF was adopted by the Knysna Municipal Council (pers comm. Allan Rhodes) (Rhodes, 2023).

[352] Figure 12a and 12b of the Garden Route EMF (Earth-Inc, 2010).

[353] Figure 12 of the Garden Route EMF (Earth-Inc, 2010).

the EMF indirectly provided guidance on what constitutes appropriate and inappropriate types and scales of development, through weak horizontal tiering between the EMF and the SDF. The Garden Route EMF mapped some site sensitivities for the George Rex site, but did not specifically exclude the development of the site.

This criterion was evaluated as partially conformed to.

Criterion C11.1: To what extent do key role-players, in evaluating the sustainability of project-level EIAs and decisions, attach value to the alignment thereof with the strategic environmental context (i.e., did they regard alignment with the strategic context as representing a sustainable outcome)?

Interviewee C2 confirmed that BAR was based on the specialist information generated during the EIA process (which was predominantly site-specific) (Ebersohn, 2022). The interviewee also confirmed that the strategic context was discussed as part of the specialist town planning report (Vreken, 2021). Interviewee C2 noted that she was aware of the EMF. However, this was not reflected in the EIA documentation. The interviewee also confirmed that the other stakeholders had little or no awareness of the EMF and that they considered the project-level information contained in the BAR. This view was supported by the review of the comments submitted by stakeholders during the EIA process. In the comments submitted by stakeholders, no reference was made to the EMF or the strategic context of the site. Whilst some of the authority stakeholders (i.e., DFFE, DEA&DP, and SANParks) may have been aware of the location of the site within the National Protected Area, and the existence of the EMF, these considerations were not mentioned in their comments – the comments were site-specific.

In reviewing the final BAR, value was attached to the functioning of the wetland as an integral part of the Knysna estuarine system. Through the years the ecological status of the wetland deteriorated (partly due to the adjacent wastewater treatment works), and the BAR proposed improvement of the ecological functioning thereof as part of the development proposal, including the benefits thereof to the downstream Knysna Estuary (Ebersohn, 2022).[354] In reflecting on the project's sustainability, Interviewee C2 placed an emphasis on the availability of services (i.e., water, waste, electricity, transport, etc.) and did not refer to the strategic context other than the ecological functioning of the wetland.

As already highlighted, the BAR relied on the specialist town planning report (Vreken, 2021) to provide the strategic context for the George Rex site. As discussed in Criteria C10.1 above, the

[354] See page 26 and 27 of the final BAR (Ebersohn, 2022).

Knysna SDF (Knysna Municipality, 2017) was the primary information source used in the specialist town planning report and the BAR to reflect on the sustainability of the George Rex development. As such, the reasoning for sustainability was based on diagonal tiering between the Knysna SDF and the EIA (via the specialist town planning report).

Interviewee C3, who was responsible for the coordination (from the authority's side) of the Garden Route EMF in 2010, was also involved in commenting on the George Rex EIA process. Interviewee C3 was of the opinion that the EMF was not considered relevant any longer, based on the long duration since the completion of the EMF. However, this information was not conveyed during the EIA process – i.e., the interviewee did not raise the EMF as a relevant informant to the EIA process. This was surprising, as the EIA Regulations still required the EMF to be considered, regardless of the currency of its information.

In summary, if the stakeholders considered the strategic environmental context to be of value, they did not convey this in their participation during the EIA process. From a tiering perspective, the direct value of vertical tiering in EA (in providing a context for sustainable development) was lost. However, the strategic environmental context, through the strength of diagonal tiering, still indirectly influenced the EIA process on what constituted a sustainability outcome.

This criterion was evaluated as partially conformed to.

Criteria C11.2: To what extent do key role-players from other sectors refer to the EMF/SEA in addressing their sector interests?

In reviewing the information in the final BAR, it was clear that the Garden Route EMF received no acknowledgment in other sectors. In comments provided as part of the EIA public participation process, there was a primary reliance on the EIA (site-specific) information and their own various sector-specific legislative requirements (Ebersohn, 2022).[355] This was also the view of Interviewee A2. The contributing role the Garden Route EMF could have played in horizontal tiering was lost.

In terms of the Knysna SDF (Knysna Municipality, 2017), there was a relatively weak level of horizontal tiering, insofar as the SDF was informed by the ISDF (Knysna Municipality, 2015), which in turn, was reliant on the EMF as a key informant on biophysical information. Therefore,

[355] Appendix J to the final BAR (Ebersohn 2022).

the EMF indirectly influenced land-use regulatory decision-making in the Knysna Municipality and other sectors informed by the SDF, through weak horizontal tiering.

In summary, key role-players from other sectors did not refer to the EMF in addressing their sector interests. Except for the land use planning sector, the opportunity for horizontal tiering between the EMF and the sector interests during the EIA process was lost.

Based on the above, this criterion was evaluated as partially conformed to.

8.3.6 The Intermediate Outcome ToC Component

The criteria developed to evaluate the assumptions related to the Intermediate Outcome ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against Criteria C12.1, C13.1, and C13.2, as discussed in the following section.

Criterion C12.1: To what extent are strategic-level environmental assessments considered in other sector strategic planning frameworks in a manner that achieves alignment?

In terms of land use planning, the Knysna SDF (Knysna Municipality, 2017) was indirectly, through weak horizontal tiering, influenced by the Garden Route EMF (Earth-Inc, 2010). This was achieved by the SDF being informed by the Integrated Strategic Development Framework: Strategic Environmental Assessment: Natural Environmental Context (draft) (Knysna ISDF - SEA) (Knysna Municipality 2015), which in turn relied on the EMF as a source of biophysical information. As such, the EMF indirectly influenced the land-use planning in the Municipality. However, the EMF was not directly referenced in the SDF.

Interviewee C2 was unaware of any other sector planning initiative that considered the Garden Route EMF. The interviewee also confirmed that no follow-up initiatives were planned to evaluate the uptake of the EMF and that no review of the EMF was planned for in the future, as EMFs are not receiving priority attention in DFFE.

This criterion was evaluated as partially conformed to.

Criterion C13.1: To what extent do the environmental decision-making authorities consider tiering (tiered environmental assessments and/or environmental planning) as valuable in achieving sustainable development outcomes?

Interviewees C3 and C4 supported tiering as an important aspect of integrated environmental management and to move away from the overreliance on EIAs. Interviewee C3 expressed a concern that the current skills of EAPs were focused on EIAs' procedural compliance and capacity building was required to teach EAPs to apply broader IEM principles during EIA processes. Consistent with this view, the procedural focus of EIA practices was also highlighted to be a limiting factor to achieving sustainability outcomes (Interviewees C4, D4, D5 and E1) and that there was a disjunct between the theoretical value attached to tiering and the practical implementation thereof – the latter was lacking. The review of both the EIA documentation and EIA decisions confirmed the poor use of tiered information.

Interviewee E1 also highlighted that for tiering to be effective, strategic level assessment was a crucial component and required more attention to be given to EMFs and SEAs in presenting information that provides sustainable development options and, the need for trade-offs, and opportunity costs. The interviewee regarded it essential that sustainability at this strategic level must address both substantive effectiveness (i.e., sustainability) and improve the efficiency of regulatory processes.

In summary, the review of both the EIA documentation and EIA decisions confirmed the poor use of tiered information. Tiering was considered to be of value in achieving sustainability outcomes, but the EA practices put an overreliance on EIA processes. However, the general view was held that more attention must also be given to strategic-level assessments as a crucial component of tiering, to improve its guidance towards sustainability. There was a disjunct between the theoretical value attached to tiering in contributing to achieving sustainability outcomes and the practical implementation thereof, but the latter was lacking.

This criterion was evaluated as partially conformed to.

Criterion C13.2: To what extent have resources been allocated, and institutional arrangements have been developed within provincial authorities support for tiering (through strategic level assessments and planning?

Interviewee C3 noted that no resources were available to update the Garden Route EMF and that developing EMFs was not a priority in DFFE. In DFFE, the primary focus was on SEAs, whereas provinces used EMFs as the primary strategic-level EA instrument (interviewees E3, D4, and D5).

In general, there were diverse institutional arrangements in dealing with strategic-level EA and environmental planning within DFFE and the different provincial Departments responsible for environmental management (Interviewees C3, D4 and D5).

Although the institutional hierarchies (organisational structures) made adequate provision for functional-specific environmental planning (in different functional areas such as biodiversity, coastal management, and climate change), the allocation of adequate resources towards integrated, strategic-level assessments remains a problem in the Western Cape and DFFE (Interviewees C3, D4, D5 and E1). This was similar in other provinces (Interviewees C3, D4 and E2)

DFFE made resources available for several SEAs conducted over the last 10 years (Interviewee D4). This was in contrast with provinces where EMFs were the primary strategic assessment instrument. These EMFs were often initiated in partnership with other organs of state (Interviewee D2) due to the limited financial and human resources available at the Western Cape provincial level as a result of austerity measures, especially following the post-Covid period (Interviewee E1 and D4).

Interviewee E1 also highlighted that although many resources were being allocated towards functional-specific environmental planning in the different functional areas within environmental management (such as biodiversity, coastal management, air quality, waste management, and climate change), inadequate resources were made available for integrated assessment and planning to pull all these functional planning efforts together into a single plan.

In summary, although adequate provisions were made in institutional hierarchies (organisational structures) for functional-specific environmental planning, the allocation of enough resources towards integrated, strategic-level assessments and planning, remained a problem.

This criterion was evaluated as partially conformed to.

8.3.7 The Impact ToC Component

The criteria developed to evaluate the assumptions related to the Impact ToC Component of the TOC map were set out in Chapter 5, Table 5-1. The performance of the case study was evaluated against C14.1, C14.2, C15.1, C15.2, and C15.3, as discussed in the following section.

Criterion C14.1: To what extent do EMFs/SEAs affect the efficiency of EIAs (i.e., reducing time and cost implications of EIA processes)? In general, and in this specific case study?

The Garden Route EMF did not change or affect the regulatory procedures required in the EIA Regulations. It primarily provided information that must inform the regulatory EIA process. This was corroborated by Interviewee C3.

Diverging opinions were given by interviewees on the efficiency gains (or not) to be achieved by EMFs. Interviewee C4 emphasised that the original purpose of EMFs was to improve the efficiency (i.e., time and cost implications of EIAs) by focusing EIAs on the relevant issues to be investigated – reducing the information requirements by focusing on relevant considerations. In terms of EIAs in general, Interviewee C2 believed that EMFs did not improve the efficiency of EIA processes and that information requirements of EIAs were primarily addressed by assessing site-specific impacts based on specialist inputs. Interviewee C3 confirmed that the original purpose of the Garden Route EMF was to improve the efficiency of the EIA process by ensuring that the information in the EMF was at an appropriate scale to reduce the information requirements from the different authorities during EIA processes. The interviewee emphasised that the EMF information did not remove the need for officials to apply their minds to interpret the information contained in the EMF. Interviewee C3 emphasised, however, that the EMF was now outdated and therefore ineffective in achieving this goal.

The restricted timeframes of the EIA Regulations also negatively influenced the efficiency of the EIA process. The refusal decisions on both applications were primarily based on procedural aspects (DFFE, 2020; 2022) that could have been resolved by requiring additional information from the applicant/EAP. However, the restricted timeframes of the EIA process do not allow for additional information to be requested and as such, the applications were refused. In this instance, the unintended consequence of law reform that focused on reducing timeframes was that in this instance, the second appeal decision (Minister: FFE, 2023) allowed a revised application to be submitted for the third time to resolve outstanding non-substantive matters, which, could have been resolved as part of the first application by requesting additional information.

From a vertical tiering perspective, the potential effect that the EMF could have had in assisting in rationalising the information requirements during the EIA process was lost as it was not used in drafting the EIRs (for both applications) or the review thereof. The opinions of the interviewees also reflected different perceptions of the value of EMFs in affecting the time and cost efficiency of EIA processes. One view held that efficiency was only achieved if the EMF results in changes to the regulatory EIA procedures (Interviewee C2), countered by the view that the interpretation of the EMF information should reduce information requirements and scope of EIA processes without changing the procedures of EIA processes (Interviewee C3).

In summary, based on the case study and interviews, the aim that the Garden Route EMF must improve the efficiency of EIA processes through vertical tiering was not achieved in practice, as the EMF was not relied on during the EIA process. From a tiering perspective, vertical tiering was ineffective in improving the efficiency of the EIA process in this case study.

Based on the above, this criterion was evaluated as not conformed to.

Criterion C14.2: To what extent do EMFs/SEAs affect the effectiveness of EIAs (i.e., to deliver sustainable development outcomes)?

In the George Rex Case Study, the strategic context did not affect the effectiveness (sustainability) of the EIA process (Interviewees C2 and C3). However, in reviewing the EIA information, reliance was put on the fact that the Knysna Municipal SDF (Knysna Municipality, 2017) located the George Rex site within the urban edge. Therefore, the SDF influenced the EIA outcome through diagonal tiering. Regarding the Garden Route EMF in particular, it was, at the time it was finalised in 2010, an effective instrument to improve the effectiveness of EIA processes (Interviewees C3 and C4). However, the EMF was not considered during the George Rex EIA process.

All the interviewees expressed the general view that the presence of a strategic environmental context can improve the substantive effectiveness of EIA processes. However, Interviewee C2 believed this was more achievable in certain sectors, such as the renewable energy sector, where an SEA was conducted, but that in most EIAs, as in the George Rex case, sustainability was linked to the EIA-specific information. Interviewee C4 believed that in general, based on his current involvement in sustainability reporting at a corporate level (and not being involved in EIA anymore), EIAs were not effective in addressing sustainability, as it was approached as a “tickbox exercise” and was too process-driven. He expressed the opinion that EMFs were primarily focused on bringing efficacy into the environmental impact management field (rather than

achieving sustainability outcomes). Interviewee C3 regarded EMFs (and the information they contain) as essential in facilitating integrated decision-making that considers social, economic, and biophysical components of the environment. The interviewee believed that generally, a strategic context was important in achieving sustainability outcomes – to play a facilitative role in integrating the three components of the holistic environment.

In summary, the Garden Route EMF was not referred to by any of the stakeholders during the EIA process or by the decision-making authority during the decision-making process. Therefore, the aim that EMFs (in general) improve the effectiveness of EIA processes was not achieved in practice in this case study. From an EA tiering perspective, vertical tiering was ineffective in improving the effectiveness of the EIA process in this case study.

Based on the above, this criterion was evaluated as not conformed to.

Criterion C14.3: To what extent is the strategic context (i.e., EMFs/SEAs) adequate in ensuring the achievement of the environmental right in a balanced manner?

Interviewees C1 and C2 did not use the Garden Route EMF during the EIA process. Interviewee C2 did, however, in replying to other questions (criteria) conveyed the opinion that a primary reliance was put on site-specific information generated during the EIA process.

Interviewees C3 and C4 were involved in drafting the Garden Route EMF and viewed it as adequate in providing the strategic context to guide EIA processes in achieving sustainability. However, since the EMF was never updated, they expressed doubt that the EMF was relevant due to the information being outdated.

This criterion was evaluated as partially conformed to.

Criterion C15.1: To what extent does the EIA deal with the environmental right in a balanced manner?

Interviewee C2 believed the environmental right was adequately considered in the EIA process (and referred to section 23 of the final BAR), and that the rights of all stakeholders were considered, including “heritage rights” and the “right to develop”. The interviewee emphasised that through the public participation process, everyone had the opportunity to participate and raise issues to be addressed and that “all issues were addressed in a balanced manner”.

In the final BAR, sustainability was discussed and motivated in terms of its social, economic, and environmental components.[356] The different views expressed by the stakeholders were captured in the final BAR (Ebersohn, 2022).[357] Many of the residents of the nearby residential area did not support the development (for reasons that varied from aesthetic impact to traffic impacts), DEA&DP did not support the development (primarily based on most of the site functioning as a wetland), SANParks supported the development subject to several recommendations, and DFFE refused the application. This indicated that, based on the information contained in the BAR, stakeholders came to different conclusions on what constituted sustainable use of the site. The knowledge brokering role that the EMF could have played (and perhaps resolving some of the contradicting views of stakeholders) was lost. Although not a guaranteed outcome, participation by stakeholders in formulating a future vision for the site as part of the EMF process may have resolved some conflicting views and provided strategic guidance to stakeholders. This knowledge brokering role of the EMF is consistent with the views expressed by interviewees C3 and C4.

In reviewing the refusal issued by the decision-making authority (DFFE, 2022), it was noted that the reasons for the decision were not based on the argument that the development was not sustainable, but was based on the inadequacy of the EIA process (i.e., public participation and other procedural flaws) and the inadequacy of information. No view was expressed that the development was fundamentally unsustainable. The inadequate information (DFFE, 2020; 2022) refers to the following:

- An update of the socio-economic context was required by the decision-maker, but not provided. However, when considering the information available, it was doubtful if the context as conveyed in the EIA and the specialist town planning report (and through its reliance on the SDF), was likely to reflect a change in the socio-economic context (i.e. the surrounding land use was set with little scope for change).

- The biodiversity information was required to be updated, but this was not done. However, based on the available information, the ecological status of the site would not have improved, and the biodiversity information, although more than 5 years old, would still be relevant.

- Impact on small fisheries (and the lack of an underwater noise study) was questioned by the decision-maker – this was a clear mistake and did not have any bearing on any issue raised

[356] Pages 27 – 30 of the final BAR (Ebersohn, 2022).

[357] Section H of the final BAR and Appendix J of the final BAR (Ebersohn, 2022)

during the EIA process. This mistake is clear based on the fact that the second appeal decision, upheld the appeal on this specific issue.

Based on the existing information available (site-specific and strategic), it was doubtful if additional information would change the findings of the final BAR. The second appeal decision also upheld the appeal grounds related to some of the specialist studies.

Interviewee C4 again expressed the general view that EIAs were ineffective in addressing sustainability due to the persistence of a 'tickbox' approach and being process-driven.

In general, it is noted that the reasons and reasoning provided in the appeal documentation (both in the appeal and the appeal decision) were significantly better compared to the BAR and the EIA decision that was issued.

In summary, despite the lack of consideration of the strategic environmental context of the site, and regardless of the inadequacies of the BAR as reflected in the decision issued by DFFE, the final BAR considered the environmental right in a balanced manner. This determination did not consider the merits of the proposed development, but rather the extent to which the environmental right was considered in a balanced manner. Regardless of the shortcomings of the EIA process in not considering the Garden Route EMF, the EIA did consider all components of the environment.

Based on the above, this criterion was evaluated as being conformed to.

Criterion C15.2: The extent to which the EIA decision deals with environmental rights in a balanced manner?

Interviewee C2 believed that the decision did not address environmental rights in a balanced manner. The interviewee maintained that the decision-maker did not adequately consider the EIA information and that the reference in the decision to an underwater noise study and small-scale fisheries underpinned this. Both the first and the second refusal decisions (DFFE, 2020; 2022) were appealed by the applicant, implying that the applicant (and the EAP that submitted the appeals on behalf of the applicant), did not support the decisions (refusals) issued by the decision-making authority.

The review of the EIA decision issued by DFFE (DFFE, 2022) confirmed that reference was made to the underwater noise study and small-scale fisheries. This information had no bearing on the information provided during the EIA process and was a clear mistake, and this was confirmed in

the appeal decision (Minister: FFE, 2023). The decision did not contain information on the strategic context and no reference was made to 'need and desirability' considerations. The decision-maker did not consider the historical information provided in the first application. The decision mostly highlights the lack of information, which can be summarised by the statement in the refusal decision "*The BAR in its current form is inadequate to make an informed decision on the above application…..*" (DFFE, 2022). The decision did not include any reasons or reasoning for the sustainability of the development (or the balanced consideration of the environmental right).

In summary and from a tiering perspective, the strategic context was not referred to in the EIA refusal decision, and by implication did not influence the decision – vertical tiering in EA failed in this regard. Neither the EIA decisions nor the appeal decisions discussed the sustainability (or not) of the development applied for.

Based on the above, this criterion was evaluated as not conformed to.

Criterion C15.3: In general, to what extent is EIA an effective tool to achieve sustainable development outcomes?

Interviewee C2 highlighted that a typical EIA process "*goes through many stages*" and that when the decision-making stage was reached, there was a reasonable level of certainty that most issues would have been addressed. The interviewee regarded EIA as an effective tool to achieve sustainability outcomes. However, there were some negative issues, such as the amount of time it took and the amount of specialist information required, and the latter was sometimes excessive (i.e., the inflexibility of the process).

Regarding the George Rex development, Interviewee C2 believed that when she started her involvement in 2012, the EIA process was not so much a "tickbox" approach as was currently the case. Currently, there is more focus on "…. *getting the admin right than on protecting the environment…*". Interviewee C2 believed that the focus on procedural efficiency resulted in inadequate consideration being given to the substantive value of EIA information. Interviewee C2 also expressed the opinion that there seemed to be a poor relationship between decision-making authorities and EAPs (the former was more set on finding mistakes in the work produced by the latter), while the relationship should be one of "*serving the same client, namely the environment*". Interviewee C2 also expressed the opinion that power dynamics may have influenced the outcome of the decision-making process.

Interviewee C3 thought there was an overreliance on EIA and a lack of consideration given to other Integrated Environmental Management instruments. He regarded EMFs as one such instrument. According to him the focus of EIAs was too much on impact mitigation and EIAs did not adequately consider strategic informants towards achieving integrated decision-making (i.e., a context-specific balance between social, economic, and biophysical spheres). He emphasised that EIAs in isolation cannot achieve this integration and that EMFs (different tiers) were required to support EIAs. Interviewee C3 believed that within the strategic context, EIAs fulfil the desired role in *facilitating* development, and should not be seen as *hampering* development.

Interviewee C4 expressed the same sentiments as interviewee C2 and maintained that EIA processes were too process-driven and have become a "tickbox" approach. He regarded EIAs as too restricted and "narrow" to inform sustainability outcomes. He did highlight that the strategic context should assist in achieving sustainability outcomes.

In summary, there were different opinions on how EIAs can achieve sustainability and that tiering could assist by providing strategic contexts within which EIAs can operate to achieve sustainable development outcomes. In isolation, EIAs would not be able to achieve this goal.

Based on the above, this criterion was evaluated as partially conformed to.

Criterion C15.4: To what extent will tiering be of value to assist EIAs in delivering sustainable development outcomes (or how should strategic documents influence EIA processes)?

In the case study, the diagonal tiering between the SDF and the EIA influenced the EAP and the applicant's view on the acceptability (and sustainability) of the proposed development. This determination was based on several references made in the EIA to the proposed development site being located within the urban edge of Knysna (Knysna Municipality, 2017). This included the discussion on sustainability in the EIA.

Interviewee C2 referred to previous EIA experiences and thought that EIA processes were primarily about site-specific information but that the "*socio-economic context is considered as part of Need and Desirability, the site-specific information provided through specialists is the primary consideration*". The interviewee also emphasised that the type of development proposals will influence the extent to which the strategic contexts inform the EIA process, the SEA for renewable energy being an example.

The views of Interviewees C3 and C4 for this criterion were closely linked to their views on EIAs delivering sustainable outcomes (Criterion C15.4). Interviewee C4 expressed that sustainability

(and the environmental right) was more complex than only reflected in an EMF - i.e., that the EMF could not (be expected to) provide all contextual information for all sites in adequate detail. However, the interviewee thought EMFs can contribute to the complex interaction between complex socio-economic and socio-ecological systems to achieve a balanced outcome. He expressed the view that an EMF supported the broader policy frameworks and that the latter, in its application, would facilitate the balanced consideration of environmental rights as an outcome. The interviewee maintained that EMFs are useful instruments to identify environmental sensitivities (achieved through spatial analysis) and that this must inform planning and policy formulation: "*Tiering is of immense value in delivering sustainable development outcomes. Within a tiered approach, I would recognise and see EMFs and its application as part of an environmental planning application. In most instances first order impacts can be identified and mitigated by the initial application of a higher-order assessment decision-support instrument (SEA / EMF), and if robust and granular enough, a SEA and EMF could provide for a decision should the impact of the activity be low or insignificant. The SEA and EMF level assessment should also contribute to focusing, highlighting, and identifying the specific environmental and social aspects which require further detailed assessment – should the activity or application be large and complex.*"

Interviewees C3 and C4 reflected that information in EMFs cannot dictate decisions, but that it requires users to apply their minds to the merits of the application within the strategic context of the EMF (or different tiers of EA) designed to support EIAs in achieving sustainability outcomes.

The above highlighted several aspects that hampered tiering from contributing to sustainability. These included adequacies of the information contained in the strategic tier (Interviewees C4 and C3), that certain types of development were more suited to benefitting from strategic contextual information (Interviewee C2), as well as the appropriate use of tiered information (Interviewees C3 and C4). In other words, tiered assessments did not necessarily lead to better decision-making.

In summary, the interviewees confirmed that although not always experienced in practice, tiering in general, would be of value in EA. This reflection on the (potential) value of tiering was mainly focused on the substantive effectiveness (i.e., achieving sustainability outcomes) of EAs.

This criterion was evaluated as partially conformed to.

8.4 Key observations emerging from the George Rex case study

Several key observations emerged from the results of the George Rex case study, related to tiering in EA. This relates to the tiering relationship between the first and the second application, achieving tiering through political will or legal mandates, administrative justice (reasons and reasoning), the limited interpretation of 'efficiency', knowledge brokerage, and the vexed issue of 'sustainability'.

The tiering relationship between the first and the second application: Interviewee C2 assumed a horizontal tiering relationship between the first and the second application (and the EIA processes that informed these applications). As such, Interviewee C2, in following an EIA process for the second application, relied on the adequacy of the information contained in the EIA process conducted for the first application. No further specialist studies were conducted as part of the EIA process for the second application. However, in reviewing the second application, the decision-making authority did not assume the same tiering relationship between the first and the second applications. This was clear from the EIA decision (refusal), that the decision-making authority did not assume the same horizontal tiering relationship between the two EIA processes. The refusal decision stated that "...*all the …specialist studies were conducted for a previous application which was refused by this Department. No new studies were conducted for this application. No addendum to the studies were conducted. No letters from the previous specialists confirming that these studies were still valid and can be used for this application. The studies should have been updated and amended prior to submission for decision-making."*[358] The EAP, therefore, relied on the adequacy of the EIA information submitted as part of the first application. In contrast, the decision-making authority regarded the second application as independent of the first application and that reliance cannot be put on the information of a previous application (or at least not without confirmation that such information was still valid). These different interpretations of the tiering relationship between the first and the second application and their supporting EIA information significantly influenced the outcome of the EIA process, resulting in the second application being refused. Of significance was also the finding of the appeal decision that acknowledged the tiering relationship between the first and the second application, in stating the following: *"….both the CA and the appellant are afforded an opportunity to ensure that the identified irregularities of the previous undertaken BA process are addressed and/or rectified….I direct the appellant/EAP to ….undertake new, or update biodiversity, wetland, socio-economic and visual impact assessments; or specialist addendums to these previous assessments; or specialist confirmation letters, in which the specialists confirm the applicability of the findings and*

[358] Page 11 of the EIA decision (DFFE, 2022).

recommendations of their previous studies….".[359] This second appeal decision confirmed the tiering relationship between the information in the first and second applications. This was also important in confirming that the information contained in the first application was regarded as relevant considerations (as a component of just administration) when considering the second application. In addition, not accepting a tiering relationship between the first and the second applications exacerbated the undue focus on procedural requirements compared to a practical and purposeful consideration of the substantive adequacy of all relevant information.

Achieving tiering in EA through political will or legal mandates: The policy and legislative context for land use planning strongly catered for tiering in land use planning. The SPLUMA (South Africa, 2013) made it a legal requirement to develop and regularly review SDFs at the national, provincial, regional, and municipal levels.[360] This legal provision meant that the whole country was covered by SDFs – i.e., a tiered land use planning context exists for the entire country to inform project-level land use planning. Importantly, this also resulted in relevant authorities allocating human and financial resources to implement this legal mandate. The environmental legislation, on the other hand, did not explicitly require the interlinking of tiered assessment/planning it did provide for developing policies, plans, strategies, frameworks, and project-level regulatory instruments, albeit in a more disjointed way. This meant that neither the hierarchy or levels of assessments/planning, nor the relationship between tiers clearly stipulated. Also, allocating resources needed to develop and regularly review these tiered EA documents depended on political will. In this case study, the lack of political will was reflected insofar as the Garden Route EMF has not been reviewed since its finalisation in 2010 and indications are that no resources will be allocated to review the EMF. In comparison, the required human and financial resources were allocated to maintain the tiering in land use planning (i.e., reviewing the Knysna SDF). This difference reflects the difference between mandatory and voluntary tiering dispensations.

The divergent interpretations of 'efficiency': The interviewees conveyed different opinions on the efficiency gains (or not) that can be achieved through EMFs. There seems to be two schools of thought:

- Focusing EIA on the relevant issues to be investigated and reducing the information requirements by focusing on relevant considerations – i.e., reducing the information requirements and scope of EIA processes without changing the procedures of EIA processes.

[359] Page 37 and 38 of the second appeal decision (Minister: FFE, 2023).

[360] Chapter 4 of the SPLUMA (South Africa, 2013).

- Reducing (or streamlining) the regulatory processes by reducing the time and cost implications of existing EIA procedures.

The second view that EMFs cannot be regarded as valuable unless they result in a reduction of the regulatory "burden" associated with EIA procedures, is concerning. This reflects a lack of awareness of the role of tiering and the narrow view that 'efficiency = reduced regulatory requirements'.

Can the SEA conducted as part of the SDF process, replace the need for an EMF? The Garden Route EMF has not been reviewed since its completion in 2010 and the unavailability of the maps to inform its effective use rendered the EMF less valuable. Even if the EMF still contained relevant information since the socio-economic and socio-ecological conditions remained stable, the perception was that the EMF was outdated. This perception was emphasised by the fact that none of the authority stakeholders involved in drafting the EMF referred to the existence thereof in commenting on the EIA application. On the other hand, in the development of the SDF for Knysna, including the strategic environmental assessment was conducted based on the requirement in the SPLUMA that a municipal SDF must "…. *include a strategic assessment of the environmental pressures and opportunities within the municipal area, including the spatial location of environmental sensitivities, high potential agricultural land and coastal access strips, where applicable*".[361] This was done as part of compiling the Integrated Strategic Spatial Framework (ISDF) to inform the Knysna SDF process (Knysna Municipality, 2017). While the ISDF relied strongly on the Garden Route EMF (i.e., relatively weak horizontal tiering), it was noted that the strategic environmental assessment was conducted on the "natural environmental context",[362] as a sector input into the SDF. The limited biophysical focus of the strategic environmental assessment conducted as an informant to the SDF process, could not be compared to the EMF as the latter considered the full scope of social, economic, and biophysical aspects. During the EMF process, socio-ecological and socio-economic information (per the requirements of the EMF Regulations)[363] were considered in formulating and designating environmental management zones. As such, the strategic assessment conducted during the SDF process cannot be equated to an EMF.

Informed decision-making: The presence of tiered EA information would not necessarily lead to better decision-making. The information *per se* should not be regarded as 'making decisions' and

[361] Section 21(j) of the SPLUMA (South Africa, 2013).

[362] The full title of the report was "Integrated Spatial Development Framework: Strategic Environmental Assessment: Natural Environmental Context (draft)" (Knysna Municipality, 2015).

[363] Regulation 4 of the EMF Regulations (South Africa, 2014a).

users must apply their minds to the information and the merits of every case. This undue focus on processes and procedures rather than substance was inappropriate, especially if time pressures hampered the ability of EAPs and review officials to apply their minds to the adequacy of substantive issues, including sustainability. The fact that tiered information was considered must not be seen as a box to be ticked, but the need for substantive reasoning on how information was used in motivating impact significance and sustainability. Also, consideration of the strategic context (i.e., tiered information) was not the responsibility of specific stakeholders (e.g., a specialist), but the responsibility of all key stakeholders involved in the EIA process, especially the applicant, EAP, specialists, and decision-making authorities. Within the context of EIA processes, it would be the EAP's responsibility to inform all stakeholders about the presence of tiered EA information. It would also be EAP's primary responsibility to consider such information in the identification of issues and concerns, the application of the impact mitigation hierarchy, and providing information to the decision-making authority that would allow the latter to consider such information consistent with the legal requirement to take EMF information into account during decision-making.[364]

Knowledge brokerage: The George Rex EIA documentation clearly shows that the EAP did not use the Garden Route EMF information during the EIA process and did not make other stakeholders aware of the existence of the EMF. This meant that the value of the strategic context was not conveyed to these stakeholders insofar as it related to the identification and assessment of impacts, cumulative impacts, sustainability and opportunity costs and how this informed the reasons and the reasoning during the decision-making process. This was unfortunate as the interested and affected parties/ stakeholders were not presented with any information to reflect the value that the EAP and the decision-maker attached to the strategic context. Put differently, if the EAP and decision-making authorities did not attach or convey the value they attached to the strategic context, then other stakeholders would not do so either. This impacted the knowledge brokering role that EAPs and decision-making authorities should play - i.e., the importance of building, sharing, and transferring knowledge, in breaking down barriers that impede interaction, healthy communication, and collaboration was lost. In addition, the knowledge brokerage value of the EMF in empowering stakeholders to participate in EIA processes and encouraging them to take ownership of the broader environment within which they live, was lost.

Decision-making (adequacy of information, reasons, and reasoning): In the refusal decision issued by DFFE, it seemed that the primary focus was placed on highlighting the inadequacy of

[364] Regulation 2(1) of the 2010 EMF Regulations (South Africa, 2010).

the EIA process and information provided, rather than considering the strategic context of the development site and the information provided in the previous application and the strategic informants for the EIA process. The decision did not explain why the proposed development was considered unsustainable, especially considering the strategic context (other than the incorrect reference to the impact on small-scale fisheries). The decisions issued focused on procedural and information inadequacies (which were largely dismissed by the appeal decisions, hence referring the application back to the decision-maker for reconsideration). When considering the historical information and the strategic context, it is doubtful that additional information would have revealed any outstanding significant impacts. The decision issued was void of any substantive reasoning on the sustainability of the project proposals. However, the EIA Regulations did not enable the decision-making authority to request additional information (i.e., reject the BAR and request more information), and the decision-making authority was therefore forced to turn down the application. Therefore, the case study revealed the lack of substantive reasoning, the inflexibility of the EIA process, the undue focus on procedural matters, and the lack of considering tiering of information between applications, leaving this application hanging in 'mid-air' without any indication of the sustainability outcome thereof.

The vexed issue of 'sustainability': The George Rex case study illustrated the complex nature of the concept of 'sustainability'. The EIA information indicated that some parts of the site were not sensitive, and the applicant, EAP, and land-use specialist (who had a significant influence on the outcome of the EIA process), supported the development as a sustainable solution. SANParks supported the final development proposal conditional on several recommendations. DEA&DP did not support the development of the site. DFFE (the decision-maker) provided little reasoning in the EIA decision to reflect any view on the sustainability (or not) of the development proposal beyond highlighting procedural and information inadequacies. The EAP (based on the specialist town report) relied on the strategic land use planning context that indicated the site to be within the urban edge, earmarked for 'new development'. However, beyond the reference to the urban edge, all arguments for and against the development were based on site-specific information. The George Rex development illustrated the importance of strategic contextual information (i.e., tiering in EA) in providing a broader context within which site-specific information could be interpreted and sustainable development outcomes could be measured against. More importantly, it highlighted the importance of the stakeholders, especially the decision-making authority, providing reasons and reasoning that contextualised the site-specific information within the strategic (sustainability) context. Interviewee C3 raised an important notion – i.e., that tiering should facilitate integration between socio-economic and socio-ecological concerns, and that if such a context was provided, EIAs could play the intended role of facilitating sustainable development. The contrary was also true – i.e., that a lack of a strategic environmental context

would result in EIAs operating in isolation and would be seen by some as the last stand against development, or by others as hampering development.

8.5 Theory of Change Narrative for the George Rex Case Study based on practice

The extent to which the 15 assumptions that underpinned the logical framework for EA, supported the George Rex case study, is depicted in Figure 8-5. Based on the performance of these assumptions, the ToC narrative for the George Rex case study was described as follows:

> *While the institutional context that existed in the form of legislation and policies only partially supported the established tiered EA information, the political will exist within the DFFE to allocate resources and conduct an Environmental Management Framework (EMF) to inform and provide guidance to EA processes but, did not revise the regulatory EIA process (design component)* [(Assumption 1 and 2)]*. The strategic context provided by the Garden Route EMF was available to inform the George Rex Environmental Impact Assessment (EIA), but the EMF was outdated and therefore not credible. The George Rex EIA process followed the prescribed regulatory EIA process. However, the strategic contextual information of the EMF, although outdated, was not acknowledged or used during the EIA process as required in law,* [(Assumptions 3, 4, 5, 6 and 7)] *(input component). Conducting the EIA process (activity component), resulted in a Basic Assessment Report as a deliverable,* [(Assumption 8)] *and the review thereof produced a refusal (output component). Although the Basic Assessment Report recognised the EMF, these outputs were partly aligned with the strategic context provided by the Municipality's Spatial Development Framework (SDF). The EMF information was indirectly used through weak horizontal tiering between the integrated EMF and SDF, and diagonal tiering between the SDF and the EIA. The refusal decision was not aligned with this strategic context* [(Assumptions 9 and 10)]*. The stakeholders did not reflect on the strategic context provided by the EMF during the EIA process and therefore, did not attach a value to this strategic context and its contribution to sustainability* [(Assumptions 11 12, and 13)] *(outcome component). Although not based on the EMF information, the EIA reflected on sustainability, and the progressive realisation of the environmental right contained in Section 24 of the Constitution within the strategic context provided by the EMF. The refusal decision did not reflect on sustainability or the environmental right contained in Section 24 of the Constitution. Through weak horizontal tiering between the EMF and the SDF cooperative governance was improved* [(Assumptions 14 and 15)] *(impact component).*

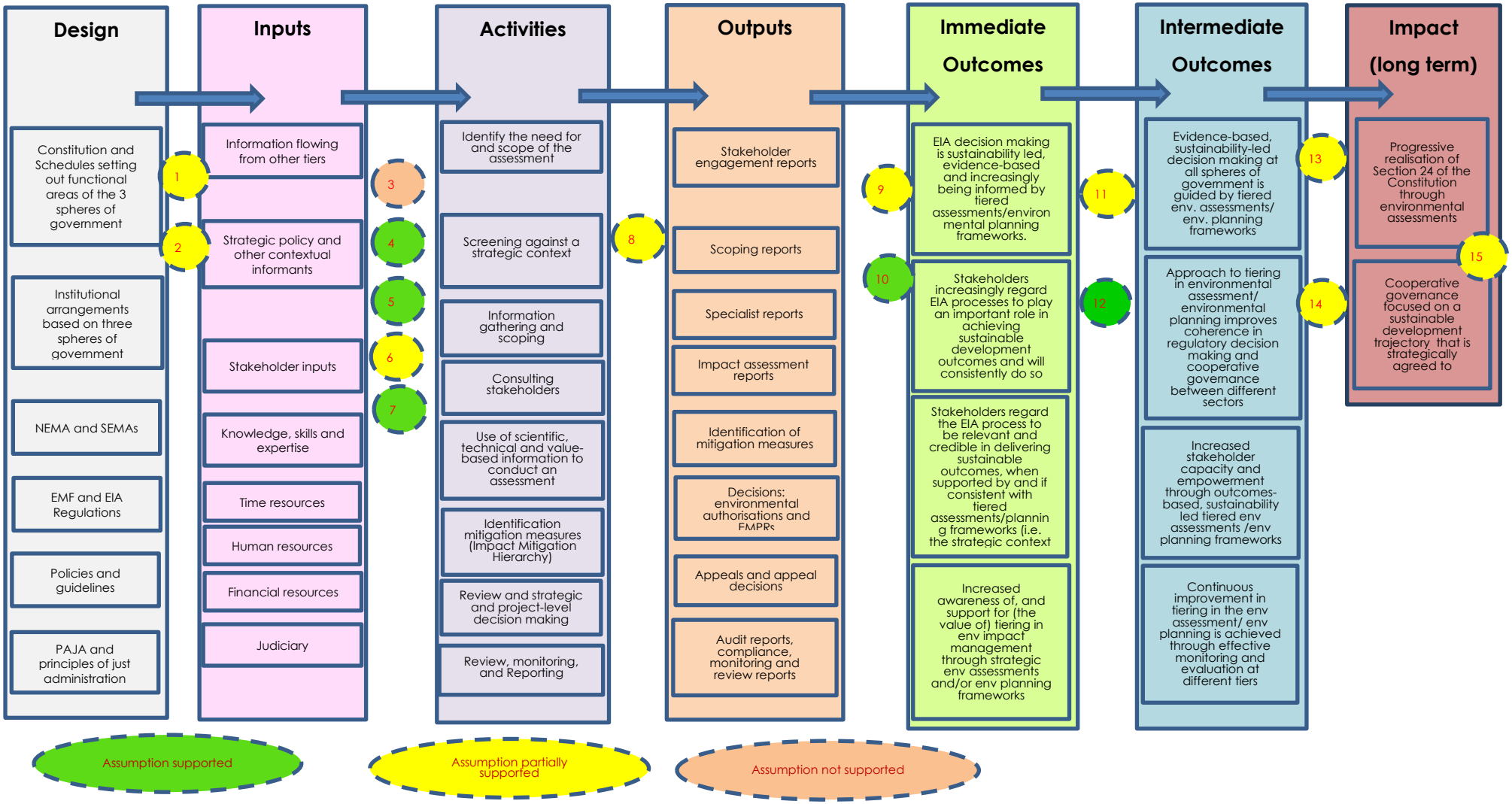

Figure 8-5: ToC Map for the George Rex Case Study

CHAPTER 9: CROSS-CASE AND GENERAL ANALYSIS – TIERING PRACTICE IN SOUTH AFRICA

In the previous Chapters 6, 7 and 8, tiering in EA was evaluated for three case studies. This chapter conducts a cross-case and general analysis to evaluate the overall performance of tiering in EA in South Africa. Section 9.1 provides the context for the chapter in addressing research objective 3 - i.e., to critically evaluate tiering within the South African EA system. The results of the cross-case and overall analysis, and the extent to which the research results support the assumptions underlying the logical framework for EA tiering in South Africa are presented (sections 9.2 – 9.8). The cross-case and overall analysis are presented as a ToC map and narrative that reflect EA practices in South Africa (section 9.9).

9.1 Introduction

Having examined how tiering in EA was dealt with in the three individual case studies, this chapter applies a cross-case analysis to the case studies to address the research objective 3:

To evaluate tiering within the South African environmental assessment system

To address this research objective, the overall analysis of the performance for the various ToC criteria in addressing the assumptions underlying tiering in EA in South Africa is discussed in this chapter. This performance analysis was primarily based on a cross-case analysis of the results presented in Chapters 6-8, complemented with more generic information about South African practice through interviews held with experts on EA and environmental planning in South Africa (see Table 5-3). The latter interviews, as well as the review of policies and legislation, provided insight into the performance for those criteria that could not be evaluated only using the case studies (see Table 5-5).

Trends and causal factors were identified across cases, allowing for a better understanding of how EA tiering functions in South Africa (at a country level). Table 9-1 summarises the cross-case analysis results and forms the basis for further discussion in this chapter.

TOC	Assumption	Review Criteria	Rietkloof Case Study	Penhill Case Study	George Rex Case Study	Overall performance
Conformance	**Partial conformance**	**Non-conformance**				
Design	Assumption A1: Environmental management policies and the legislative framework make clear provisions for tiered environmental assessments and tiered decision-making, in support of establishing a credible, evidenced-based strategic context for EIAs (and other project-level assessment and decision-making)	C1.1				
		C1.2:				
		C1.3				
	Assumption A2: Authorities are committed to developing institutional arrangements required to establish strategic context (tiers) to support project-level assessments and decision-making.	C2.1:				
		C2.2				
Input	Assumption A3: A relevant strategic environmental context is available in the form of a strategic level assessment and/or environmental management framework, to guide assessment and decision-making at the project level	C3.1				
	Assumption A4: Functional specialists provided clear guidance in setting a strategic context and the translation thereof into project-level inputs	C4.1				
	Assumption A5: The strategic environmental context was the outcome of an evidence-based policy formulation and a credible environmental assessment process	C5.1				
		C5.2				
		C5.3				
	Assumption A6: The relevant key role-players in the EIA process are aware of and support the strategic environmental context	C6.1				
		C6.2				
	Assumption A7: The preceding tiered environmental assessment considered both policy/legislation inputs (vertical tiers), as well as other sector inputs (horizontal/diagonal tiering).	C7:1				
		C7:2				
		C7:3				
Activities	Assumption A8: EAPs, in compiling the assessment and the review thereof are aware of and understand the role of strategic contextual informants when conducting their duties.	C8:1				
		C8:2				
		C8:3				
		C8:4				
		C8:5				
		C8:6				
Outputs	Assumption A9: The EIA decision will validate and strengthen the strategic environmental context.	C9:1				
Immediate Outcomes	Assumption A10: Tiered environmental assessments provide clear guidance to lower tiers to facilitate sustainability outcomes at project level assessment and decision-making.	C10:1				
	Assumption A11: In considering what constitutes sustainability outcomes, stakeholders attached value to aligning project-level assessments and decisions to the strategic environmental context.	C11:1				
		C11.2				

Intermediate Outcomes	Assumption A12: The need for aligned/ integrated decision-making will promote the value of tiered environmental assessment to overcome sectoral interests	C12.1				
	Assumption A13: The support for the value of tiering in environmental assessment results in allocating resources and establishing institutional arrangements to support strategic-level assessment	C13.1				
		C13.2				
Impacts	Assumption A14: The strategic context (through SEAs or EMFs) is actively contributing to sustainable development goals	C14:1				
		C14:2				
		C14.3				
	Assumption A15: EIAs are supported as essential instruments in tiering in environmental assessment for achieving environmental rights.	C15:1				
		C15:2				
		C15:3				
		C15.4				

Table 9-1: Overall performance per ToC component and assumption

The next sections present the cross-case and overall analysis by discussing the extent to which the results of the research support the assumptions underlying the logical framework for EA tiering in South Africa.

9.2 The Design ToC Component

Assumption A1: It is assumed that the environmental management policies and the legislative framework make clear provision for tiered environmental assessments and tiered decision-making, in support of establishing a credible, evidenced-based strategic context for EIAs (and other project-level assessment and decision-making).

This section first reflects on how tiering in EA is catered for in environmental policies and legislation in general, and thereafter for the specific sectors covered by the case studies.

As the primary environmental management legislation, the NEMA contains enabling provisions for conducting EAs at the project level (i.e., EIAs) and strategic level (i.e., SEAs and EMFs). However, the intentional establishment of tiered PPPP and tiers of EA is not catered for in legislation, especially when compared to the land use planning sector[365] and international best

[365] Tiering is provided for land use planning in the land use planning legislation (South Africa,2013).

practice examples.[366] Only EIAs are mandatory and legislated for in detail, but there is no legal obligation to conduct SEAs and EMFs. Conducting strategic-level assessments is dependent on political will and the availability of resources for implementation. This voluntary status creates inconsistency in implementing tiering in EA, often leading to a void in the strategic environmental context. In turn, this void puts a strain on EIAs as project-level instruments that were not designed to operate as stand-alone instruments. EIAs require strategic contextual information to deal with challenges such as strategic impacts, cumulative impacts, the application of the impact mitigation hierarchy, opportunity costs, and trade-offs.

Specific Environmental Management Acts (SEMAs) provide regulatory frameworks for various functional areas in environmental management, such as biodiversity, coastal management, climate change, air quality, and waste management. These different statutes make provision for conducting functional-specific assessments and establishing tiers of functional-specific environmental assessment/planning information, such as biodiversity strategies and plans. However, these tiers of functional-specific environmental planning information do not, and are not legally required, to consider the complete scope of the environment's social, economic and biophysical components. In other words, environmental planning in the different functional areas does not equate to conducting an EA that presents an integrated sustainable development context. The EIAMS (DEA, 2014) confirms that EMFs and SEAs are the only EA instruments that can fulfil this role.

The case studies found that the renewable energy sector has a well-developed non-spatial policy context to support energy security, decarbonisation of the economy, and renewable energy projects contribute towards achieving this goal (Chapter 6, C1.1). The Renewable Energy SEA created a strategic, spatial policy/planning context for renewable energy through establishing Renewable Energy Development Zones (REDZ). However, beyond listing it as an environmental management instrument,[367] SEAs as a strategic assessment tier are not prescribed in legislation (Chapter 6, C1.2). The Renewable Energy SEA was conducted based on political will rather than legislative requirements. From a tiering perspective, the Renewable Energy SEA constituted a strategic-level EA, with the output being the establishment of REDZs as a spatial policy and revised (reduced) regulatory procedures for renewable energy projects.

[366] In the United States, reference to tiering is found in the 'Final Rule Modernising its NEPA Implementing Regulations' (CEQ, 2020, based on Therivel & Gonzales, 2021) – see Chapter 2.

[367] Section 1 of NEMA (South Africa, 1998a)

The case studies confirmed that the urban development sector (as a collective term for residential, commercial, and industrial development) is supported by well-developed tiers of land use planning (Chapters 7 and 8, C1.1 and 1.2). In the functional area of land use planning, tiering is legislated for, mandating the establishment of different tiers of land use planning through national, provincial, regional, and municipal Spatial Development Frameworks (SDFs) (South Africa, 2013). Therefore, the entire country is covered by SDFs and a tiered land use planning context exists for the whole country to inform project-level land use planning. In contrast, tiering is not legislated for in the environmental sector. Therefore, tiering in EA varies within and between municipalities, provinces and national spheres of government, depending on political support and the allocation of resources to do so. The case studies showed that where the political will and resources existed, EMFs and SEAs contributed to tiering in EA by providing strategic, spatial environmental contexts to guide decision-making related to the use of natural resources, including the use of land for urban development. The creation of strategic environmental contexts through EMFs is enabled through legislation, but they are voluntary instruments, with less than 50% of South Africa covered by EMFs (Interviewees D4 and D5).

The drive to create tiering in urban development and renewable energy flows from the policy imperatives of the NDP for socio-economic growth and development, as well as the decarbonisation of the economy. In these sectors, infrastructural development is high on the government's developmental agenda, as reflected in the NDP. The political focus on renewable energy and urban development sectors facilitated the creation of tiered EAs and decision-making related to these sectors. However, the same effort is not present in other sectors, such as agriculture or tourism, resulting in a disparity between sectors insofar as tiering in EA is concerned (i.e., similar types and scales of impacts associated with different sectors are treated differently in terms of information and procedural requirements).

The case studies, corroborated by generic interviews and the review of policies and legislation, confirmed that in general, tiering in EA is not specifically catered for in the policies (C1.2) or the legislation (C1.1) governing EA. Although the NEMA and the EIA Regulations, as the primary legislation governing EA, include some enabling provisions for different EA instruments, the review of these statutes, case study findings, and general interviews (C1.1, C1.2, and C1.3) showed that tiering arrangements are not addressed in any meaningful way:

- The requirement to intentionally establish tiered PPPs and EAs to support its development, is not legislated in the environmental sector.
- As a crucial component of tiering, the relationship between PPPs and between EA instruments is not adequately captured in environmental legislation. The case studies showed that the

relationship between the EIA and EMFs/SEA is not clear. Although EMF information is legally required to be considered during EIA processes, it was not done in practice. In certain instances, SEAs resulted in the development of revised regulatory procedures and protocols to guide information gathering during EIA processes. In these instances (e.g., the Renewable Energy SEA) tiering requirements were established. However, it is unclear how the SEA information is considered in EIA processes - the relationship between EIAs and SEAs is not clarified. The review of policies discussed as part of the case studies and the legislation listed in Table 4-1 reflected that while the development of various environmental management instruments is catered for, the relationships between the different instruments are not adequately dealt with (see section 4.2.1 and C1.3 of case studies). These include functional-specific environmental planning instruments such as bioregional plans, heritage, coastal, waste, and estuarine management plans. They are enabled by legislation[368], but there is no clarity (and it is not legislated for) on how these instruments are linked. In general, these functional-specific planning initiatives happened in isolation (interviewees D1, D4, D5, E1 and E3) with no legal requirement to consider all components of the environment (i.e. biophysical, social and economic dimensions of the environment). In the case studies, specialists relied on the functional-specific environmental planning documents in their field of expertise as inputs into EIA processes rather than considering the integrated view represented by the EMFs and SEA.

- Although EMFs and SEAs are enabled through legislation, they are voluntary. This voluntary status has a negative influence on its implementation. Although there is a legal requirement that the information in EMFs must be considered during EIA decision-making, this is poorly done in practice or even ignored. There is no legal requirement that the development of PPPs must be informed by EAs. Only projects are legally required to be preceded by an EIA.[369]
- One of the key legal provisions available to promote tiering and to bridge the gap between policies, strategic-level and project-level assessments is the requirement to consider 'need and desirability' as provided for in the EIA Regulations (South Africa, 2014).[370] Clarity on the implementation of need and desirability is not contained in the EIA Regulation, but guidance is provided in the 'Guideline on Need and Desirability' (DEA, 2017c). The guideline, through a set of questions, requires EAPs and reviewers to consider the applicability of policies

[369] A project that triggers activities listed in terms of section 24(2)(a) of the NEMA (South Africa, 1998a) is required to apply for environmental authorisation that must be informed by an EIA conducted in terms of the EIA Regulations (South Africa, 2014a).

(including SDFs and EMFs) on the EIA being conducted. However, the case studies showed that 'need and desirability' is inconsistently and ineffectively implemented, meaning that the reasoning on how 'need and desirability' influenced decision-making was inadequate or lacking. The findings of the 2019 EIA Review Study on the effectiveness of the EIA system in South Africa (DPME/DEA, 2019) also confirmed the implementation of 'need and desirability' as a weakness in current EIA practices.

There is an increasing trend in South Africa of developing regulatory environmental management instruments as outputs flowing from SEAs and EMFs (Chapter 4; Interviewees D1-5, E1-3). These regulatory instruments either streamline regulatory EIA requirements or grant exclusion from the legal requirement to obtain environmental authorisation before commencing with listed activities[371] (Rietkloof Case Study; Interviewees A2, A3, D1-5, E1-3). In the case of exclusions, the need to conduct an EIA is also removed - see section 4.2 for a discussion on the various SEAs and EMFs, as well as the regulatory instruments that flow from them. These examples reflect the political will to use strategic-level assessments to create regulatory instruments (i.e., implementing tiered assessments and decision-making outputs) (Interviewees D4, D5, and E3). It also emphasises the role of tiering, where different tiers of assessments should inform the development of legislation and PPPPs (see Chapter 4; Rietkloof Case Study; Interviewees A2, A3, D1-5, E1-3). However, developing these instruments also raised concerns from within the government (DFFE, 2023; Interviewees D1, D2, D4, D5, E2, and E3) and from civil society (Summers Inc, 2024). These instruments are predominantly focused on removing the requirement to obtain environmental authorisation and the need to conduct an EIA process to support an application for environmental approval. The concerns, insofar as they relate to EA tiering, include:

- For tiering to be effective, any policy and law reform process should be preceded and informed by a strategic-level assessment – i.e., policy and law reform must be evidence-based. The foundation of tiering is that PPPPs are preceded and informed by an EA to ensure that environmental considerations and impacts are timeously considered in developing such PPPPs. One of the concerns related to developing these regulatory environmental instruments (provided for in section 24(2)(c) – (e) of the NEMA) in South Africa is that the strategic decisions to exclude the requirement for EA and the associated EIA process are not always evidence-based - i.e., the information on a strategic-level assessment is not adequate

[371] As discussed in Chapter 5, listed activities have been identified by the minister in terms of section 24(2)(a) and (b) of the NEMA (South Africa, 1998a), and no person may commence with these listed activities without obtaining an environmental authorisation. The EIA Regulations (South Africa, 2014a) set out the procedural requirements for conducting an EIA and applying for environmental authorisations.

or well presented to justify the strategic decision (i.e., law reform) to do away with the requirement for an EIA and environmental authorisation for projects.

- The use of instruments in instances where it results in the removal of the decision-making responsibility of the decision-making authority in reviewing the adequacy of the assessment of unknown impacts and associated mitigation measures is inappropriate. Removing the need for environmental authorisation should not be applied to instances where the assessment of unknown impacts is required (Interviewee D4).
- The establishment of different regulatory procedures for different sectors through the implementation of these instruments creates "uneven playing fields." It exacerbates the perception that EIAs are unnecessary red tape (Interviewees D5 and E3) – e.g., clearing three hectares of indigenous vegetation requires an EIA to be conducted and environmental authorisation to be obtained, whereas another sector is excluded from conducting an EIA and does not have to obtain environmental authorisation.
- The implementation of these instruments removes the right of interested and affected parties to be involved in EA and decision-making processes that would normally be required when conducting an EIA process to support an application for environmental authorisation.

In terms of the need for policy and law reform (C1.3), the case studies and the general interviews showed that there are individual provisions that enable the development of specific environmental management instruments. With the appropriate political will and resources, these provisions can be used to conduct tiered assessments. However, the legislative and policy context for the intentional establishment of tiering in EA and PPPs is lacking (including linkages between tiers). This absence of a clear legislative and policy context for EA tiering has resulted in a general lack of awareness about the role and contribution thereof in creating cascading levels of information that considers all components of the environment. Apart from having to prompt the interviewees on the meaning of tiering in EA, the diverging nature of the replies indicated that tiering is not part of the 'EA vocabulary' in South Africa. The interviewees did not clearly distinguish between the legislative and policy contexts for tiering in EA. They believed there was a gap between the policy intention (or purpose) on tiering and implementation thereof, resulting in the poor use of tiered assessment information (in particular EMFs and less so for SEAs). The general view that emerged from the research was that policy and law reform are needed to address the lack of clarity on the use of the various environmental management instruments provided for in the NEMA and the SEMAs and to clarify tiering arrangements for EA (DFFE, 2023; Interviewees D1-5, E2, and E3). The view is also held that EMFs must become a mandatory instrument - i.e., the development of EMFs should become mandatory (Interviewees D4, D5, E2, and E3). It is also clear that any future law reform must address both substantive effectiveness (sustainability) and efficiency (i.e., time and cost of regulatory processes). This view underscores the importance of

tiering to provide relevant information to support policy and law reform processes. In a media briefing in Parliament on 15 October 2024, the national Minister reflected on this by highlighting that the regulatory framework was done 12 years ago and that a review will be initiated, aiming to "*streamline governance and compliance processes and make the country's environmental regulations more efficient, transparent and effective"*. (Minister FFE, 2024).

In summary, whilst environmental legislation includes enabling provisions for developing specific assessment instruments at different tiers, tiering is not explicitly legislated. This limitation in the legislative framework for tiering is consistent with international experiences, as reported by Thérivel and González (2021). Specifically, the legislation does not clarify the creation of tiers of assessment and the tiering relationship between different assessment instruments. Two of the most significant characteristics of the South African EA system are that:

- the strategic level assessment tier is voluntary. The two instruments used at this level are SEAs and EMFs, but there is no mandatory legal requirement to use them; and
- EIA is the only mandatory regulatory EA instrument fully developed through legislation.

Therefore, the legislative framework for tiering in EA is inadequate. There is also a dearth of policy information on tiering related to EA - it is not explained or promoted in any policy framework with purpose and intent. The implications are that there is limited guidance on applying vertical, horizontal, and diagonal EA tiering, especially regarding how this influences EIAs as the lowest EA tier.

Overall, the assumption that environmental management policies and the legislative framework make clear provisions for tiered EAs and/or tiered decision-making is only partially supported.

Assumption A2: Authorities are committed to developing institutional arrangements required to establish strategic context (tiers) to support project-level assessments and decision-making.

Case study interviewees were requested to reflect on their general experience in EAs. The case studies were augmented by general interviews with experts involved in EAs and environmental planning, as well as the review of policies and legislation.

The research revealed several institutional and contextual factors that influence the implementation of EA tiering. As discussed in the previous section, how tiering is captured in legislation has a significant influence on its effective implementation. The EA system in South Africa has been implemented with a strong focus on EIA and regulatory efficiency. The lack of

clear tiering arrangements, as discussed above, resulted in EIAs being used as stand-alone instruments. This strong reliance on EIAs and the voluntary status of EMFs and SEAs has created a practice described by an interviewee as one where "*EMF and SEA information is being considered …..a 'nice to have' and its consideration* [in EIAs] *is perceived to be optional*". Another interviewee, when commenting on the lack of engagement with strategic-level information during EIA processes in general, noted that "..*we* [EAPs] *have lost our ability to apply integrated environmental management thinking*". In other words, the lack of clear tiering provisions in legislation contributed to weak vertical EA tiering practices with an over-reliance on EIAs and a weak focus on strategic-level assessments.

This research demonstrated South Africa's strong developmental focus as an important contextual factor influencing the effectiveness of EA tiering. This influence is illustrated by the political will to conduct a SEA for renewable energy developments and the subsequent development of revised regulatory procedures. In contrast, the Garden Route EMF did not have any strong development focus, and no resources were provided to update the Garden Route EMF since 2010. The strong developmental focus in South Africa was also illustrated by the priority attention given to human settlement development, resulting in the need for offsetting, which was regarded as the preferred outcome in applying the impact mitigation hierarchy in the Penhill case study. The general interviews confirmed that the case study findings were consistent with general EA practice in South Africa.

This research also found a limited focus on strategic-level EAs in the organisational structures of environmental authorities. Consequently, inadequate human resources in government are allocated toward conducting strategic-level assessments, further exacerbated by the voluntary status of EMFs and SEAs, as well as the need for austerity measures in all government institutions due to the downturn of South Africa's economy.

The broad definition of 'environment' in legislation enables EA in South Africa to have an inherent sustainability focus that considers socio-economic and socio-ecological considerations. However, this research found such a broad definition to be both an enabling and limiting factor. It is enabling insofar as the consideration of social, economic and environmental factors in support of sustainable development is captured in legislation. It is a limiting factor insofar as the complex nature of sustainability as a concept, combined with the application thereof in complex socio-ecological and socio-economic environments, results in sustainability outcomes being difficult to achieve and measure in practice.

Replies from interviewees indicated that there was, in principle, support for the notion of tiering (C2.1). In general, there is effective functional-specific environmental planning within the

environmental sector (i.e., coastal management, air quality, biodiversity, and waste management plans) at various spheres of government (C 2.2 and C2.3).[372] Functional-specific planning is primarily driven by the legal requirements in the environmental legislation (see section 4.2.1 for a discussion on the Specific Environmental Management Acts).[373] However, no mandatory legal requirements exist for strategic-level EAs or integrated plans/strategies to pull everything together in a single policy/strategy/plan (C2.2). It was also noted (Interviewees D1, D5, and E1) that while the role of the Environmental Implementation Plans (EIPs) at provincial and national levels[374] is to integrate/coordinate environmental performances of different sector departments' strategies/plans, it was not effective in doing so. EIPs were seen as merely combining the plans and strategies of different state departments without critically assessing these separate contributions and providing strategic direction and managing environmental/sustainability performance in a coherent and integrated manner. The only instruments available at a strategic level that can assess and pull together all inputs, are EMFs and SEAs. However, both these instruments are voluntary, and their implementation depends on political will and the allocation of sufficient resources (Interviewees A4, B3, C3, D1-5, E1, and E3).

The research found that time and financial constraints in government significantly affect tiering. The research also showed that the voluntary status of EMFs and SEAs means that without political will, existing limited financial resources are unlikely to be allocated toward developing EMFs and SEAs. The effect of austerity measures is especially felt at the provincial level and in some provinces, no funding is available to conduct EMFs.

Also, with the primary focus being on EIAs, time as a resource is focused on achieving regulatory efficiency and adhering to regulated timeframes in conducting and reviewing EIA applications - the stringent timeframes in the EIA Regulations put pressure on EAPs, especially in reviewing EIAs. This pressure was reflected in the comments of an interviewee that "*there is no time to consider the strategic context, especially if that means that more information must be required…..the timeframes do not allow for additional information to be requested*". This challenge was illustrated in the George Rex case study, where the restrictive timeframes of the EIA regulations did not allow for additional information to be requested, resulting in the submission of three applications to deal with outstanding non-substantive information that could have been resolved by requesting additional information as part of the first application.

[372] Although it is acknowledged that there are different levels of financial and human capacity in the various provinces to do so.
[373] The various SEMAs contain requirements for the development of strategic level plans and strategies, and section 11 of the NEMA sets the requirement for Environmental Implementation Plans (see Chapter 3 for a more detailed discussion of these requirements) (South Africa, 1998a).
[374] As required in terms of section 11 of the NEMA (South Africa, 1998a).

The case studies, corroborated by the general interviews, consistently confirmed that the financial and human resources limitations were the primary reason for the lack of institutional arrangements for strategic-level EAs – i.e., not being able to establish and maintain organisational structures to cater for well-resourced units to conduct integrated planning and strategic level assessments, supported by institutional policies and strategies to facilitate integrated planning. The case studies and general interviews (Interviewees D2, D4, D5, E1, and E3) also confirmed that political pressures in certain sectors resulted in resources being made available to conduct sector-specific SEAs (such as in the renewable energy sector). Interviewee D3 noted that in the KwaZulu-Natal province, there was a specific focus on the use of EMFs based on the "….. *varied agree of capacity in Municipalities and the environmental information is easily disregarded and the EMF has legal standing* [to ensure that] *environmental management considerations were addressed*". The availability of financial resources was highlighted as the biggest challenge in maintaining EMFs in the KwaZulu-Natal province. Interviewee D1 confirmed that the North-West Province had a strategy to develop EMFs for every District Municipality, depending on the availability of additional resources. In Mpumalanga Province, there was no specific strategy to promote tiering in EA (Interviewee D2), although there was a strong focus on functional-specific environmental planning in the form of systematic conservation planning (i.e., biodiversity planning). Whilst two of the three districts have developed EMFs, these were outdated by more than 12 years. The Gauteng Province is the only province that conducted a provincial-level EMF (Interviewee D4; Gauteng Province, 2022). The Western Cape Province does not have a specific strategy but focuses on the municipal-level EMFs, although no financial resources are available for the appointment of external service providers and limited internal human resources are available for this purpose (Interviewees D5 and E1).

The case studies (C2.1, C2.2, and C2.3), corroborated by general interviews (interviewees A3, A4, B3, C4, D1-5, E1-3), indicated that the lack of establishing and implementing tiered EA and/or integrated environmental planning (i.e. pulling all functional-specific environmental planning together) by environmental authorities, is due to one or more of the following institutional component being missing:

- A clear institutional strategy to establish tiered PPPs that are informed by SEAs or EMFs.
- A clear strategy for conducting functional-specific environmental planning within the different functional areas of environmental management (i.e., climate change, biodiversity, coastal management, etc.).
- Institutional structures that made provision for functions related to integrated planning and strategic-level EAs (with clear roles and responsibilities) to pull all functional-specific planning into an integrated plan/policy.

- The availability of adequate time, financial and human resources to implement the above.

While some of the above components were present in the environmental authorities in provinces (Interviewees D1, D2, D3, D5, E1, and E2) and DFFE (Interviewees C3, D4, and E3), there was no coherent and deliberate strategy for establishing formalised institutional arrangements in support of tiering in EA – strategic-level EA were not regarded as a priority.

Insofar as the use of EMFs and SEAs was concerned, the case studies, supported by general interviews (Interviewees C3, D4, D5, E1, and E3), confirmed that DFFE is not investing in (i.e., conducting or funding) EMFs but is investing resources in conducting SEAs focused on reducing regulatory requirements related to specific sectors (Interviewees C3, D4 and E3). On the other hand, provinces were investing resources in EMFs as the primary instrument for strategic-level assessments /integrated environmental planning, focused on geographical areas that coincide with municipal boundaries (Interviewees D1, D2, D3, D5, E1, and E2). However, in provinces, the availability of adequate financial and human resources to maintain this investment was a major constraint (Interviewees D1, D2, D3, D5, E1, and E2).

The case studies also illustrated the differences in the effectiveness of tiering mandated through legislation compared to a voluntary tiering dispensation. A well-established tiering system in the land use planning sector is in place and mandated through legislation. In the environmental sector, tiering in EA is voluntary. No tiering system for PPPs and EA exists that is mandated by legislation. In two case studies, diagonal tiering between the SDF and the EIA played a significant role during the EIA process. In these instances, human and financial resources were readily allocated by Municipalities to maintain tiering in land use planning (i.e., SDFs) as a statutory requirement. In comparison, no EMFs were available in the Rietkloof case study, and the Garden Route EMF was outdated by 14 years. No human or financial resources were allocated to review the Garden Route EMF or to conduct an EMF for the Laingsburg Municipality.

In summary, functional-specific environmental planning[375] effectively develops PPP outputs for the different functional areas within the environmental sector at the various spheres of government as mandated by legislation. However, no legal requirement or strategies exist that focus on strategic-level EAs that can integrate all functional-specific environmental planning into a single output. However, there are instances where tiering in EA is established for certain sectors, driven by the political pressure to reduce regulatory requirements related to infrastructural development rather than an overall strategy to develop tiered PPPs informed by EAs. While some institutional elements to support tiering are present in the environmental authorities in provinces and DFFE,

[375] Although the varying degrees of success thereof are influenced by human and financial resource capacity.

there is no coherent and deliberate strategy to establish formalised institutional arrangements to support PPPs and tiered EAs. EMFs emerged as a key strategic-level EA instrument for provincial environmental authorities, whereas SEAs are the preferred instrument for the national government (DFFE). Although there are examples where tiering in EA has been implemented, the institutional resources are inadequate to effectively implement tiering in EA in all spheres, across different sectors, and geographical areas.

Overall, the assumption that authorities are committed to developing institutional arrangements required to establish a strategic environmental context for project-level assessments and decision-making is only partially supported.

9.3 The Input ToC Component

Assumption A3: To what extent is a relevant strategic environmental context available in the form of a strategic level assessment and/or environmental management framework, to guide assessment and decision-making at the project level?

Case study interviewees were requested to reflect on their general experience in EAs, and this was augmented by general interviews with experts who were informed about EAs and environmental planning and the review of policies and legislation. These interviews confirmed that different informants contribute to the creation of strategic environmental contexts for EIAs:

- Functional-specific environmental planning informants developed for the different functional areas in environmental management (such as biodiversity plans, coastal management plans, air quality plans, etc.). Mandated through legislation, these environmental planning PPPs were readily available across the country in all provinces. This was evidenced by the case studies and corroborated by general interviewees.
- Strategic-level EAs in the form of SEAs and EMFs[376] are enabled through the NEMA, but their implementation is voluntary. EMFs and SEAs are not available for all geographical areas (DEA, 2023; interviewees A 1-3, B1, C3 and 4, D1-5 and E1-3).
- Strategic planning instruments in other sectors that may contain environmental information or information relevant to a specific EIA process. SDFs emerged as one of the key informants

[376] The Environmental Impact Assessment and Management Strategy for South Africa (EIAMS) (DEA, 2014) confirms that SEAs and EMFs are the primary instruments for strategic-level environmental assessment and environmental planning.

that were often referenced in EIA processes (DEA, 2017c; Interviewees B1, C3, D1-5, E1, and E2).[377]

Interviewees C3, D1, D3, D4, D5, E1, and E3 also confirmed that EMFs were the preferred strategic-level EA instrument in provinces but have not been developed for all areas due to resource constraints. The important role of diagonal tiering also came to the fore in all the case studies and interviews. While the whole country was covered in SDFs, EMFs covered less than 50% and where no EMFs existed, SDFs often became the key strategic environmental informant to EIA processes (Interviewees B1, C3, D1, D3, D5, and E1). However, the environmental content of SDFs, and more specifically, the strategic environmental context, was often considered inadequate. This view is illustrated by the comment made by one of the interviewees that "*the inadequate consideration of environmental issues in SDFs is one of the reasons why we do EMFs*…".[378] Although the case studies, corroborated by general interviews, revealed that the strategic environmental context in EMFs did not always meet the expectation in guiding EIA processes, they were still regarded as important informants.

The case studies also reflected the practical challenges related to the theoretical notion of tiering. In practice, tiering does result in sequential cascading tiers of assessment and PPPPs, as reflected by Arts *et al. (*2005), Arts *et al.* (2011), Thérivel and González (2021), and Arts and Fischer (forthcoming). In two of the three case studies, the EIAs had a long history that preceded the commencement of the SEA and EMF processes, respectively. The general interviews confirmed that this generally applies to EA in South Africa. The challenge of establishing PPPPs supported by tiered EAs is exacerbated by the voluntary status of EMFs and SEAs, often resulting in the absence of the strategic-level assessment tier, even though it is regarded as an essential component of a tiered EA system. Interviewees expressed concern that it is unclear how environmental considerations informed the formulation of PPPs in other sectors (such as transport, mining, agriculture and land use planning) where EMFs do not exist.

The research also found that where tiered assessments were conducted, it has the potential to enable EIAs to become more effective. However, the research found that vertical tiering in EA failed due to poor EA practices. The presence of horizontal tiering between the land use and environmental sectors was a strength, resulting in the strategic environmental context (presented in EMFs) indirectly being influenced by EIA through diagonal tiering between the SDF and EIAs.

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[377] Guidance is provided for the legal requirement to consider need and desirability during EIA processes and decision-making in the Guideline in Need and Desirability (DEA, 2017c). The guideline, through sets of questions, requires that EIAs consider the contents of SDFs in the EIA process.

[378] Interviewee D3

Therefore, although vertical tiering in EA failed, the case studies showed that vertical, horizontal and diagonal tiering as a collective, can play a valuable role in influencing how cumulative impacts (Rietkloof case study), the impact mitigation hierarchy (Penhill case study), trade-offs (Rietkloof and Penhill case studies) and alternatives (all three case studies) are being addressed in EIAs.

In summary, a strategic context in the form of SEAs and EMFs was not available in all instances for all EIAs across South Africa. There was a clear trend that the national government (DFFE) primarily focused on SEAs to inform the development of regulatory instruments as alternatives to EIAs, whereas provinces primarily focused on EMFs. The case studies also highlighted that while tiering is of value as a theoretical yardstick, the implementation thereof in practice is more complex. In the void left where no EMFs and SEAs are available, functional-specific environmental planning deliverables and PPPs in other sectors, especially SDFs, are considered in EIA processes through diagonal tiering.

Overall, the assumption that a relevant strategic environmental context is available as a strategic-level EA (i.e., EMFs and SEAs) to guide EIAs and decision-making at the project level is not supported.

Assumption A4: Functional specialists are involved in developing strategic-level tiers and provide clear guidance in setting a strategic context and the translation thereof into project-level inputs.

The legislation did not set explicit requirements for specialist input for SEAs and EMFs. There are no legal provisions that cover the content requirements of SEAs. The EMF Regulations (South Africa, 2010) do set the content requirements that include the need to identify "*environmental attributes of the environment in the area, including the sensitivity, extent, interrelationship and significance of those attributes*" and "…..*specific socio-cultural values and the nature of those values*".[379] These requirements imply the involvement of specialists. The guidelines on EMFs[380] and SEAs[381] implicitly set requirements for specialist involvement by listing various functional areas (geology, biodiversity, air quality, etc.) for which information was required.

[379] The EMF Regulations (South Africa, 2010) do set the content requirements that include the need to identify "*environmental attributes of the environment in the area, including the sensitivity, extent, interrelationship and significance of those attributes*", and "…..*specific socio-cultural values and the nature of those values*" (Regulation 4(b) and (h) of the EMF Regulations).

[380] EMF Guidelines (DEAT, 2010).

[381] SEA guidelines (DEAT, 2007).

The case studies reflected a strong involvement of specialists in creating strategic environmental contexts in both EMFs and SEAs. The specialists covered all the relevant functional areas across the socio-ecological and socio-economic spectrum. This contributed to the scientific/technical credibility of these strategic-level EA outputs. Although there were different views on the adequacy thereof, the deliverables from the case study EMFs and SEA guided EIA processes. In EMFs, such guidance included the identification of environmental management zones and their respective management guidelines (CoCT, 2013; Earth-Inc, 2010; Interviewees A3, C3, D4, and D5), and the SEA developed protocols to guide specialist studies during EIA processes (South Africa, 2018a; 2018b; Interviewees A3, A3, D4, and D5). The interviewees confirmed that as general EA practice, the contents of EMFs and SEAs are well-informed by specialist inputs (Interviewees A3, A4, B3, C3, D4, and D5).

In summary, the case studies and interviews confirmed that specialist inputs inform the development of EMFs and SEAs. Although neither the legislation nor the guidelines explicitly set requirements for specialist inputs, the information requirements in the legislation and guidelines could only be generated through specialist involvement. The specialist inputs are also translated into providing strategic guidance to EIA processes, although there were different views on the adequacy thereof.

Overall, the assumption that functional specialists are involved in setting a strategic context and translating it into project-level inputs is supported.

Assumption A5: The strategic environmental context was the outcome of an evidence-based policy formulation and a credible environmental assessment process.

In all the case studies, the strategic environmental contexts were the result of a rigorous scientific assessment process (C5.1). The specialist information covered all relevant scientific areas across the socio-ecological and socio-economic spectrum. Horizontal tiering at the strategic level between the environmental and other sectors, especially the land use planning sector, contributed to this outcome. From a vertical tiering perspective, the linkages between the legislative/ policy context, the strategic-level EAs, and the project-level EIA were weak. The case studies showed that although the various sectoral policies did not explicitly provide for tiering, they (indirectly) created a strategic policy context that could be interpreted to support tiering. The general interviewees collaborated on the absence of a clear policy context for tiering (Interviewees A3, A4, B3, C3, E1, E2 and E3).

Both the EMF Regulations (South Africa, 2010) and the guidelines on EMFs (DEA, 2010) set content and procedural requirements that guided the CoCT 2013 EMF and the Garden Route EMF[382] to be credible and evidence-based. The content and procedural requirements for SEAs are not legislated for, but guidelines were drafted (DEAT, 2007) to guide the development of credible, evidence-based SEAs.

Insofar as the currency (i.e., updated status) of the strategic contexts is concerned (C5.2), EMFs and SEAs are voluntary instruments, and the updating thereof is not legislated. For the strategic contexts to remain current, it depends on the political will and availability of resources to conduct regular reviewing and updating thereof. This dependency was illustrated by the case studies with the contrasting decisions not to update the Garden Route EMF and the Renewable Energy SEA (Interviewee A3 and C3), compared to the willingness to update the CoCT EMF. Interviewee D5 confirmed a willingness in the Western Cape province to develop EMFs, but inadequate resources were available. Interviewee D2 confirmed the same for the Mpumalanga province, Interviewee D3 for Kwazulu-Natal province, and Interviewee D1 for North-West province.

The currency of information in SEAs and EMFs is influenced by its voluntary status. As already highlighted, there are no legal requirements to conduct SEAs and EMFs and no requirement that the information contained in them be updated. The dependency on political will and resource availability was best described by the comments of one of the interviewees that "….*funds and human resources follow legal mandates*".

In terms of the strategic environmental contexts being the outcome of a consultative process (C5.3), all the case studies performed well, but acknowledging that public consultation at a strategic level could not be expected to reach all members of society on the ground. The strong focus on public participation also created opportunities for value-based information to contribute to rational science/technical information provided by specialists. Public consultation allowed these instruments to play a knowledge brokerage role that informed and empowered stakeholders. It created opportunities for communities to be empowered to take ownership of planning initiatives and EAs that influence their living environments and participate in such processes to co-create a strategic environmental context.

In summary, the strategic environmental contexts provided by the EMFs and SEA are the outcome of credible, evidence-based, EA processes that consider all components of the environment – i.e., socio-economic and socio-ecological aspects. From a tiering perspective, the

[382] Although the Garden Route EMF preceded the EMF Regulations, it was informed by draft legislation at the time (Interviewee C3).

strategic contexts are informed by the legislative and policy contexts, although tiering is not explicitly addressed in any of these policy documents. The strategic environmental contexts are also the outcome of consultative strategic-level EA processes that are effective at a strategic level, providing the opportunity for EAs to play a knowledge brokerage role.

Overall, the assumption that the strategic environmental context is the outcome of evidence-based policy formulation and a credible EA and/or planning process is supported.

Assumption A6: The relevant key role-players in the EIA process are aware of and support the strategic environmental context.

The development proposals contained in the case studies were largely consistent with the strategic context provided by the SEA and EMFs. However, the case studies reflected that the key EIA stakeholders (i.e., the applicant, EAP, and specialists) and decision-making authorities did not critically engage with the strategic context (C7.1). Although awareness of these strategic informants was conveyed during case study interviews with EAPs and the officials reviewing the EIA information, these acknowledgments were not replicated and documented in the EIA reports or the EIA decisions issued by the decision-making authorities. Therefore, the value of the strategic context and the information flowing from tiered EAs were not conveyed to other stakeholders. The strategic contextual information contained in the EMFs and SEA did not inform the reasons and reasoning of the decision-makers during the decision-making processes. Unfortunately, the interested and affected parties/ stakeholders could, therefore, not see or understand the value that the EAPs and decision-makers attached (or should attach) to the strategic context. This lack of reasons and reasoning in the EIA and the decisions diminished the knowledge brokerage role that the EAP and decision-making authorities should have played.

In all the case studies, no indication was given that stakeholders from other sectors were aware of the strategic context provided by the SEA and EMFs. Even if they were aware of its existence, this was not conveyed in their written inputs during the EIA processes (C6.2). When considering the negative comments and appeals submitted by interested and affected parties (mainly landowners near the proposed developments), the strategic contexts, by implication, were not supported by everyone (i.e., the NIMBY effect). Although this seemed to contradict the findings of the three case studies that the SEA and EMFs were the outcome of a consultative process, it must be highlighted that in drafting the SEA and EMFs, the public consultation was conducted at a strategic level and was not intended to (and could not reasonably be expected to) reach all landowners and members of the society (Interviewees A3, B3, and C3). It followed that some

interested and affected parties who participated in the EIA processes were not aware of the strategic context, or if they were aware of it, they did not attach any value to it. Also, effective consultation did not imply that the needs and desires of all parties were or could be met.

Municipalities, as the planning authorities, supported the strategic environmental contexts through their IDPs and SDFs, which were generally aligned with the EMFs/SEA. In two of the three case studies, the conservation authorities actively participated in the EIA processes, and considering the absence of negative comments, they supported the strategic context. Little evidence was found in the case studies on the involvement of other sector authorities in the SEA and EMF processes.

In summary, the lack of critical engagement with the strategic context by all stakeholders in the case studies meant that the knowledge brokerage value of tiering in EA, through the SEA and EMFs, in empowering these stakeholders to participate in EIA processes, was lost. This distinct absence of acknowledging the strategic environmental context also indicated that stakeholders were unaware of the information flowing from the strategic EA tier, or even if they were aware thereof, they attached no value to it.

The assumption that the relevant key role-players in the EIA process are aware of and support the strategic environmental context is only partially supported.

Assumption A7: The preceding tiered environmental assessment considers policy/legislation inputs (vertical tiers), as well as other sector inputs (horizontal/diagonal tiering).

In all three case studies, the strategic context was informed by and was responsive to relevant sector policies and legislation (C7.2 and C1.2). In every instance, the EIA documentation included extensive sections setting out the applicable policy and legislative contexts. The Renewable Energy SEA, the CoCT 2013 EMF, and the Garden Route EMF played important tiering roles in bridging the gap between non-spatial national /provincial level policies and plans, as well as project-level assessments. While sector policies and legislation did not specifically promote tiering in EA, they constituted important strategic informants that contributed to the strategic context for the sector within which the EIAs were conducted.

In the Rietkloof Case Study, there was a strong policy and legislation context to support the renewable energy sector. The Renewable Energy SEA established an additional tiered strategic context and led to the establishment of revised regulatory procedures for the renewable energy sector, creating vertical tiering between the policy, strategic assessment, and project-level

assessment in the renewable energy sector. In both the Penhill and George Rex Case Studies, urban planning was supported by a strong policy and legislation context (C7.1 and 7.2) based on the clear tiering requirements for land use planning through the development of SDFs at different administrative levels.[383]

In all three case studies, the functional-specific environmental planning contexts were informed by clear legislative and policy requirements for the different functional areas, such as air quality, waste management, biodiversity, heritage, and more (see section 4.2.1). However, policies are very strategic, and without interpreting policies at national and sub-national levels, they will always be difficult to apply directly to project-level EIAs. Also, principles contained in legislation and policies are strategic and, as such, open to interpretation and different understandings, which often leads to a lack of consistency and coherence in the interpretation and implementation of these strategic informants by stakeholders and authority decision-makers (DEA, 2014). These inconsistencies were also illustrated in the case studies - e.g., offsets being the outcome of applying the impact mitigation hierarchy (Chapter 7), different views resulting in appeals being submitted (Chapters 6 and 8) and refusals being issued (Chapter 8).

The functional-specific environmental planning documents were considered and referenced by the specialists during the EIA processes. However, the SEA and the EMFs were not referenced. Therefore, the case studies highlighted the fragmented nature of environmental informants to the EA processes and that the functional-specific environmental planning informants were considered more relevant to the EIA processes than the strategic level EAs in the form of the SEA and EMFs (that integrated all these various functional-specific planning documents). From a tiering perspective, the officials in the environmental authorities involved in the case studies did not express a view on or differentiate between strategic-level EA and functional-specific environmental planning. There was no reflection on the relationship between these different functional-specific environmental planning informants and the strategic environmental context expressed in the EMFs and SEA. As such, the value of tiering in EA in integrating the different functional-specific environmental planning outputs and critically assessing the socio-ecological and socio-economic implications thereof was not reflected on, or used during EIA processes and regulatory decision-making.

In all the case studies, horizontal tiering occurred between the SDFs and the SEA/EMFs (C7.1). In the two case studies involving EMFs, the stakeholders referenced the SDFs but not the EMFs. Therefore, based on the strength of horizontal tiering between the SDFs and EMFs, the EMFs

[383] These different levels refer to both differences in geographical /spatial extent (i.e., national, provincial, regional and municipal), as well as spheres of government (i.e., national, provincial and Municipal) in accordance with the Constitution (South Africa, 1996).

indirectly influenced the EIA process via diagonal tiering between the SDFs and the EIAs (C7.2 and 7.3). The strong reliance on the strategic land use planning context (Chapters 7 and 8) flows from the tiering requirements in the land use planning legislation, resulting in a well-established tiering practice. National, provincial, regional, municipal, and sub-municipal levels of land use planning are provided for[384], as well as the alignment thereof[385] and horizontal tiering (with the requirements that other sector strategies/plans must be considered in drafting SDFs).[386] Added to this, is the legal requirement that SDFs must be reviewed every 5 years. The importance of considering the SDF in decision-making is also underscored by the provision that "[a] *Municipal Planning Tribunal or any authority required or mandated to make a decision in terms of this Act or any other law relating to land development, may not make a decision which is inconsistent with a municipal spatial development framework*".[387] The above legislative context led to the establishment of a strong tiering system and culture within the land use planning sector, resulting in resources being allocated towards this mandate. Also, regulatory decision-making is required to consider and align to these PPPs.

In comparison, the case studies, corroborated by general interviews and the review of policies and legislation, showed that no such tiering system and culture existed in the environmental sector related to EAs. There is a lack of clearly defined tiers and the strategic EA tier is voluntary. Also, the information in strategic EA tiers was poorly considered in regulatory decision-making, meaning that vertical tiering in EA failed. In two of the case studies, it was the strength of the tiering in the land use planning sector (C7.1) and the strength of the horizontal tiering between the EMF and SDF, which resulted in diagonal tiering (C7.1) between the municipal SDF (as a strategic planning tier) and the EIA (as the local EA tier). Therefore, diagonal tiering rather than vertical tiering paved the way for informed decision-making and incorporating strategic environmental informants into the EIA process.

In summary, vertical tiering between the legislative/policy context and the strategic environmental assessment context, as well as horizontal and diagonal tiering, occurred between the environmental sector and other sectors. However, there are no legislative requirements for tiering in EA, and as such, the success of vertical tiering in EA varies and is highly dependent on political

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[384] Section 12 – 22 of the SPLUMA (South Africa, 2013).

[385] Section 22(3) of the SPLUMA provides that "Where a provincial spatial development framework is inconsistent with a municipal spatial development framework, the Premier must…take steps…to ensure consistency between the two".

[386] Section 12(5) of the SPLUMA provides that "*a municipal spatial development framework must assist in integrating, coordinating, aligning and expressing development policies and plans emanating from the various sectors of the spheres of government as they apply within a municipal area*.".

[387] Section 22(1) of the SPLUMA (South Africa, 2013)

will and the availability of resources. The void left by a lack of vertical tiering in EA is partly filled by diagonal tiering between SDFs and EIAs.

The assumption that the preceding tiered EA and/or environmental planning framework considered policy/legislation inputs (vertical tiers), as well as other sector inputs (horizontal/ diagonal tiering), is supported but with varied success.

9.4 The Activity ToC Component

Assumption A8: EAPs, in compiling EIAs and officials in the review thereof, are aware of and understand the role of strategic contextual informants when conducting their duties.

The case studies highlighted two distinctly different purposes of the strategic environmental contexts created by EMFs and SEAs. The first was where the SEA/EMF outputs provided strategic contextual information (C8.1, C8.2, and C8.3) that should be considered during EIA processes - e.g., the Garden Route EMF and the CoCT EMF. These EMFs did not introduce new or revised regulatory procedures. The second purpose, as illustrated by the Renewable Energy SEA, was to develop specific deliverables (i.e., protocols for specialist inputs and revised regulatory procedures) that revised the regulatory requirements of the EIA process for renewable energy applications in REDZs. In the Rietkloof Case Study, the revised regulatory process was readily accepted and used. However, there was no critical engagement with the SEA information during the EIA process beyond the use of the revised regulatory process based on the location of the Rietkloof Windfarm in the Komsberg REDZ and using this information in motivating 'need and desirability'.[388]

In all the case studies, the information contained in these strategic informants was poorly considered (or lacking) in the reasoning related to assessing impacts and applying the impact mitigation hierarchy (C8.2, C8.3, and C8.4).

In the Penhill and the George Rex Case Studies, there was a distinct lack of evidence in the EIA documentation that the CoCT 2013 EMF and the Garden Route EMF were considered. However, the strategic environmental contexts were indirectly considered through diagonal tiering between the SDFs and EIAs (C7.3). Also, the strategic tiers of information available within the different

[388] This includes the legal requirements for the strategic context provided by EMFs and SDFs as part of the need for and desirability in terms of the EIA Regulations (South Africa, 2014).

functional areas of environmental management (such as biodiversity) were considered during the EIA processes.

Insofar as the role of tiering in influencing the selection of alternatives (C8.3) and the application of the impact mitigation hierarchy (C8.4) was concerned, there seemed to be a disjunct between the theory of tiering and the practical implementation thereof. The case study interviewees were of the opinion that (in theory) tiering, especially EMFs regarded as a key strategic-level instrument, should inform the scope of alternatives. The case study interviewees regarded alternatives as a key component of the impact mitigation hierarchy that should be informed by the strategic context. However, they acknowledged that this did not happen in the case studies, and the general interview replies corroborated that this is the same in general EIA practice (interviewees D2, D4, D5, E2, and E1). These interviewees also noted that opportunity costs and cumulative impacts were difficult to determine if only considered in the project-EIA space without understanding the broader landscape. One of the interviewees described the role of EMFs as follows: "*Alternatives must also be addressed at a strategic level in designating certain geographical areas for priority land uses such as agriculture, mining, protection, etc., and these trade-offs could already be done at strategic levels*". The interviewees did not believe that the EMFs and SEAs currently fully achieve this aim, and the reasoning presented in EIAs confirmed this perspective (Interviewees C3, C4, D1-5, and E1-3). The poor utilisation of EMF and SEA information meant that the value of tiering in guiding appropriate development opportunities (including considering alternatives) and impact mitigation was lost.

In all the case studies, the development proposals were broadly aligned with the strategic context, meaning that the type of development and the location thereof were consistent with the strategic context provided in the SEA and EMFs (with scale thereof and site-specific impacts to be determined at EIA-level). However, not all interested and affected parties supported the development proposals and objected during the EIA processes. Although their inputs during the EIA processes did not refer to the strategic environmental contexts, by implication, they did not support the EMFs and SEA outcomes (C8.5). In all the case studies, engagement with the strategic environmental context in the reasoning provided in the environmental decisions was either weak or lacking, even where such information was provided as part of the EIA processes. This is inconsistent with the legal requirements that the need for development and the desirability (i.e., timing and placement) thereof must be considered[389] within its strategic environmental context (C8.6).[390] From a regulatory perspective, not considering the vertical-tiered information

[389] Regulation 2, 3, Appendix 2 and 3 of the EIA Regulations, 2014 (South Africa, 2014a).

[390] The 'Guideline on Need and Desirability' (DEA, 2017c).

contained in the EMFs is a serious omission in the application of fair and just administrative action.[391] From a knowledge brokerage perspective, the value that the decision-makers attached to the strategic context (other than acknowledging and utilising the revised regulatory process), was not reflected in the reasons or reasoning in the written decision.[392] Unfortunately, the interested and affected parties/ stakeholders, therefore, could not understand the value that the decision-maker (should have) attached to the strategic context (C8.6), negatively impacting the knowledge brokerage role that tiering and the decision-making authorities should have played - i.e., the importance of knowledge sharing and transfer, in breaking down barriers that impede interaction, healthy communication, and collaboration. The implications for EIA practices in general are that if the decision-making authorities do not set an example for attaching value to the strategic environmental context, stakeholders will also not do so.

In summary, it was generally acknowledged that strategic-level assessment instruments should inform the application of the impact mitigation hierarchy during EIA processes, especially the first step, 'avoidance'. However, the research showed that this is poorly done, and the strategic environmental contexts (provided by EMFs and SEAs) do not receive adequate attention during EIA processes and decision-making. Other strategic informants are readily used, i.e., functional-specific environmental planning outputs, such as biodiversity plans, and other sector plans, such as SDFs. Therefore, while vertical tiering in EA failed, the strategic environmental context was indirectly considered during the EIA process, based on tiered information produced in other functional areas and through diagonal tiering between the SDFs and EIAs. The case studies also reflected that from a knowledge brokerage perspective, the value that the EAPs and the decision-makers attached to the strategic context (other than acknowledging and utilising the revised regulatory process) were poorly reflected in the reasons and the reasoning contained in EIAs, and lacking in the written decisions issued by authorities. Therefore, interested and affected parties/ stakeholders did not understand the value that EAPs or decision-makers (should have) attached to the strategic context. The levels of awareness about tiering in EA claimed during interviews were not reflected in EIA practices.

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[391] Section 24O(1)(v) of the NEMA, regulation 16(3)(c) of the EIA Regulations, Appendix 1, 2 and 3 to the EIA Regulations (GNR 326 of 7 April 2017), and regulation 5 of the EMF Regulations (GN R547 of 18 June 2010).

[392] Lezmin 2588 CC v The Provincial Minister for Local Government, Environmental Affairs & Development Planning, Western Cape & the City of Cape Town (21935/2009), Judgement delivered on 18 October 2010. In the judgment, the following is also quoted another judgment to highlight that decision-makers should explain decisions "…..*in a way which will enable a person aggrieved to say, in effect. "even though I may not agree with it, I now understand why the decision went against me. I am now in a position to decide whether that decision has involved an unwarranted finding of fact, or an error of law, which is worth challenging. This requires that the decision-maker should set out his understanding of the relevant law, any findings of fact on which his conclusions depend (especially if those facts have been in dispute), and the reasoning processes which led him to those conclusions. He should do so in clear and unambiguous language, to in vague generalities or the formal language of legislation……" (Judge Blignault, 2010)*.

Overall, the assumption that EAPs, in compiling EIAs and officials in the review thereof, are aware of and understand the role of strategic contextual informants when conducting their duties is only partially supported.

9.5 The Output ToC Component

Assumption A9: The EIA decision will validate and strengthen the strategic environmental context.

This assumption emphasised the regulatory requirement that decision-makers must consider 'need and desirability'[393] and provide adequate reasons and reasoning on considering tiered EA information during decision-making.

In the case studies, the reasoning behind the decisions on how the strategic environmental context was considered and whether the development proposals were consistent with the strategic environmental context was lacking (C9.1). Despite this lack of reasoning, this research found that the development proposals were broadly consistent with the strategic environmental contexts. However, as already highlighted (Assumption A8), the decisions issued did not make any reference to the strategic environmental context provided by the EMFs and the SEA or to 'need and desirability'. In two case studies involving EMFs, the lack of consideration of vertical tiering constituted a major flaw.[394] Interested and affected parties/ stakeholders could not follow the reasoning of decision-makers in attaching value to the strategic context.

In summary, although the decisions in two of the three case studies were consistent with the strategic contexts, there were inadequate reasons and reasoning contained in the EIA decisions related to the strategic context. The lack of reasons and reasoning in the decisions meant that the decision-makers did not clarify how the decisions validated and strengthened the strategic environmental context.

The assumption that the EIA decision will validate and strengthen the strategic environmental context is only partially supported.

[393] The EIA Regulations (South Africa, 2014a) dictate that need and desirability must be considered. Need and desirability require that the need for development, as well as the timing and placement thereof, be considered during decision-making. Need and desirability also require that the strategic environmental context must be considered (DEA, 2017c).

[394] The EMF Regulations (South Africa, 2010) require the EMF information must be considered in decision-making, but the EIA decisions are void of any reference to the relevant EMFs.

9.6 The Immediate Outcome ToC Component

Assumption A10: Tiered environmental assessments provide clear guidance to lower tiers to facilitate sustainability outcomes at project level assessment and decision-making.

The case studies reflected different levels of conformance to criteria related to this assumption. The Renewable Energy SEA promoted a specific type of development and the location thereof, but not the scale (also see C1.1 and section 6.3.1). The SEA provided clear guidance to specialists (through protocols). The integrated CoCT EMF/SDF provided information on the sensitivity of environmental attributes and informed the type of development considered appropriate, but not detailed enough to inform the extent and significance of impacts (see section 7.3.1). In the George Rex Case Study, the Garden Route EMF was not considered, and reliance was placed on diagonal tiering between the Knysna SDF 2017 and the EIA (see section 8.3.1). The EMF highlighted some of the sensitive site attributes to be considered but did not make specific recommendations for developing the George Rex site. In general, the case studies, corroborated by the general views (Interviewees A2, A3, B3, D1, D3, D4, D5, E1, and E3), confirmed that EMFs did not take away the need for an EIA process or change the regulatory requirements, but provided strategic information to be considered by stakeholders during EIA processes and could influence the scope of the EIA..

The replies from case study interviewees, confirmed by general interviews, reflected two perspectives. The perspective that EMFs and SEAs, especially the former, provide valuable information to guide EIA processes (Interviewees A3, A4, B3, C3, C4, D1, D3, D4, D5, E1, and E3), but that it requires EAPs and decision-making authorities to interpret the information based on the merits of individual EIAs. According to this view, the perception that EMFs and SEAs do not add value is based on poor EIA practices (Interviewees C3 and C4), especially to the application of 'need and desirability' as a legal requirement. One of the interviewees noted that EAPs, both in performing EIAs and the review thereof "… *have lost the ability to apply integrated environmental management thinking in interpreting that application of strategic information to project level EIAs*".[395] The other side of the spectrum holds the view that the quality of EMFs needs to be improved to be of value to EIA processes (Interviewees A1, B1, and C2) and that EMFs and SEAs should change regulatory procedures to 'improve' regulatory efficiency meaningfully (Interviewees D4 and E1).

[395] Interviewee C3

Although the enabling provisions in the NEMA and the EIA Regulations are weak in setting tiering requirements for PPPPs and EAs, it does include some enabling provisions that require EAPs, specialists, and decision-makers to apply their minds to the application of the strategic-level information to the specific EIA (see section 4.2.1), as well as the need to convey this in the reasoning provided in the EIA and subsequent decisions.[396] Based on the case studies, corroborated by general interviewees (Interviewees D1-5 and E1), there was agreement that the quality of EMFs (as the primary strategic-level instrument used by provinces) should be improved to provide clear guidance to promote sustainable development outcomes at project-level assessment. However, the interviewees did not express clear views on how this should be achieved. A review study on the effectiveness of the EIA system in South Africa (DPME/DEA, 2019) also found that it was not possible to evaluate the ability of EIAs to deliver sustainability outcomes because of the lack of clearly defined sustainability objectives against which the outcomes of the EIA processes could be measured.[397] The Environmental Impact Assessment and Management System (EIAMS) (DEA, 2014) also highlighted the need for sustainability objectives, and specifically the role that EMFs should play in the identification and implementation of such objectives.

In summary, the strategic environmental context, primarily through SEAs and EMFs, provided information that could guide EIA processes on the sensitivity of environmental attributes and sustainable development outcomes. In two of the three case studies, guidance was provided on appropriate and inappropriate types and scales of development and land use, specific to the site, to promote sustainable development outcomes during project-level assessments. However, the view was still expressed that the quality of especially EMFs (as the primary strategic-level instrument used by provinces) should be improved to provide clear guidance to promote sustainable development outcomes at project-level assessments. Emerging from the case studies was the divergence of views on the level of guidance (and information) expected from the strategic context provided by EMFs and SEAs. Some stakeholders expected clear project-level guidance, while others acknowledged that EMFs and other strategic informants will not (or cannot be expected to) provide project-level detail. The latter view emphasised that strategic-level information in EMFs and SEAs requires interpretation by applying integrated environmental management thinking skills. The case studies showed a lack of interpretation of strategic-level

[396] Consistent with the PAJA requirements for just administration and jurisprudence in Lezmin 2588 CC v The Provincial Minister for Local Government, Environmental Affairs & Development Planning, Western Cape & the City of Cape Town (21935/2009), Judgement delivered on 18 Oct 2010 (Judge Blignault, 2010).

[397] The report includes the following recommendation: "*The system evaluation suggests that as it stands, the impact of the EIA system cannot be measured and/or evaluated until such time as well defined and measurable objectives are developed. This is due to the lack of quantifiable and well-defined targets and objectives for the EIA system as a whole, as well as the contextual nature of the concept "sustainability*" (DPME/DEA, 2019:44).

information at the EIA level, reflecting a relatively low level of maturity regarding the role and application of tiering in EA in South Africa.

Overall, the assumption that tiered EAs and environmental planning frameworks provided clear guidance to lower tiers to facilitate sustainability outcomes at project level assessment and decision-making is only partially supported.

Assumption A11: In considering what constitutes sustainability outcomes, stakeholders attached value to aligning project-level assessments and decisions to the strategic environmental context.

In the case studies, the key role-players in the EIA process (i.e., the EAP, specialists, applicant, and official responsible for the review of the EIA) and the stakeholders from other sectors did not refer to the strategic context represented by the SEA and EMFs, in arguing sustainability (C11.1). From a tiering perspective, the direct value of vertical tiering in EA was lost in providing a context for sustainable development. The stakeholders from other sectors did not engage on the issue of sustainability and did not refer to the strategic context in the comments they submitted during the EIA process (C11.2). In the case studies, the strategic contexts represented in EMFs were not used during the EIA processes to reflect on sustainability. In the Rietkloof Case Study, the key stakeholders involved in the EIA process readily (and uncritically) accepted the revised regulatory process that flowed from the Renewable Energy SEA. By implication, they were aware of the strategic context, but the EIA documentation and the EIA decision did not reflect on the SEA as providing a strategic context for sustainability. In all the case studies, neither the EAP (consultant) nor the decision-maker used the information contained in the SEA/EMFs to motivate sustainability outcomes. They primarily relied on the EIA information to reflect on the acceptability of the development proposals. As such, they did not attach any value to the context of strategic environmental assessment regarding sustainability.

The case studies reflected the diverging views of stakeholders on what constituted acceptable sustainability outcomes of EIA processes, resulting in a refusal being issued (Chapter 8) and appeals being lodged against the EIA decisions in two of the case studies (See Chapters 6 and 8). It emerged from the case studies and general interviews that, in theory, EMFs and SEAs were considered important informants to achieve context-specific sustainability outcomes, but in practice, these informants were not used in discussing and evaluating sustainability at the EIA level (also see section 9.8 for some of the reasons provided by interviewees on why there was this discrepancy between theoretical views and EIA practices). None of the case study decisions presented reasoning for achieving sustainable development outcomes as a primary focus during

decision-making. The vexed issue of EIAs contributing to sustainability outcomes was also the subject of a recent EIA system review in the South Africa DPME/DEA (2019), where one of the conclusions was that "[i]*t is not possible to measure the impact of the EIA system towards specific goals or objectives because the objectives of EIA defined in NEMA and Section 24 of the Constitution has not been quantified (if this is even possible?)*".[398]

There was a low level of awareness in the environmental sector about the value other sectors attach to the SEA and EMFs as strategic environmental informants (C11.2). Only one interviewee mentioned the need for follow-up to determine the extent of uptake of EMFs in decision-making, and none of the interviewees reflected on follow-up on the uptake of EMFs in other sectors. The poor use of SEA and EMF information and the lack of reasoning towards sustainability reflect the low level of maturity in the environmental sector related to tiering in EA. In land use planning and decision-making, the inclusion of environmental considerations in regulatory decision-making took place indirectly through horizontal tiering between SEAs and SDFs (Laingsburg, 2017; Interviewee A4), between the EMFs and SDFs (CoCT, 2013; Mossel Bay Municipality, 2017; Interviewees D3, D5, and E1) and between functional-specific environmental planning informants (such as biodiversity plans) and SDFs (Interviewees D1, D2, D5, and E2). As such, environmental considerations indirectly influenced regulatory land use decisions based on strong vertical tiering between SDFs and land use regulatory decision-making, rather than diagonal tiering between EMFs and regulatory land use decision-making. Also, the case studies reflected a high level of maturity in the land use planning sector related to tiering. In contrast, the same level of maturity is not present in the environmental sector.

The performance of the case studies against this assumption illustrates the importance of the knowledge brokerage role of tiering (or the lack thereof in the case studies), especially the role of the strategic-level assessment tier, in empowering stakeholders to participate in EIA processes on the issue of sustainability. In the case studies, this knowledge brokerage potential of the strategic-level EA tier was lost due to the lack of meaningful engagement with the strategic contexts in presenting motivations for sustainable development outcomes. Also, the EAP and review officials failed in their knowledge brokering role during the EIA processes (i.e. to facilitate knowledge sharing).

In summary, the EIA case studies reflected a weak reliance on the strategic environmental context in discussing sustainability – in how the EIA documentation reflected on sustainability and how the interviewees reflected on sustainability during interviews. In theory, the strategic context is

[398] Page 44, Table 6-1 of the Evaluation of Environmental Impact Assessment System - Full Report (DPME/DEA, 2019).

regarded as important, but in practice, in the case studies, little or no value is attached to the strategic environmental context in reflecting on sustainability. None of the case study decisions included reasoning for achieving sustainable development outcomes as a primary focus of decision-making. Also, there is a low level of awareness of the value that decision-makers in other sectors attach to EMFs and SEAs. This is also an indicator of a lack of EMF and SEA follow-up[399]. In the case studies, the knowledge brokerage potential of the strategic-level EA tier was lost due to the lack of meaningful engagement with the strategic contexts in presenting motivations for sustainable development outcomes. In general, the above shows that there is a low level of maturity in the environmental sector towards tiering in EA.

The assumption that when considering what constitutes sustainability outcomes, stakeholders attach value to aligning project-level assessments and decisions to the strategic environmental context is partially supported.

9.7 The Intermediate Outcome ToC Component

Assumption A12: The need for aligned/ integrated decision-making will promote the value of tiered environmental assessment to overcome sectoral interests.

In all the case studies, the land use planning sector, through the SDFs, indirectly considered the EMFs and SEA. This positive response to horizontal tiering was based on the strong tiering requirements set in the land use planning legislation and the legal requirement that SDFs must consider other sector planning initiatives.[400] The CoCT 2013 EMF was integrated into the CoCT SDF and represented a best practice approach towards horizontal tiering, ultimately aimed at achieving complete alignment and consistency between the EMF and the SDF.[401] The Garden Route EMF, although outdated, was used as a source of biophysical information for one of the supportive documents that informed the Knysna SDF. However, the SDF did not directly reference the EMF. As such, there was a weak (indirect) horizontal tiering link between the SDF and the EMF. The Renewable SEA informed the Laingsburg Municipal SDF and the relevant Renewable Energy Zone was referred to in the SDF.

[399] Only the Western Cape Province indicated the implementation of EMF follow-up

[400] See section 14(f), 15(3), 16(c), and 21(m) of the SPLUMA (South Africa, 2013).

[401] Meaning that spatially and non-spatially, there is alignment and consistency between the EMF and SDF in what constitutes sustainable development and land use. However, the EMF and SDF are not aligned in all instances and areas of conflict were reflected in the integrated EMF/SDF document.

Some interviewees (Interviewees B3, C3, D1-5, E1-3) indicated that, in general, there were increased efforts to improve the alignment between EMFs and SDFs, although different levels of success were achieved. While the case studies reflected that stakeholders from other sectors did not rely on the strategic contexts in expressing their views during the EIA processes, the interviewees believed, in general, there was an increased interest in other sectors in using EMFs and SEAs to benefit their sector interests. This interest primarily stems from the desire to reduce the regulatory requirements of the environmental legislation (Interviewees D1, D2, D3, D4, D5, E1, E2, and E3) – examples include the Sandveld EMF[402] (agricultural sector), the Renewable Energy SEA[403] (renewable energy sector), the SEA for Electricity Grid Infrastructure[404] (electricity sector), the SEA for community watercourse infrastructure in KZN[405] (water infrastructure sector), and the EMFs being funded by the Department of Agriculture, Rural Development and Land Reform[406] (agricultural sector). In follow-up studies on the effective implementation of three EMFs in the Western Cape,[407] municipal officials were interviewed and regarded the EMFs as important informants to their functions and decision-making mandates (Interviewee D5). Interviewees B3 and D1 supported the view that municipalities used EMFs in regulatory land use decision-making.

While the land use planning legislation requires SDFs to consider all other sector planning initiatives, including EMFs,[408] several interviewees (Interviewees D1, D2, D3, D4, D5, and E2) expressed concerns regarding the extent to which environmental considerations were adequately addressed in SDFs. They also believed that the inadequacy of environmental information in SDFs made the need for EMFs more pronounced in creating a strategic environmental context for decision-making. It was also highlighted that EMFs must address the implications of existing natural resource pressures to deal with cumulative impacts, opportunity costs and trade-offs, as

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[402] The Sandveld EMF was developed in collaboration with the Western Cape Department of Agriculture and promotes farm-level planning to remove the requirement for environmental authorisations for the cultivation of new areas based on adherence to the Sandveld EMF Standard (DEA&DP, 2019).

[403] The SEA for Wind and Solar Photovoltaic Energy in South Africa (DEA, 2015) resulted in revised regulatory requirements for renewable energy developments.

[404] The SEA for the Identification of Energy Corridors, as well as Assessment and Management of a Gas Pipeline Network for South Africa (DEFF, 2019a), resulting in exclusion from the requirements for environmental authorisation for such infrastructure in identified corridors, subject to adherence to a standard.

[405] SEA and associated Norms and Standards of community service watercourse infrastructure in KwaZulu-Natal (Felton *et al.,* 2021).

[406] Interviewees D1, D2 and D4 also reported on the Department of Agriculture, Rural Development and Land Reform, funding the initiation of EMFs in Northwest and Mpumalanga to facilitate the execution of their mandate, including the possible development of regulatory mechanisms to flow from the EMFs to reduce regulatory requirements for agricultural projects.

[407] Interviewee D5 confirmed that the effectiveness of EMF implementation was determined through three follow-up studies (unpublished) conducted by the Western Cape provincial department responsible for environmental management and included interviewing municipal officials, EAPs and stakeholders from other sectors on the value they attach to the EMFs.

[408] See section 14(f), 15(3), 16(c), and 21(m) of the SPLUMA (South Africa, 2013).

this is not considered in SDFs. As such, the need for EMFs cannot be replaced by SDFs (Interviewees D1, D3, D5 and E1).

Regarding cooperation between sector authorities, no examples of integrated decision-making between sectors (i.e. the integration of regulatory processes to integrate or align decision-making processes) could be found in the case studies or the interviews. Although efforts to streamline regulatory procedures were evident in the environmental sector, no similar examples were found in other sectors, and no recent examples of integration (or even alignment) of regulatory procedures between different sectors could be found. No efforts to align or integrate regulatory decision-making procedures between the land use and environmental sectors could be found, although both the NEMA and the SPLUMA include enabling provisions for such integration. The case studies and interviews showed that cooperation between sectors was primarily focused on integrating or aligning strategic planning efforts between sector authorities, e.g., efforts to align land use planning with environmental planning and strategic-level EAs (i.e., alignment between SDFs and SEAs/EMFs). The CoCT EMF is an example of such alignment.

In summary, the case studies reflected examples of collaboration between the environmental sector and other sectors. However, the case studies and the general interviews indicated that in the environmental sector, such collaboration at the strategic assessment level was driven by the political will to do so, rather than being mainstreamed or institutionalised in policies or based on environmental legislative requirements. Integrated planning, being the collaboration between land use planning authorities and environmental authorities involved in strategic planning, was a legislative requirement in the land use planning legislation, but not in the environmental legislation.[409] As such, horizontal tiering was primarily driven by the legal requirement that SDFs must consider other sector planning initiatives and the political will of these authorities to do so adequately. Also, the relationship between EMFs and SDFs is not one of substitution (where SDFs could replace the need for EMFs) but complementarity (where both exist but should inform one another). Collaboration between sectors was primarily based on the alignment of strategic planning efforts rather than the alignment of regulatory decision-making.

Overall, the assumption that the need for aligned and integrated decision-making through tiered assessment would overcome sectoral interests is only partially supported.

[409] Although the EMF Regulations (South Africa, 2010) states one of the purposes of EMFs is to facilitate cooperation between authorities, it does not contain any provision that requires the consideration of other sector planning initiatives.

Assumption A13: The support for the value of tiering in environmental assessment results in allocating resources and establishing institutional arrangements to support strategic-level assessment.

This assumption is that tiering is valued (C13.1) and that this value would result in allocating institutional resources towards conducting tiered EAs (C13.2).

Regarding the value attached to the strategic environmental assessment context, the case studies showed a higher reliance on the EIA information than the SEA and EMF information. The case studies also reflected that functional-specific environmental planning instruments (such as biodiversity plans) and other sector plans (such as SDFs) were readily and uncritically considered during EIA processes rather than relying on the SEAs and EMFs. Therefore, vertical tiering EA failed, but diagonal tiering between functional-specific planning informants and EIAs was effective. Despite the failure of vertical tiering, several interviewees highlighted the value of tiering in EA, especially the strategic assessment tiers, but that the value-add thereof has not yet been realised in practice (Interviewees A3, A4, B3, C3, C4, D1, D2, D4, D5, and E1-3). They regarded tiering as essential in reducing the overreliance on project-level EIA information for decision-making. They held the view that EIAs often failed to consider cumulative impacts, opportunity costs, trade-offs and sustainability. They believed that tiering in EA should address these challenges, but that in practice, the value-add of tiering was not realised due to the absence of strategic-level tiers, or if present, it was not effectively used. The case studies indicated (supported by general interview replies) that decision-makers, in the absence of tiering in EA, or lack of consideration thereof where it did exist, readily relied on other sector plans and functional-specific environmental planning outputs (such as national and provincial biodiversity plans). This reliance on sector plans happened even though these planning documents did not consider all components of the environment in an integrated, holistic manner. One of the interviewees, highlighting the importance of tiering in EA as a prerequisite for balanced decision-making, stated that "…*it* [tiering in environmental assessment] *is critical, but fortunately …. it's not happening*."[410]

Based on the case studies and supported by some general interview replies, the reasons for the slow realisation of the value of tiering included:

- A lack of awareness of the purpose and value of tiering by consultants conducting EIAs, reviewers, and decision-makers. The knock-on effect is that other stakeholders are not being

[410] Interviewee E2, although other interviewees expressed similar sentiments.

made aware of the value of tiering in EA, and are not empowered to use tiered information when participating in EIA processes (Interviewees D4, D5, E1 and E3).

- The lack of acknowledgment of the environmental sector mandate for tiering in EA and the lack of a clear and deliberate strategy for the implementation thereof (Interviewees D4, D5 and E3).
- The inadequate allocation of human, time and financial resources towards the development and implementation of tiering – i.e., the deliberate, institutionalised focus on creating a tiering system in EA was lacking (Interviewees B3, C3, C4, D1-5, E1-3).
- That EMFs do not provide adequate guidance to EIA processes – including spatial targeting for sustainable development, how strategic trade-offs could be made without waiting for project-level applications, highlighting opportunity costs and providing sustainability objectives/indicators/targets against which to measure the performance of existing and future land and resource uses (Interviewees A1, A2, C2, E1 and E2).
- The persistence of poor EIA practices in not applying integrated environmental management thinking in considering the strategic environmental context provided by EMFs and SEAs during EIA processes (Interviewees C3, C4, D1, D4, D5 and E3).
- The voluntary status of SEAs and EMFs (especially the latter) and that this created the (incorrect) perception that where they did exist, their implementation/use is voluntary (Interviewees D5, D5 and E3).

Regarding the allocation of institutional resources towards EA tiering (C13.2), the case studies, corroborated by general interview replies, reflected that there were diverse institutional arrangements in place to deal with strategic-level EA and environmental planning within the DFFE and the different provincial departments responsible for environmental management. In the DFFE, the primary focus was on SEAs, whereas in provinces, EMFs were used as the primary strategic-level instrument (Interviewees C3, D1, D2, D3, D4, D5, E2, and E3). Although provision was made in organisational structures for environmental planning and strategic-level assessments, allocating adequate resources is a challenge. While considerable resources were being allocated towards functional-specific environmental planning within the different functional areas (i.e., management of air quality, coastal, biodiversity, waste, etc.), there was a lack of resources being allocated towards integrated planning (Interviewees B3, C3, C4, D1-5, E1-3) and strategic-level EAs to pull the different functional-specific environmental planning outputs together (Interviewees D5, E1 and E3). Conducting these integrated EAs and maintaining the currency of the information will require additional resources. However, as highlighted, the voluntary status of EMFs and SEAs as strategic-level EA instruments means that the use thereof depends on the political will and the availability of resources. Considering the austerity measures being

implemented in government (Minister: FFE, 2024),[411] the allocation to institutional resources (i.e., clear strategies to develop EMFs and SEAs and the allocation of human resources and funds to do so) will remain uncertain and unlikely. This lack of resources will significantly limit the effectiveness of EA tiering - as stated by one of the interviewees "…*funds and human resources follow mandates*".

Several of the general interviews (Interviewees D1, D2, D4, D5, E1, and E2) indicated that in the future, the initiation of strategic-level EAs, especially EMFs, will increasingly be reliant on collaboration between organs of state for co-funding, and the increased use of existing, internal human/skills resources – i.e., the re-prioritisation in allocating existing financial and human resources.

According to some interviewees (D2, D4, D5, E1 and E3), there are examples of collaboration between the environmental sector and other sectors. Even so, it is not yet mainstreamed and institutionalised (i.e., captured in legislation, policies, cooperation agreements, procedures and organisational cultures). In the environmental sector, due to the voluntary status of strategic-level EAs, such collaboration at the strategic assessment level is driven by the political will to do so, rather than being mainstreamed or institutionalised (especially when compared to the land use planning sector). There was general agreement between interviewees on the need for tiering, specifically strategic-level EAs. However, in the future, the initiation of strategic-level EAs, especially EMFs, would increasingly rely on collaboration between organs of state for co-funding and the increased use of internal state human skills and time resources. The quality of tiering in EA (especially EMFs) should be a priority through spatial targeting for sustainable development options, strategic trade-offs, and identification of sustainability objectives, indicators, and targets.

The ongoing drive to develop regulatory instruments or create separate assessment processes for different sectors as outputs from strategic-level assessments is evidenced by Chapter 6 and was corroborated by interviewees (Interviewees, D1-5, E1-4). This drive is also related to the long-standing, perceived challenge that the EIA system is not responding to the calls for efficiency flowing from economic and political pressures. However, there are polarised views on the impact of the increased focus on alternative regulatory mechanisms on the efficiency and effectiveness of EA and environmental management in general (as reflected in the principles in section 2 of the NEMA). Interviewees expect that tiering will assist in both the efficiency and effectiveness of EIAs

[411] In a media statement the Minister highlighted the effect of austerity measures and the need for "[a]n initiative referred to as 'Money' [that] addresses the need for financial efficiency within the department amid budget cuts (over the medium term, the department's budget has been reduced by nearly R2-billion) by attracting donor income, engaging with private sector partners and conducting a spending review" (Minister FFE, 2024).

and inform evidence-based law reform when developing regulatory instruments in support of EIAs or alternatives thereto.

In summary, the value of tiering in EA was acknowledged, but the added value has not yet been realised in practice. While adequate provision was made in institutional hierarchies for environmental planning (organisational structures), allocating sufficient financial and human resources toward strategic-level assessments remained a significant challenge in achieving the value expectations of EA tiering.

Overall, the assumption that the support for the value of tiering in EA results in allocating resources and establishing institutional arrangements to conduct strategic-level assessment and planning is only partially supported.

9.8 The Impact ToC Component

Assumption A14: The strategic context (through SEAs or EMFs) is actively contributing to sustainable development goals.

In South Africa, sustainability is enshrined in the Constitution (South Africa, 1996) through the inclusion of the Environmental Right.[412] Although generally accepted to provide an anthropocentric focus on sustainability, the Constitution also promotes ecologically sustainable development, creating an inherent tension in the implementation thereof in practice. Within the context of EA, sustainability is therefore perceived to include the need for development and environmental protection. The former is integrally linked to the drive for efficiency (C14.1) (i.e., the time and cost implications to serve a developmental focus) and the latter to effectiveness (C14.2) (i.e., achieving the substantive outcome of sustainability) in tiering between EIAs and its strategic environmental context.

The case studies reflected a clear focus on development and efficiency. From an efficiency perspective (C14.1), the Renewable Energy SEA outcome improved the (time and cost) efficiency by reducing the regulatory and information requirements of EIA processes for renewable energy projects.[413] The Penhill and George Rex case studies both reflected a strong focus on development. However, the EMFs did not change the regulatory processes; they primarily

[412] Section 24 of the Constitution (South Africa, 1996).

[413] The renewable Energy SEA outcome was a revised regulatory process that reduced timeframes where applicable to renewable energy projects in REDZ, resulting in a reduction in EIA costs (DEA, 2015).

provided information that informed the EIA and decision-making processes. In both case studies, the EAPs and the authority review officials maintained that the EMFs did not influence the efficiency of regulatory processes. The decision-making authority also did not refer to the EMF information in their decisions (also see C8.6).

Tiering is not part of the discourses on EA in South Africa, and all the interviewees had to be prompted about the meaning and purpose of tiering during the interviews. However, once the concept of tiering was explained, the interviewees expressed clear opinions. While all the interviewees agreed that tiering was important, there were divergent views on the adequacy of the policy and legal context for tiering and how it should be implemented. Nearly all the interviewees directly or indirectly indicated a need for more sector debate on tiering in EA to clarify both conceptually and the practical implementation thereof in South Africa.

There were different opinions on how tiering (through EMFs/SEAs) should contribute towards efficiency. At one end of the spectrum, there was the view that the goal of efficiency would only be achieved meaningfully if the outputs from the EMFs/SEAs were reduced regulatory EA processes. In this view, the potential to use and interpret strategic-level information to reduce the need for alternatives (C8.3) and the scope of specialist information requirements (C8.2, C8.3, and C8.4) was often not regarded as meaningful efficiency gains due to the procedural approach to EA. On the other side of the spectrum, the view was held that reducing regulatory requirements as the only measure of efficiency gains was too limited. This view held that efficiency gains through *inter alia*, reducing information requirements and the need for alternatives, assisting with scoping issues, and influencing public opinion were undervalued. This view also promoted a stronger focus on effectiveness in EA. The research results showed that the role and purpose of tiering in EA were poorly understood, influencing the perceptions of what constituted the efficiency of the EA system – i.e., that efficiency only referred to reduced regulatory procedures.

From an effectiveness perspective (C14.2), all three case studies were characterised by the lack of consideration of the information flowing from the SEA/EMFs during the EIA processes. The poor use of strategic-level information in the SEA/EMFs meant that the opportunity to show stakeholders how these instruments influenced the effectiveness (or sustainability outcomes) of the EIA process was lost. Although poorly supported by reasons and reasoning in the case studies, the EAPs and the decision-making authorities (review officials) maintained that the SEA/EMFs did not influence the effectiveness (i.e., the sustainability outcome) of the EIA process. The case studies confirmed that there was limited consideration of these strategic informants in conducting the EIA and that no consideration (as reflected in the written decisions) was given to

these strategic informants in reviewing EIAs. Therefore, the possible role that vertical tiering in EAs could have played in improving the effectiveness of EIA processes (to achieve sustainable outcomes) was lost. However, the case studies did reflect the presence of horizontal tiering between the land use and environmental sectors as a strength, resulting in the strategic environmental context (presented in EMFs) indirectly influencing EIAs through diagonal tiering between the SDFs and EIAs. Therefore, although vertical tiering in EA failed, the case studies found that diagonal tiering can play a valuable role in influencing how cumulative impacts (Rietkloof case study), the impact mitigation hierarchy (Penhill case study), trade-offs (Rietkloof and Penhill case studies) and alternatives (all three case studies) are addressed in EIAs. However, the reasons and the reasoning in the EIA and decisions about these issues were poor.

Another issue that emerged from the research results was the influence of power dynamics on the EIA process outcomes. The majority of the case study interviews, corroborated by the more general replies (Interviewees D1, D3, D4, D5, E1, E2, and E3), directly or indirectly, referred to the effect of power dynamics on the EIA and the SEA/EMF processes. While this research was not focused on analysing power dynamics, it is important to reflect on the presence thereof as conveyed by case study interviewees. The case studies confirmed that power dynamics were inherently part of EA processes at strategic and project levels.

In terms of the ability of the strategic context (through EMFs/SEAs) to facilitate the achievement of environmental rights in a balanced manner (C14.3), the research results confirmed that, in theory, EMFs and SEAs were considered the only EA instruments that could be used to plan for sustainability (i.e., a balanced consider social, economic and biophysical inputs) and to create a strategic context for EIA to deliver sustainability outcomes on the ground. However, in practice, various strategic informants (such as functional-specific planning outputs and SDFs) were uncritically used, while EMF and SEA information was largely ignored. In all the case studies, the deliberation in the EIAs and decisions was poor in reflecting how sustainability and environmental rights were achieved. Therefore, the research showed that there is a huge discrepancy between the theory and EA practice on the role of strategic informants in facilitating sustainability outcomes (inclusive of environmental rights) in EIA processes – i.e. in theory, EMFs and SEAs are considered important in achieving sustainability, but in practice, they are poorly utilised for this purpose. The more general responses from interviewees (Interviewees A3, B3, C3, D1, D3, D4, D5, and E3) confirmed that this discrepancy was also present in EIA practices in general. Also, the case studies and general interviews revealed different opinions on the role of SEA/EMFs in facilitating sustainability outcomes at the EIA level. The interviewees involved in SEA and EMF development regarded these instruments as essential informants to the EIA process to guide EIAs toward achieving sustainability outcomes (Interviewees A3, B3, B4, C3, and D1-5), whereas EAPs

involved in the compiling and reviewing EIAs relied primarily on EIA information. These diverging views reflected inadequacies in both EIA practices in not using tiered information, and in SEA/EMF practices in not implementing follow-up to identify measures to ensure that tiered information was effectively used.

Several interviewees (B3, C3, D1, D3, D4, D5, and E2) noted that the primary goal of EMFs was to inform decision-making and strategic planning in other sectors toward sustainability and not, as advocated by some, to be used to reduce regulatory implications through the development of regulatory instruments that exclude proponents from the requirement to obtain environmental authorisations. Although all interviewees reflected that there was room for improvement in the extent to which EMFs provided guidance towards sustainability, no one held the view that EMFs cannot serve this purpose. Apart from the reasons already mentioned in discussing Assumption A13, no clear trend or explanation emerged from the case studies and interviews as to why EMFs and SEAs were not used in the reasoning on sustainability (in the case studies and in general). In the case studies, omitting the EMFs and SEA in reasoning on sustainability meant that the stakeholders and the public were neither aware of the value of the sustainability context provided by these strategic informants nor aware of the value that the EAPs and the decision-making authority attached to these informants in reasoning on sustainability outcomes. Again, the knowledge brokerage role that the EMFs and SEA could have played and the authorities' role as knowledge brokers were lost. Also, there was a persistent mismatch between the theoretical view that SEAs and EMFs were valuable strategic informants and the lack of practical implementation.

Another issue that emerged from the case studies was the complexity of sustainability and its implementation in practice. In the Rietkloof case study, Interviewee A1 was of the clear view that sustainability could not be achieved due to the primary focus on development and that only EIA information was considered, whereas Interviewee A3 and A4 considered sustainability primarily based on the SEA outcomes. Some stakeholders also appealed the environmental authorisation (decision) that was issued. In the Penhill case study, Interviewee B1 believed that the sustainability outcome was influenced by the need for development that required an offset. In the George Rex case study, Interviewee C1 did not support the proposed development, resulting in a refusal to be issued, whereas Interviewee C2 regarded the development to be sustainable. Stakeholders also appealed the environmental authorisation that was issued. In all the case studies, there was a lack of consideration of the strategic context in deliberating whether the applications constituted sustainable development outcomes, either in the EIA or the decision issued, or both. There was a view that sustainability required the balanced consideration of all components of the environment for every site (Interviewee A1), while others highlighted that sustainability is context-specific and that certain components of the environment would be

considered more important than others depending on the context (Interviewees B1 and C2). The challenge in achieving sustainability was also underscored by the 2019 EIA review study (DPME/DEA, 2019) where one of the conclusions was that "[i]*t is not possible to measure the impact of the EIA system towards specific goals or objectives because the objectives of EIA defined in NEMA and Section 24 of the Constitution has not been quantified (if this is even possible?)*".[414] The case study SEA/EMFs did not contain or set sustainability objectives against which EIA outcomes could be measured and according to Interviewees C3, D1-5, and E1, no EMFs or SEAs anywhere in South Africa set sustainability objectives. However, interviewees C4, D5, and E1 emphasised that the presence of tiers of EA information *per se*, does not automatically ensure that sustainability outcomes will be achieved due to the influence of contextual factors beyond the scope of EAs. This influence of contextual factors also relates to the notion of an "accountability ceiling" used in theory on change approaches to explain the point in a logic framework where achieving a specific strategic outcome/impact was no longer within the control of only the role-players that are responsible for the inputs, activities, outputs and immediate outcomes of the logic framework. Applying this to sustainability, the accountability ceiling is a point where achieving sustainability is the responsibility of multiple role-players beyond what can be addressed by (and within the control of) the environmental sector through tiered EAs. This explanation was also emphasised by one of the interviewees who believed that the "*…achievement of the environmental rights (or any of the human rights contained in the Constitution) is the collective responsibility of the whole of society (i.e., government and civil society). When considering the overlapping nature of constitutional rights, including environmental rights, individual departments can account for their individual performance, but overall, the integrated performance is poor. If the achievement of these rights is considered within the context of achieving different departments' 5-year strategic plans and annual performance plans, then individual performance is reasonable and there is accountability within the context of the available resources. However, when considering the availability of better future options, long-term opportunity costs, and how socio-ecological vulnerabilities and risks could be better managed, then there is a problem in that we do not have strategies and policies that bring these aspects into consideration across sectors. This is further exacerbated by the challenge that short-term needs captured in 3 to 5-year planning cycles are overshadowing long-term (sustainability) needs"*. Based on the above, it was clear that more guidance on sustainability was required from the strategic informants to inform EIA processes (Interviewees A1, B1, C3, C4, D4, D5, E1, E2, and E2). Also, more capacity building on using strategic informants in EIA processes was required to ensure consistency in implementation (Interviewees C3, D5, E2, and E3). Interviewee

[414] Page 44, Table 6-1 of the Evaluation of Environmental Impact Assessment System - Full Report (DPME/DEA, 2019).

C3 noted that "..*we* [EAPs] *have lost our integrated environmental management thinking ability…*".

In terms of the balance between efficiency and effectiveness, several interviewees expressed a concern that the pressure of efficiency that was imposed through the regulatory timeframes of the EIA Regulations (South Africa, 2014a) impacted the ability to achieve effectiveness (Interviewee A1, B1, C2, C3, C4, D5, E1, and E3). The pressure of regulatory efficiency and short-term developmental needs also undermined the effective use of these instruments to achieve sustainable development outcomes (Interviewees A1, B1, C2, C3, C4, D5, E1-3).

It also emerged from the case studies that a strong reliance was put on functional-specific environmental planning outputs (such as biodiversity planning), even where EMFs and SEAs were available. However, it also emerged from the case studies, corroborated by general views, that reliance could not solely be put on functional-specific environmental planning outputs in providing a strategic context for sustainability. Functional-specific environmental planning outputs that are conducted in terms of the various legislation requirements (see Chapter 5) do not (and are not required) consider or assess social, economic, and biophysical aspects in a balanced manner (Interviewees D4, D5 and E1). Several Interviewees also considered the environmental content of planning outputs in other sectors, especially the SDFs in the land use planning sector, to be inadequate in its sustainability guidance (Interviewees D1-5 and E1-3).

In summary, there was a strong focus on the efficiency of regulatory decision-making in EA. In theory, the efficiency value of SEAs and EMFs is acknowledged, but in practice, the information contained in EMFs and SEAs and the interpretation thereof were not seen as valuable in achieving efficiency gains for EIA processes. Regarding effectiveness, the case study EMFs and SEA provided relevant information that should be used to evaluate the sustainability outcomes of projects. However, in practice, it was seen as inadequate in providing a strategic context to EIAs to inform effectiveness outcomes (i.e., sustainability). The pressure of regulatory efficiency and short-term developmental needs were also seen as undermining the effective use of these instruments. The knowledge brokerage value of tiering (in providing this strategic context for sustainability) for regulatory decision-making was lost because the strategic environmental context was not used in the reasoning towards sustainable development outcomes. There was a clear view that EMFs and SEAs could be improved, including incentivising better future options, highlighting long-term opportunity costs, and how socio-ecological vulnerabilities and risks could be better managed.

Overall, the assumption that the strategic context (through SEAs or EMFs) actively contributes to sustainable development goals is only partially supported.

Assumption A15: EIAs are supported as essential instruments in tiering in environmental assessment for achieving environmental rights.

In evaluating this assumption, the extent to which EIAs (C15.1) and EIA decisions (C15,2) dealt with environmental rights in a balanced manner was evaluated, and if the EIA instrument (C15.3) and tiering in EA (C15.4) were considered to be of value in achieving environmental rights as contained in the Constitution (South Africa, 1996).

The case studies showed that the EIAs contained information on and considered all the components of the environment, covering social, economic, and biophysical considerations. While the specialists relied on the strategic context within their specific functional areas (i.e., biodiversity planning), there was limited (or no) use of the strategic contexts created by EMFs/SEA in these specialist reports or the EIA reports.

The performance of EIA decision-making against this assumption emphasised the importance of reasons and reasoning presented by the decision-making authorities in the decisions they issue. Two case studies did not perform well in this regard. The value that the decision-makers attached to the environmental right (including considering the strategic environmental context in determining 'need and desirability') was not reflected in the reasons or the reasoning in the written decisions. Legally and from a fair and just administrative perspective, this lack of reasons and reasoning was a concern, as was reflected in case law.[415] From a knowledge brokerage perspective, the interested and affected parties/ stakeholders were not provided with clear reasoning to enable them to understand (or provided with insight on) the value that the decision-maker attached to the environmental right and how tiering in EA, especially the strategic assessment tier, contributed towards this aim. This omission undermined the knowledge brokerage role that decision-making authorities should play - i.e., the importance of knowledge

[415] Lezmin 2588 CC v The Provincial Minister for Local Government, Environmental Affairs & Development Planning, Western Cape & the City of Cape Town (21935/2009), Judgement delivered on 18 Oct 2010. In the judgment, the following is also quoted another judgment to highlight that decision-makers should explain decisions "….*in a way which will enable a person aggrieved to say, in effect. "even though I may not agree with it, I now understand why the decision went against me. I am now in a position to decide whether that decision has involved an unwarranted finding of fact, or an error of law, which is worth challenging. This requires that the decision-maker should set out his understanding of the relevant law, any findings of fact on which his conclusions depend (especially if those facts have been in dispute), and the reasoning processes which led him to those conclusions. He should do so in clear and unambiguous language, to in vague generalities or the formal language of legislation……" (Judge Blignault, 2010)*.

sharing and knowledge transfer, empowerment, and being responsive to promoting environmental rights. When questioned on the importance of reasons and reasoning in decision-making, one of the interviewees[416] acknowledged that decisions often contain concluding statements rather than comprehensive reasoning. A sensitive issue that came to the fore during the interviews was that although acknowledging the need for both reasons and reasoning to be included in decisions, the dilemma decision-makers faced was that providing extensive reasoning also increased exposure to grounds for appeals and legal action (interviewees did not want to be referenced in this regard).

In terms of the value of EIAs in general, all the case study interviewees, supported by general responses, regarded it to be an essential instrument for achieving sustainability – EIA provided a process to consider environmental issues, identify impacts, identify alternatives, and avoid or mitigation of impacts, irrespective of where such developments were located. However, interviewees believed that EIAs were not always effective in achieving this goal, but there were diverging views on why EIAs were not performing optimally. The reasons included:

- The legislated timeframes for EIA processes made it difficult to incorporate strategic information into the EIA process effectively – i.e., "*it took too much time*" to engage with strategic contextual information and the relevance thereof to specific EIA processes, especially when these strategic informants were not clear in its guidance (Interviewees A2, B1, C2, C3, D4, D5, E1, E2, and E3).

- The presence of power dynamics could unduly influence EIA processes and skew outcomes. Direct or indirect reference was made to power dynamics in all three case studies and during several of the general interviews.

- There was an overreliance on EIA information and a lack of consideration of information that flows from other environmental management instruments, especially strategic-level assessment instruments. Therefore, the important contribution these strategic informants should make towards achieving integrated assessments and balanced decision-making (i.e., a balance between social, economic, and biophysical spheres) was inadequately addressed. EIAs, in isolation, cannot achieve this integration, and EMFs and SEAs (i.e., different tiers of EA) were required to support EIAs. Strategic contexts provided essential guidance in applying the environmental impact mitigation hierarchy, 'need and desirability', cumulative impacts,

[416] Interviewee E3, although other interviewees indirectly alluded to the increased risk of litigation, negates the provision of comprehensive reasoning during decision-making.

trade-offs, and opportunity costs (Interviewees, A3, A4, B1, B3, C3, D2, D3, D4, D5, E1, E2, and E3).

- EIA processes were too process-driven and became a "tick box" exercise that focused on procedural compliance rather than substance.[417] EIAs were too restricted and "narrow"[418] to inform sustainability outcomes. The presence of a strategic environmental context was required to assist EIAs (and against which they can be measured) in achieving sustainability outcomes (Interviewees A1, C3, C4, D3, D4, D5, E1, E2, and E3).

All the interviewees (case studies supported by general responses) regarded EIA as an essential instrument, although opinions differed on how EIAs achieve sustainable development outcomes. There was agreement that tiering can assist in providing a strategic environmental context within which EIAs can operate, enhancing their ability to achieve sustainable development outcomes. EIAs in isolation cannot achieve this goal - this was illustrated by one of the interviewees who highlighted that "…..*environmental assessment, inclusive of tiered environmental assessment …….is a key skill of the future …..EIAs currently fulfil an important role and will in future continue to play a role in facilitating sustainable development outcomes…… in a complex world where socio-ecological interdependencies are increasingly being acknowledged*". The interviewee also highlighted that "……*the heightened political awareness of the need for environmental governance towards a decarbonized future presents an opportunity to improve the way EIPs are perceived, how EMFs and SDFs are considered in decision-making, as well as the role of project-level EIAs within this strategic context*… [but that] *…. tiering must be enabling toward sustainable development options and regulatory efficiency*" (Interviewee E1).

The views that tiering is essential in enabling EIAs to achieve sustainable development outcomes are consistent with the statutory requirement that EIAs must address cumulative impacts and 'need and desirability'.[419] The expectation is that EIAs should address issues beyond site-specific boundaries in a manner that considers the strategic context within which the EIA is situated. However, the inadequate implementation of 'need and desirability' (Chapters 6, 7 and 8; DPME/DEA, 2019)[420] is testimony to the weak consideration of tiering in EA in South Africa, including the inadequate recognition of the role it could play in facilitating sustainability outcomes of EIA processes. The case studies also reflected this clear lack of consideration of the available

[417] that is, where the presence of components (such as mitigation of impacts, public participation and specialist information), rather than the quality thereof, is regarded as adequate.

[418] that is, focusing on impact mitigation rather than fundamentally questioning the sustainability of the development.

[419] Regulation 2, 3, Appendix 2 and Appendix 3 of the EIA Regulations, 2014

[420] Page 42 of the evaluation report on the efficacy of the EIA system in South Africa (DPME/DEA, 2019)

strategic environmental contexts (in the form of EMFs/SEAs) in decision-making (Interviewees A3, B1, B3, C3 and C4) corroborated by general interviews (Interviewees D4, D5, E1 and E3). It confirmed the persistent discrepancy between the theoretical value attached to tiered EAs and their poor implementation in practice.

Although vertical tiering in EA performed poorly in the case studies, the interviewees still attached value to tiering in theory, in contributing to the following:

- The strategic level assessment in SEAs and EMFs could assist in scoping by identifying and focusing on the specific environmental and social aspects that required further detailed assessment during EIAs (Interviewees A3, A4, B3, C3, C4, D4, D5, and E2).

- Strategic-level assessments in the form of EMFs and SEAs considered the resource implications of both existing and future developments, whereas EIAs are primarily focused on future development proposals (Interviewees, D4, D5, and E1).

- Tiering, through SEAs and EMFs, could provide the interface (and bridge the gap) between policies and project-specific EIAs (Interviewees B3, B4, D4, D2, D3, D5, E1, E2, and E3).

- The strategic context assists decision-makers in providing information that informs the reasons and reasoning for decisions – i.e., sustainability is context-specific, and the strategic context assists decision-makers by conveying the meaning of sustainability within a given context (Interviewees B3, B1, B3, C3, C4, D5, E1, E2, and E3).

- Tiered EAs (especially EMFs and SEAs) could contribute by unpacking the complex interactions within socio-economic and socio-ecological systems and achieving a balanced outcome in practice. Due to the interdependent nature of relationships in these complex systems, EIAs are often required to consider impacts that extend beyond the scope of a site-specific assessment and, as such, are dependent on a strategic environmental context to deal with these impacts (Interviewees A3, B3, D3, D4, D2, D3, D4, D5, E1, E2, and E3).

- Tiering in EA assists with managing the environmental performance of existing development and highlighting the implications of decision-making options by being more deliberate in reflecting on the trade-offs made in emerging strategy choices and decisions (Interviewees D5, E1, E2, and E3).

- Related to the above, tiering must assist in the implementation of ‘need and desirability’ as one of the few policy and regulatory avenues available to facilitate the integration of strategic considerations into EIAs (Interviewees D4, D4, E1 and E2).

- Tiering in EA adds value by mapping sensitive environmental attributes, scoping and assessing impacts (at a strategic level), and influencing the scope of issues to be assessed at the EIA level. These strategic contexts do not remove the need for conducting assessments but provide guidance on what constitutes sustainable development options and assist with the identification of alternatives (Interviewee B1, B3, C3, C4, D1, D2, D3, D4, D5, E1, E2, and E3).

- Tiering in EA could support evidence-based law reform aimed at reducing regulatory requirements - i.e., EMFs and SEAs could provide the scientific information that supports the introduction of revised regulatory procedures.

In questioning the reasons for the contrast between the abovementioned theoretical view and the practical reality where EMFs and SEAs were not used during EIA processes, some of the reasons /views provided by interviewees included:

- An unwillingness to move away from the over-reliance on EIA as the preferred assessment instrument and the project-specific information it generates, combined with an unwillingness to consider and interpret the applicability of strategic-level EA informants at the project level (Interviewees D4, D5, E1, and E3).

- Limited skills of EAPs in applying integrated environmental management thinking to complex socio-economic and socio-ecological contexts within which EIAs operate (interviewees C3 and E1).

- That sustainability is context-specific, and the broad generalised information contained in strategic contexts cannot override project-level information (Interviewees A1, A3, B1, D3, C1, C3, C4, D4, D5, E1, and E2).

- Strategic tiers are inadequate in the information they contain and the guidance they provide – it is not relevant to EIA needs and is too vague (Interviewees A1, B1, C1, C2, C4, and D4).

- EMFs and SEAs must be improved to explicitly identify ‘no-go’ and ‘go’ areas (Interviewees A1, B1, C4, D4, D5, E1, E2, and E3) and be more explicit in the trade-offs that are made in land use options.

- The achievement of sustainability was not solely dependent on EIAs – i.e., many developments were not subjected to EIAs, and many environmental concerns (especially linked to existing developments and resource uses) fell outside the EIA regulatory regime (Interviewees D3, C4, D5, E1, and E3).

- Not all EIAs required strategic inputs - certain types of development will benefit from strategic contextual information, whereas the nature of the impacts for other developments will be more site-specific (Interviewees A1, B1, C1, C2, and C4).

- The inappropriate use of tiered information in a manner that disregards relevant information generated during EIA processes or focuses on irrelevant information (Interviewees, D4, D5, E1, E2, and E3). The consideration of relevant information during decision-making is also informed by the PAJA (South Africa, 2000a)[421] and case law (Judge Cloete, 16 May 2012).[422]

- Stringent regulatory timeframes applicable to the EIA process did not adequately allow for the consideration of strategic informants (Interviewees A2, B1, C2, C3, D4, D5, E1, E2, and E3) or not allow adequate time for requesting additional information where relevant (Chapter 8).[423]

- The presence of power dynamics during EIA processes results in a weak reliance on the strategic context or skewing the outcome of the EIA process in some form or another (Interviewees A1, B1, C2, D4, E2, and E1).

- Sustainability is complex, and EIAs cannot fix all sustainability challenges, as some sustainability challenges lie beyond the scope (i.e., the accountability ceiling) of EIAs - e.g. EIAs do not govern unsustainable business practices (Interviewee D5 and E1). Strategic-level assessments and environmental planning must deal with existing and future developments and other resource uses and identify sustainability concerns, cumulative impacts, and opportunity costs, whereas EIAs deal with new proposed developments within this strategic context.

The research also showed that ToC could be a useful approach to communicate and share information (i.e., knowledge brokering), by describing EA processes in a logical and systematic way to internal and external stakeholders. That is, unpacking the causal relationship between different ToC components, its underpinning assumptions and the presence of accountability ceilings in achieving sustainability as a long-term objective. The accountability ceiling reflects

[421] Section 6(2)(e) of the PAJA (South Africa, 2000b).

[422] MEC for Environmental Affairs and Development Planning v Clairison's CC (WC High Court, Case No. 26165/2010) (Judge Cloete, 16 May 2012). One of the key findings of the court's ruling was based on the failure to consider relevant considerations, where the decision-maker ignored the development trend in the area and the recent structure plan amendments (i.e., the strategic context), which allowed similar developments on adjacent properties (Judge Cloete, 2012).

[423] Chapter 8, the George Rex case study, is an example where the decision-making authority could have requested additional information to address procedural flaws and inadequate provision of information of the EIA.

that sustainability is a collective whole-of-society obligation beyond the sole responsibility of the environmental sector.

In summary, the case studies and interviewees emphasised that sustainability was context-specific and that EIAs would remain the most important EA instrument to achieve sustainability outcomes at the project level. Although it was emphasised that in most instances EIAs could not operate as a stand-alone instrument without being informed by a strategic environmental context, EIA practices contradict this view as the case studies (corroborated by general views) reflected a poor use of strategic environmental contexts to inform the reasoning for sustainability during EIA processes. The poor reflection of strategic contests during EIA processes also constituted a weak policy and legislative framework implementation, e.g., need and desirability. There was also a tension between the drive for regulatory efficiency and substantive effectiveness. While the drive for regulatory efficiency was regarded as a constraint that hampers the substantive effectiveness of EIAs, it was also seen as an opportunity to demonstrate the value of tiering to improve the efficiency and effectiveness of EIAs (and EA in general). Inadequate attention was being given to tiering in EA, undermining the role of EIAs in contributing towards achieving sustainability outcomes.

Overall, the assumption that EIAs were supported as essential instruments in EA tiering for achieving environmental rights is partially supported.

9.9 A Theory of Change narrative for EA tiering in South Africa based research results

This section presents the ToC narrative and ToC map (Figure 9-1) based on the research results. It describes the causal relationship between the various ToC components based on the research results to explain how tiering in EA in South Africa functions based on practices:

Tiering in EA is not adequately supported by a clear policy context and legislative framework. Tiering is not legislated. While individual EA instruments at different tiers are catered for in legislation, the tiering relationship between instruments is unclear. The strategic-level assessment tier is voluntary, as there is no mandatory requirement to perform strategic-level assessments. Also, the legislative framework for project-level assessments is well-regulated but is changing in response to the demand for regulatory efficiency in South Africa. There is an increasing trend in using strategic-level EAs to develop regulatory instruments to replace the existing legislated EIA process (Design component).

As inputs into EIA processes, information flowing from tiered assessments is only available in certain instances where the political will and resources exist to conduct SEAs or EMFs. The varied availability of SEAs and EMFs results from their voluntary legal status. As the two strategic environmental assessment instruments, EMFs and SEAs are not available to inform EIA processes in all instances. As such, tiering in EA is only available in certain priority sectors and specific geographical areas, creating uneven playing fields between sectors and geographical areas. Inadequate human skills, time, and financial resources are available for EA, exacerbated by stringent regulatory timeframes and EIA-levels. Information flowing from other sectors and environmental planning outputs is readily, but uncritically, considered in EIA processes (Input component).

In practice, the information contained in EMFs and SEAs is not used to inform EIA processes and decision-making, or if it is used, it is not reflected in EIAs or the decisions. The regulatory mechanisms and outputs that flow from these EMFs and SEAs are accepted and uncritically used without reflecting on the strategic context created by the EMFs or SEAs. This means that vertical tiering in EA is weak. Strategic-level inputs into EIA processes are achieved through diagonal tiering between strategic informants in other sectors (such as SDFs) and EIAs, as well as between functional-specific environmental planning documents (such as biodiversity plans) and project-level EIAs. It also means that sustainability outcomes are inadequately catered for as part of the strategic environmental context, as neither environmental planning products nor other sectors' strategic planning documents (Apart from SDFs) purport to assess social, economic, and biophysical inputs in a balanced manner to support the achievement of the constitutional environmental right. The poor consideration of sustainability aspects in EIA processes is further exacerbated by the lack of documented consideration of SEA and EMF information during EIA processes and decision-making (Activity component).

In all instances, strategic-level EA outputs in the form of EMFs or SEAs are not available to inform EIA processes. Where it is available, the EIA reports and decisions issued by the authority are inadequate in referring to the strategic-level EAs. Therefore, EMFs and SEAs are not effectively used to influence the scope of EIAs, the identification of alternatives, the application of the impact mitigation hierarchy, cumulative impacts, trade-offs, and decision-making. Also, the information in EMFs and SEAs is not used to provide reasons and reasoning for achieving sustainability outcomes at the EIA level (Output component).

The implications are that the contributions vertical tiering in EA should make to inform EIA processes, including guidance on achieving sustainability, are weak or absent. Also, the knowledge brokerage role of EMFs and SEAs in guiding sustainability is lost, and the role of the

EAPs and decision-making authority as knowledge brokers is diminished. This knowledge brokerage void exacerbates the perception that EIA is not an efficient and effective EA instrument. The increasing trend of developing regulatory instruments following strategic-level assessments indicates that the EIA system responds to the calls for efficiency flowing from economic and political pressures. There is an ongoing drive to develop regulatory instruments or create separate EA processes for different sectors. Regarding cooperative governance, there are examples of collaboration between the environmental sector and other sectors. However, based on the voluntary status of strategic-level EAs, such collaboration was driven by the political will to do so rather than being mainstreamed into legislation, policies and institutional arrangements. (Outcome component).

Ultimately, the result of the poor EA practices highlighted above is that the role of vertical tiering in EA is unclear. It is poorly utilised in the reasons and reasoning provided during EIA processes and decision-making and in contributing towards sustainability outcomes and the progressive realisation of the environmental right contained in the Constitution (Impact component). There is a firm belief that tiering can and must contribute to the progressive realisation of environmental rights, but poor EA practices in establishing and using tiering undermine this aim.

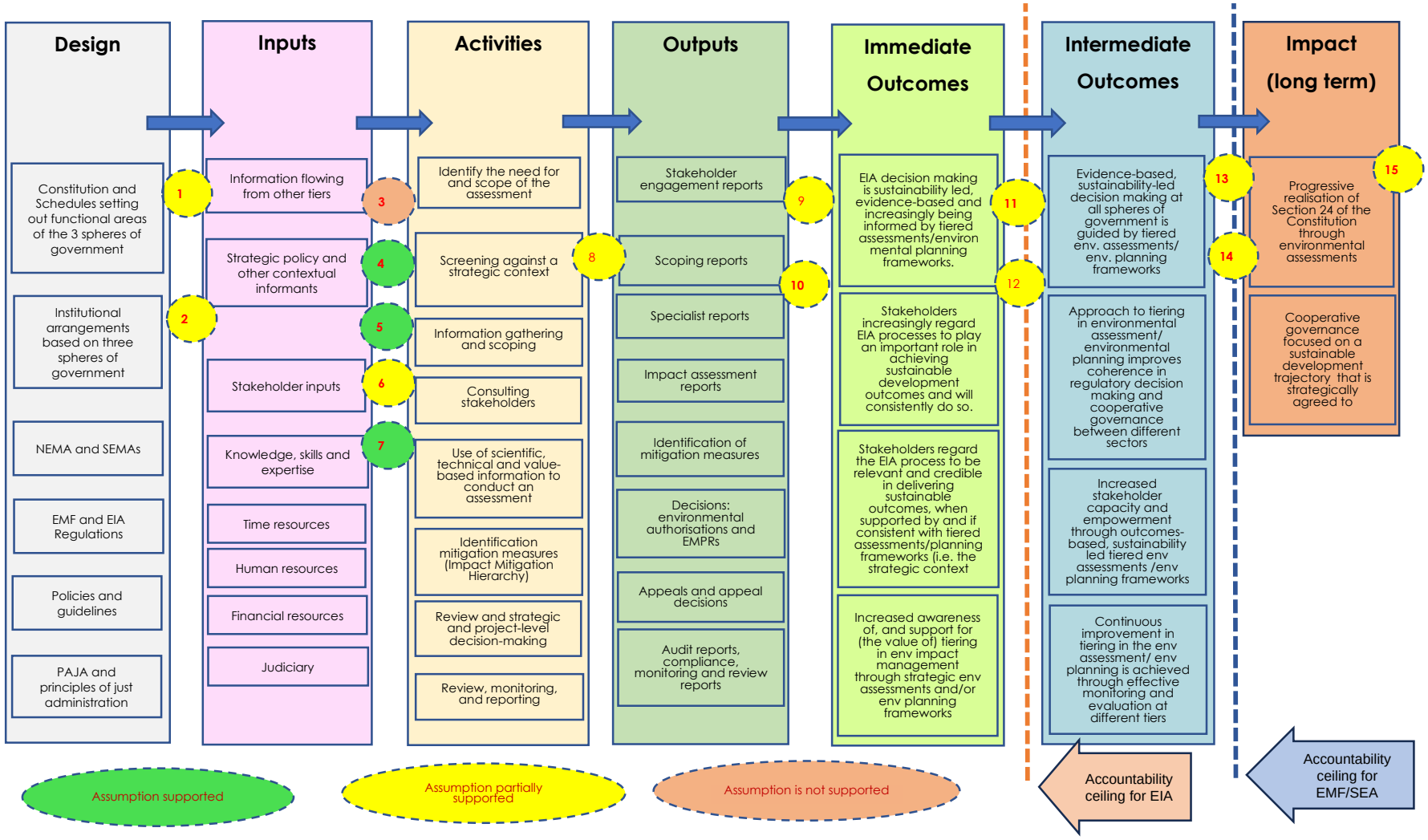

Figure 9-1: ToC map for EA tiering practices in South Africa based on research results

CHAPTER 10: CONCLUSIONS AND RECOMMENDATIONS

The overall aim of the research to critically evaluate EA tiering in South Africa, was achieved. The efficiency and effectiveness of tiering in three case studies were evaluated in Chapters 6, 7 and 8. In Chapter 9, the results of the cross-case and overall analysis were provided. This chapter discusses how research objectives 1 (section 10.1) and 2 (section 10.2) were achieved. Section 10.3 reflects the results of research objective 3, to critically evaluate tiering within the South African environmental assessment system – summarised per ToC component. Section 10.4 provides recommendations, representing research objective 4, to improve tiering in EA in South Africa and internationally. Section 10.5 contains a discussion relating the research findings to national and international literature. Contributions to the international literature on tiering in EA are discussed (section 10.6), and future research recommendations are made (section 10.7).

10.1 Research Objective 1: To develop an international conceptual and theoretical understanding of tiering.

Research objective 1 builds an international conceptual and theoretical understanding of tiering in EA and the Theory of Change (ToC).

The concept of tiering in EA is not new and already emerged in the 1980s, often referred to as providing and linking different levels of assessment in support of PPP(P)s or Policies, Plans, Programmes and (Projects) (Section 1.1) – tiering is "[t]*he deliberate, organized transfer of information and issues from one level of planning to another, which EAs are supporting*…." (Arts *et al*., 2011:417). However, most of the attention is focused on specific EA instruments (i.e., SEAs and EIAs), but EA tiering *per se* (i.e., linking EAs) received less attention. As discussed in Section 2.2, tiering in EA is focused on the relationships and the flow of information between different EA instruments rather than on individual EA instruments. This focus on individual EA instruments rather than tiering is also illustrated by a few examples, such as the USA and the EU, where tiering is legislated (Section 2.5).

The value of tiering in EA, as reflected in the international literature (Section 2.3), includes:

- EIAs *operate within complex socio-ecological systems* – i.e., communities where multiple and diverse relationships create identities with boundaries and limits. Tiering in EA assists in unpacking this complexity and provides different levels of information, cascading from a strategic level to inform subsequent tiers of assessment.

- Tiering also represents a process of *rationalising information requirements* and avoiding duplication of information and knowledge between subsequent tiers of EA.
- Tiered assessments can *prevent the premature closure* (scoping out) of certain impacts, which may significantly impact the environment, without such impacts being assessed and concluded rationally. Equally so, it can assist in scoping out issues of insignificant impact.
- Tiering in EAs contributes to the ability of different levels of EAs to deliver on the promise of *sustainable development outcomes* collectively. This contribution is especially relevant in the sustainability context created at a strategic level to facilitate achieving context-specific sustainability outcomes.
- Tiering in EA *enables the involvement of diverse stakeholders, relationships and information* to inform knowledge generation and knowledge transfer between tiers and stakeholders, especially by providing a strategic context for project-level EIAs and decision-making.
- Tiering also *enhances (and emphasises) the knowledge brokerage* role of different assessment instruments and the roles of different stakeholders as knowledge brokers. Strategic-level information is crucial in providing a broader context to inform project-level EIA processes. Effective knowledge brokerage facilitates the empowerment of stakeholders, especially in the complex interrelationship between social, economic and biophysical components of the environment at the EIA level in achieving sustainability outcomes.

In practice, tiering is elusive, especially as it is not legislated for in many countries, including South Africa. The sequencing of EA is often out of sync, and PPPPs are perceived and implemented differently depending on operating contexts (Sections 2.2 – 2.4). The lack of regulatory clarity on tiering often also influences the allocation of time and financial resources toward establishing a tiering system (Section 2.5). The complexity of policy, strategic planning and regulatory decision-making often influence how tiering is implemented in practice.

Within the EA system in South Africa, EIA practices are consistent with international experiences (Section 2.9). This research highlights key characteristics of the EA system in South Africa that influence how tiering is implemented (Section 2.9), including:

- The legislative landscape in South Africa, within which EA operates, is highly fragmented across different functional areas (e.g., biodiversity, waste management, air quality, coastal management and climate change).
- EA practices in South Africa have an inherent sustainability focus that flows from the Environmental Right in the Constitution.

- SEAs in South Africa have been implemented following a planning approach rather than an environmental impact assessment approach (i.e., mapping constraints and opportunities rather than assessing impacts).
- EMFs are unique to South Africa and, alongside SEAs, are regarded as strategic-level EA instruments with a focus on environmental planning rather than environmental assessment.
- The strategic-level EA tier is voluntary (i.e., there is no legal requirement to conduct SEAs and EMFs), whereas EIAs are mandatory.

This research showed that using ToC could provide a useful approach for research or monitoring and evaluation. ToC is used primarily in an *ex-post* manner to reflect the expected pathway of change processes and their intended outcomes, which are to be evaluated and reviewed over time. In this research, ToC was used to build a logical framework for tiering in EA. Developing the ToC enabled unpacking the causal relationships between the different tiers of EA and the underlying assumptions of how tiering in EA functions. Building on the causal relationship between ToC components and its underpinning assumptions, ToC can also be used in evaluation research on the effectiveness of EA systems. This research also showed that ToC could be used by the environmental sector to communicate and share information (i.e., knowledge brokering) by describing EA processes in a logical and systematic way to internal and external stakeholders. That is, unpacking the causal relationship between different ToC components explicates the underpinning assumptions and the presence of accountability ceilings in achieving sustainability as a long-term objective. The accountability ceiling reflects that sustainability is a collective whole-of-society obligation beyond the sole responsibility of the environmental sector

The theoretical roots of ToC can be traced back to the emergence of logic planning models from the 1970s onwards (Section 3.3). It has been successfully used in various fields, including community initiatives, medical research, mental health, agricultural research, human rights, international development support, and sustainability. One of the strengths of ToC is its flexible application, ranging from using it to reflect the logic of a programme/initiative to facilitating deeper reflections (i.e., dialogue and knowledge brokerage) on mapping change processes and the analysis of values. ToC is often used to evaluate the effectiveness of institutional policies, programmes and strategies (Section 3.4). An example pertinent to tiering in EA is the South African Government's use of ToC methodology in the evaluation of the implementation of EIA in South Africa (Section 3.4). In that evaluation study, ToC was used to build a logical framework for EIA and to develop an evaluation framework, which was used to evaluate the effectiveness and efficiency of the EIA system in South Africa. The typical components of a ToC map (Section 3.5, figures 3-2, 6-3, 7-3 and 8-5 for the cases and 9-1 for overall EA tiering in SA) include:

- The strategic impact represents the ultimate goal to be achieved. These goals are aspirational and are often not achieved through the sole influence of the specific initiative/policy/programme to which the ToC is applied.
- Outcomes represent the (desired) change in status or condition in people, communities, institutions, or natural and manmade environments. Outcomes (long-term or intermediate) are distinguished from impacts insofar as the former constitutes the direction of change toward achieving the ultimate goals/impact.
- Outputs represent the deliverables or products that, when implemented, will collectively lead to achieving the desired outcomes. It represents the actual deliverables produced.
- Activities or interventions address the 'what must be done' aspects within a project, plan, programme or initiative to achieve a specific output and outcome.
- Inputs relate to the resources required for actions to be taken.
- Design and contextual information represent the strategic or broader informants that shape or influence the various ToC components – for example, economic climates, geo-political differences, different constitutional dispensations, jurisprudence, and different institutional approaches. This influences how resources are made available and used, how actions are performed, or how outcomes are perceived.
- Assumptions are essential components of ToC approaches and assist in recognising and explicitly addressing the uncertainties and perceptions that underlie plans, programmes, projects, or initiatives. Assumptions are associated with the relationship between the different ToC components and represent the critical factors influencing the successful implementation of an initiative, policy, plan or programme.

When applying the ToC approach, the typical output is a ToC map (see Figures 6-3, 7-3 and 8-5). It constitutes a visual presentation of the various ToC components of the initiative at hand and provides a quick visual overview of the causal pathways between the different components in a ToC.

10.2 Research Objective 2: To develop an evaluation framework for tiering within the South African environmental assessment system.

In phase two (2) of this research, the ToC was used to build a logical framework of how tiering in EA in South Africa works based on the various ToC components and the assumptions that underpin the causal relationship between them (Chapter 4). The ToC map (Figure 4-2) reflected EIA processes within the tiered EA context in South Africa. Based on the logical framework

presented in the ToC map, a ToC narrative for how EIA functions within a tiered EA system in South Africa can be described as follows:

> *An adequate institutional context exists in the form of legislation, policies and institutional arrangements that provide tiered EA information to inform and guide EA processes (Assumptions 1 and 2). Environmental impact assessment (EIA), as the lowest tier of EA in South Africa, is informed by credible and current strategic contexts that are supported by all stakeholders(Assumptions 3, 4, 5, 6, 7, and 8) (input component) that are required to conduct, participate in, or review EIA processes (activity component). Conducting these EIA processes results in EIA reports as deliverables, and the review thereof produces decisions (output component) to achieve tiered, aligned, (Assumptions 9 and 10) evidence-based, well-supported, sustainability-led decision-making (assumption 11, 12 and 13) (outcome component). These decisions will contribute toward the progressive realisation of the environmental right in Section 24 of the Constitution and contribute to cooperative environmental governance (Assumptions 14 and 15) (impact component).*

The logical framework for how EIAs function within a tiered EA system in South Africa is consistent with international practices. The fifteen assumptions underlying the causal relationship between all the ToC components are reflected in the above narrative. The logical framework and its assumptions were used to formulate an evaluation framework to evaluate three case studies. The evaluation criteria (see Table 5-1), in the form of questions, were designed to:

- evaluate the performance of identified EIA case studies against the evaluation criteria /questions by reviewing documentation and interviewing key case study role-players;
- evaluate the performance of identified EMFs/SEAs applicable to the EIA case studies in creating a strategic environmental assessment context for the EIAs. Performance was evaluated against criteria/questions by reviewing documentation and interviewing key case study role-players; and
- evaluate the effectiveness of tiering in EA against the evaluation criteria/questions through case study reviews and by interviewing key role-players on EA and tiering in general.

The three case studies were in the Western Cape Province of South Africa. The selection of case studies was based on 1) the accessibility of the information (i.e., the Western Cape Government's information management was effective, and information was readily available), 2) the EA processes followed were representative of South Africa as a whole, 3) the decision-making context was consistent with the rest of the country, 4) the EIA case studies represent three different types of development, 5) different decision-outcomes (i.e., two environmental

authorisations and one refusal, and 6) the author was familiar with the governance context within which the case studies were situated.

The methods of data collection employed were:

- The evaluation of the documentation relevant to the EIA process, including the decisions issued (also see Appendix 1).
- The evaluation of the relevant strategic assessment instrument (i.e. SEA and EMFs) that was compiled for the geographical area and/or the sector within which the proposed development was situated.
- Interviews were conducted with two broad categories, namely key role-players involved with EIA case studies (i.e. the EAP conducting the EIA and the official reviewing the EIA for decision-making) and key role-players involved in the EMF/SEA case studies (i.e. the consultant responsible for conducting the relevant EMF/SEA and the official managing the process of developing the EMFs/SEAs). The inputs of other stakeholders were evaluated based on their written inputs provided during EA processes.
- General views of stakeholders on tiering in EA were also considered. During the case study reviews, some interviewees provided answers that apply generally, not only related to the case studies. The case study reviews were augmented by further generic interviews with additional environmental authority decision-makers and planners in the environmental authorities responsible for environmental planning and regulatory decision-making.

In this research, the ToC concept was effectively used to build a logical framework for evaluating EA tiering in South Africa. This study showed that the ToC components provide a systematic approach to the different elements of EAs and the causal relationship between them. Also, TOC offered an opportunity to unpack and investigate the underlying assumptions that characterise this causal relationship between ToC components. In general, the assumptions are not always considered or unpacked when debating EA practices. The logical framework developed for EA during this research illustrated the crucial role of assumptions in EA practices. In addition, the identification of accountability ceilings in EA (which are different for EIAs compared to SEAs and EMFs – see Figure 9-1) provided insight into the outcomes that can be attributed to EA – i.e., although EA can contribute towards certain strategic outcomes, achieving these outcomes are not solely reliant (or within the control) of EAs. Accountability ceilings create awareness about the role and expectations of EA in contributing, rather than being solely responsible for achieving sustainability outcomes - i.e., EA is a necessary but insufficient condition for achieving sustainability.

10.3 Research Objective 3: To critically evaluate tiering within the South African environmental assessment system.

In phase 3, the evaluation framework was applied to three case studies (Chapters 6, 7 and 8).

The Rietkloof case study (Chapter 6) involved tiering between 2009 and 2019 of two EIA applications for Wind Energy and a SEA for wind farm renewable energy developments (the Renewable Energy SEA). The Penhill case study (Chapter 7) regarded tiering between an EIA application, EMF and SDF. The proposed Penhill Mixed Use development entailed a greenfield mixed-use development on a farm inside the urban edge of Cape Town (CoCT). Finally, the George Rex case study (Chapter 8) involved tiering between two EIA applications for the same development and an EMF between 2010 and 2019. The development proposal was the outcome of an EIA process and comprised a mixed-use development focusing on sport, adventure, and tourism.

The results of the cross-case and overall analysis were presented in Chapter 9. The extent to which the assumptions underlying the logical framework for EA tiering in South Africa were supported by the research results (Section 9.2, Table 9-1) was discussed. The cross-case and overall analysis results were then used for a ToC map (Figure 9-1) and narrative (section 9.3) that reflect EA tiering practices in South Africa.

The following (sub)sections critically reflect on the research results by comparing the ToC narrative presented in Chapter 4 to the narrative presented in Section 9.3. Although the information in this section is discussed per ToC component, the interdependent nature of the causal relationship between the ToC components creates, intrinsically, a level of overlap. For example, the lack of human and skills resources (inputs) also contributes to poor EA practices (activities), and the poor investment in strategic-level EA results in a void in strategic-level outputs, which in turn results in a void in strategic-level inputs into EIA processes.

10.3.1 Design component

The requirement to develop tiers of PPP informed by tiered assessments is not legislated, and tiering in EA is not supported by a clear policy context. This lack of a clear policy and legal framework for creating tiered EAs contradicts the ToC narrative presented in Chapter 4. In terms of PPPs, the following key characteristics stand out:

- No provision is made for the intentional establishment of tiered and aligned PPPs. Provision is made for specific PPPs (e.g., EIPs and EMFs), but not for linkages between these instruments.

- No provision is made in legislation for long-term integrated environmental planning (in the NEMA) beyond 5 years to address the intergenerational nature of environmental challenges. The NEMA provides State of Environmental Reporting (i.e., scientific evidence measuring change in the environment over time). However, using this information in EAs to support the development of PPPs, focusing on long-term planning, is not provided for in legislation.
- No sustainability objectives have been identified to reflect the application of international sustainable development goals at the country level. As a result, no sustainability objectives have been identified at the provincial or local levels. The lack of sustainability objectives also means that evaluating the substantive effectiveness of EAs, especially EIAs, is a major challenge.
- Functional-specific environmental planning is catered for in a fragmented manner, with separate legislation for air quality, waste management, biodiversity, climate change, and coastal management. However, no provision is made for integrating and assessing these fragmented environmental planning outputs to incorporate social, economic and biophysical considerations in a balanced manner. These functional-specific environmental planning outputs are produced for different tiers with no provision for integrating them into a single policy or plan.

In terms of tiered EAs to inform PPPs in the South African context, the following stand out:

- Strategic-level EAs are voluntary, and there is no legal requirement for PPPs to be informed by SEAs.
- SEAs are provided for in legislation, but no content and procedural requirements are set. Its application is voluntary. The lack of clear procedural and content requirements has led to diverse SEA practices and applications. SEAs in South Africa are used more as environmental planning instruments than EA instruments. SEAs are not often used as EAs to inform policy and law reform initiatives – there are no legal requirements that PPPs must be preceded and informed by EAs.
- EMFs are strategic-level instruments that are unique to South Africa. Although it shares some similarities with SEAs, it is primarily used as environmental planning instruments focused on mapping environmental sensitivities and developmental opportunities. The procedural and content requirements of EMFs are provided for in legislation. EMFs are voluntary instruments and their development is at the discretion of authorities.
- SEAs are enabled in legislation but are voluntary, and no procedural and content requirements are set. Similar to EMFs, SEAs are used as environmental planning instruments, rather than assessment instruments.

- EIAs are mandatory. Environmental authorisation must be obtained before conducting developments that trigger activities listed in terms of the NEMA. Applications for environmental authorisation must be informed by an EIA.

Based on the above, and contrary to the ToC narrative presented in Chapter 4, the requirement to develop tiers of PPP informed by tiered assessments is not supported by a clear legislative framework, especially compared to the land use planning sector[424] and international best practice examples.[425] The strategic-level EA tier, represented by SEAs and EMFs, is the weak link from a legislative perspective, due to its voluntary status - i.e., the use of SEAs and EMFs is discretionary. This voluntary status of SEAs and EMFs undermines their implementation and the value that could be derived from tiering in EA.

Flowing from the limitations in the legislative context, there is a dearth of information in policy documents on tiering related to EA. The legislation relevant to EAs in South Africa is not supported by policies that address tiering in a meaningful way. Tiering in EA is not explained or promoted in policy frameworks with purpose and intent. The implications are that limited guidance is provided on applying vertical, horizontal, and diagonal tiering, especially when guiding EIAs as the lowest assessment tier. The lack of information to explain tiering in EA also resulted in a low level of awareness of the role and value of tiering in EA. The results of this research confirmed the low level of awareness of EA tiering.

As highlighted above, functional-specific environmental planning outputs do not represent an assessment of all components of the environment (i.e., biophysical, social and economic). SEAs and EMFs are the only strategic-level EA instruments that integrate all functional-specific environmental planning outputs in a manner that considers all components of the environment. The research also confirms that South Africa has a unique approach to implementing the strategic-level EA tier. It shows that SEAs and EMFs constitute an environmental planning approach that is more focused on opportunity and constraint mapping than assessing impacts – i.e., it focuses strongly on 'avoidance' as the first step of the impact mitigation hierarchy.

As discussed in Chapter 2, EA is influenced by government contexts. This research highlighted some elements of the governance context for EA in South Africa. These elements included an anthropocentric approach to sustainability, a strong socio-economic developmental focus and an associated drive for regulatory efficiency. Such a governance context often results in a relatively

[424] Tiering as provided for in land use planning contained in the planning legislation (South Africa, 2013).

[425] In the United States the reference to tiering is found in the 'Final Rule Modernizing its NEPA Implementing Regulations' (CEQ, 2020).

'weak' level of sustainability where natural capital is readily traded off for socio-economic capital gains. This governance context influenced how EA has been institutionalised – where the institutionalisation of EIAs has been prioritised (with a focus on regulatory efficiency), and a clear lack of institutionalisation of strategic-level EAs (i.e., EMFs and SEAs). Elements of institutionalisation that were revealed by this research (discussed elsewhere) include the regulatory and policy frameworks, institutional structures, and institutional resources. This research found that the lack of institutionalisation of strategic-level EA significantly contributed to the weak performance of EA tiering.

Consistent with the above-mentioned governance context, this research confirms that EMFs and SEAs are only used where the political will and resources exist to do so. However, considering the stringent austerity measures being implemented in the government sector, the availability of adequate resources to maintain the already limited existing level of investment in SEAs and EMFs is unlikely to be sustained. The environmental departments at the provincial level of government, being the lead authority for developing EMFs,[426] are especially impacted by this challenge. Therefore, the continued use of EMFs in the future is at risk, even though, as an EA instrument, it is regarded as important.

Within the current EA system, the institutional focus is primarily on EIA as the final EA tier, combined with a specific drive toward regulatory efficiency. This research confirms that the legislative framework for project-level EAs is changing in response to the demand for regulatory efficiency in South Africa. There is an increasing trend in using EMFs and SEAs to develop regulatory instruments to replace or support the existing legislated EIA process. While creating tiering arrangements at the programme level in specific sectors is successful, this creates uneven playing fields between sectors because different regulatory requirements apply for similar impacts in different sectors, rather than addressing the root causes of the efficiency and effectiveness challenges in EA across all sectors and tiers. However, inadequate attention is given to the strategic context that should be provided by strategic-level EA tiers and their guidance toward substantive effectiveness. This research emphasises the imperative that future, tiered EA systems must address both time and cost efficiency and substantive effectiveness (i.e., sustainability).

Tiering in EA can make a valuable contribution by providing strategic contextual information that should inform both efficiency and effectiveness considerations of such law reform initiatives – i.e.

[426] Section 24(10) of the NEMA states that the MEC (the provincial level of government) with concurrence from the minister (the national level of government).

evidence-based law reform. Also, using a ToC approach will assist in focusing on the root causes that must be addressed by law reform.

The results of this research confirm that the lack of a strategic context is one of the main contributing factors influencing both the efficiency and effectiveness of EIA processes. Without changing the voluntary status of EMFs and SEAs through law reform, it is unlikely that the current institutional arrangement needed to support EA tiering, especially conducting strategic-level EAs, will improve. Put differently, without being legally required to conduct EMFs and/or SEAs, it is unlikely that institutional resources will be provided to do so.

Through the use of the ToC, the research showed that the design component, specifically the legislative framework, provides the foundation for effective tiering in EA. Put differently, how tiering is legislated will significantly influence (i.e., the causal relationship that constrains or enables) other ToC components, especially inputs and activities, as discussed in the next sections.

10.3.2 Input component

According to the ToC narrative presented in Chapter 4, the successful implementation of tiering in EA depends on the availability of inputs, including human resources and other institutional resources such as information, time, finances, and skills.

Based on its voluntary status, this research found that EMFs and SEAs are not available in all instances to support EIAs. The voluntary status of these instruments also means that political will is required to conduct EMFs and SEAs and allocate institutional resources. However, the political support and resources as input requirements vary, and PPPs and the EAs to inform them are only available in certain priority sectors and specific geographical areas. The research showed that in South Africa, limited investments have been made in strategic-level EA, represented by EMFs and SEAs. Considering the stringent austerity measures being implemented in the government sector, the availability of adequate resources to maintain the already limited existing level of investment in SEAs and EMFs is unlikely to be maintained in the future, particularly at the provincial level, without the re-allocation of existing human and financial resources.

The research also found that in the absence of SEAs and EMFs, EAPs (both in conducting and reviewing EIAs) readily fill this void by considering functional-specific environmental planning outputs and strategic planning outputs in other sectors, especially SDFs. Although these functional-specific environmental planning inputs do not constitute an assessment of all

components of the environment, they are uncritically accepted and used in EIA processes. Similarly, the strategic contexts created in other sectors, particularly the land use planning sector through SDFs, are readily, but uncritically considered to represent the strategic environmental context. The uncritical manner in which information from other sectors and functional-specific environmental planning informants are incorporated into the EIA process is best described by the comments received from an interviewee that "..*we* [EAPS] *have lost our ability to apply integrated environmental management thinking at EIA level*…[to] *…ensure sustainable development outcomes*". Regarding the availability of skills, the challenge was described by one of the interviewees as follows – "… *the current EIA system will not work because those performing EIAs and those reviewing it have developed their expertise and were taught to be good at EIA procedures, and they do not have the ability and skills set to think and apply an integrated environmental management approach to environmental assessment*….[and this is] *…..exacerbated by the stringent timeframes for reviewing EIAs*". The effective implementation of EA tiering requires that skills and sound practices be present, but the research indicates that these skills and practices as input requirements are perhaps lacking.

Regarding allocating institutional resources to conduct EAs, the strategic-level EA is impacted the most. Considerable human and financial resources (state and private sector) have been invested in EIAs. Also, government institutions use significant human and financial resources to perform functional-specific environmental planning. However, insufficient government resources are allocated toward the strategic-level EA and integrated planning to integrate functional-specific environmental planning efforts. In contrast to project-level EIAs, inadequate financial and human resources are allocated toward strategic-level EAs. This situation is exacerbated by SEAs and EMFs being voluntary instruments, as there is no imperative for government to allocate resources toward conducting SEAs and EMFs unless the political will exists. However, as indicated by the research, where the political will does exist, it is often linked to promoting infrastructural development in specific sectors with the predominant purpose of improving regulatory efficiency. This drive results in the development of alternative regulatory instruments to benefit certain sectors, but also creates uneven playing fields between sectors in the application of EIA.

10.3.3 Activity component

The research found that both EAPs and specialists involved in conducting EIAs (consultants) and reviewing EIAs EAPs (in the government's employ) acknowledge that information flowing from strategic-level EAs should inform EIA processes and achieve strategic goals such as sustainability. However, according to the research results, this does not happen in practice, and

information contained in EMFs and SEAs is not used to inform EIA processes and decision-making, or if it is used, it is poorly reflected or absent in EIAs and the decisions issued. There is a discrepancy between this theoretical understanding of the importance of vertical tiering in EA and the practical implementation thereof, resulting in vertical tiering in EA being weak in practice. The research results also show that EAPs and specialists readily use other strategic informants during the EIA process. These informants mainly include functional-specific environmental planning documents (such as biodiversity plans) and land use planning outputs (i.e., SDFs). However, little evidence was found that these informants are critically considered. Regardless of the adequacy thereof, the research found that using these strategic informants reflects diagonal tiering between strategic-level land use planning/environmental planning informants and EIAs. The research results also show strong horizontal tiering between EMFs/SEAs and SDFs, based on the clear land use planning legislation requirements that SDFs must consider and incorporate strategic planning information of other sectors. Such requirements are not provided for in environmental legislation.

The results from the case studies showed that, from a knowledge brokerage perspective, the value that decision-makers attached to the strategic context (other than acknowledging and utilising the revised regulatory process) was not reflected in the reasons or reasoning in the written decisions. This was unfortunate as the interested and affected parties/ stakeholders were not provided with information to understand the value the decision-maker (should have) attached to the strategic context. This lack of reasons and reasoning diminished the knowledge brokerage role that tiering and the decision-making authorities should have played - i.e., the importance of sharing and transferring knowledge, empowering communities and stakeholders impacted by developments. The latter also refers to the role of knowledge brokerage in contributing toward building social networks that allow communities to build identities within the boundaries of what constitutes acceptable change (impacts) within these communities. The research found low levels of awareness of the strategic environmental context (represented by the EMF /SEA) amongst stakeholders in other sectors and the general public. If they were aware of the strategic context, they attached little value to it as it was not reflected in their written communications during the EIA processes. The knowledge brokering role of EAPs, which empowered stakeholders on the importance of information flowing from tiered EAs to address strategic concerns such as opportunity costs, cumulative impacts, and sustainability, was significantly diminished or lost.

10.3.4 Output component

The research found that EMFs and SEAs as strategic-level outputs were credible (i.e., evidence-based specialist inputs addressing all relevant issues) and the outcome of a transparent, consultative process. However, the currency of information (i.e., being up to date) and the sequencing of tiered EAs remain a challenge. The research results from the activity component indicate that vertical tiering is poor, providing little evidence that strategic-level tiered information contained in SEAs and EMFs was considered and incorporated into EIAs and decisions issued.

The currency of information in SEAs and EMFs depends on regularly updating these deliverables. However, as highlighted, the voluntary status of these instruments means that the review/updating thereof depends on the political will and the availability of resources to do so. Considering the austerity measures being implemented in government (Minister: FFE, 2024), the allocation to institutional resources (i.e., clear strategies to develop EMFs and SEAs and the allocation of human resources and funds to do so) will remain uncertain and unlikely to improve. This resource crunch has a significant limiting effect on the currency of EA outputs and impacts negatively on the effectiveness of EA tiering.

The research results showed that the sequencing of PPPPs and their associated EAs is a challenge. It was found that EIAs often precede the establishment of strategic contexts. However, this challenge does not invalidate the importance of conducting SEAs or EMFs, as there is an ongoing need for a strategic context to guide future development on matters of strategic importance, including strategic alternatives, cumulative impacts, opportunity costs, trade-offs, and sustainability. Also, EMFs and SEAs must provide guidance on managing existing natural resource uses and their socio-ecological and socio-economic implications. The need for tiering in EA to provide a strategic environmental context for the EIAs was acknowledged, even if the practical implementation is challenging.

The research confirmed that the criticism leveraged against SEAs and EMFs relates to both efficiency and effectiveness (although less so for SEAs). From an efficiency perspective, the criticism was that EMFs and SEAs did not assist in making regulatory processes more efficient unless it resulted in reduced regulatory requirements. However, while the content of EMFs and SEA can be improved,[427] the research results showed that SEAs and EMFs did contain relevant information that can contribute to efficiency gains, but that there was a poor use of information flowing from strategic tiers to reduce information requirements at the EIA level. This poor use of

[427] The view that EMFs and SEAs can be improved is partly linked to the complex nature of sustainability as a goal that cannot be fully determined (or achieved) but can always be improved on.

information indicates poor EIA practices, as well as poor practices in strategic-level EA follow-up to ensure continuous improvement in the use of tiered information. From an effectiveness perspective, SEAs and EMFs were also criticised for being irrelevant in guiding sustainability – i.e., the SEA and EMF information did not provide adequate guidance on sustainability. According to the research results, the EIA outputs in the form of EIA reports and the decisions issued by decision-making authorities did not provide reasons and reasoning for the project proposal's consistency with the strategic environmental context provided in the EMF or SEA. Also, during the EIA process, little reliance was put on the strategic context provided by EMFs and SEAs to deliberate on the sustainability outcomes of the EIA process. It was found that through diagonal tiering, reliance was more readily placed on the well-established strategic land use planning context provided by SDFs. Although the decisions in two of the three case studies aligned with the strategic environmental contexts, the EIA decisions contained inadequate reasoning related to the strategic environmental context. Although the regulatory requirement that 'need and desirability' must be addressed in EIA processes (in conducting EIAs and in decision-making) has the potential to improve the effectiveness of tiering in EA, it was ineffectively utilised. The lack of reasons and reasoning for sustainability (especially in the decisions issued by authorities), also reflected poor practices and a lack of integrated environmental management thinking skills. Without reasons and reasoning provided by decision-makers, there was no clarity on how the decisions aligned with and validated the strategic environmental context. Therefore, the knowledge brokerage role of decision-making authorities in consistently setting the example of using strategic-level information to evaluate the sustainability outcomes at the EIA level was lacking. This results in EIA practices being established where EAPs do not (see the need to) present information in this manner.

10.3.5 Immediate outcome component

In the ToC narrative developed in Chapter 4, it is expected that as an immediate outcome of effective tiering in EA, the strategic context in EMFs and SEAs will provide guidance on strategic matters such as cumulative impacts and sustainability and that stakeholders will, therefore, attach value to the strategic context provided by EMAs and SEAs, during EIA processes.

The research results do not support this assumption. The research found that the information in the EMFs and SEA provided relevant information to guide EIA processes on matters of strategic importance, including strategic alternatives, cumulative impacts, opportunity costs, trade-offs, and sustainability. However, the quality of information must be improved to address the above issues better. Also, the effective use of information in EMFs and SEAs requires interpretation skills (i.e.,

'integrated environmental management thinking' as phrased by one of the interviewees) and conveying this in conducting EIAs and in decision-making. The research found that the EIA case studies did not convey a strong reliance on the strategic environmental context in discussing sustainability, and the interviews corroborated this as being the same in general EIA practices. Although EAPs and decision-makers, in theory, regarded the strategic context as important, little value was attached to the strategic EA context in practice in reflecting on sustainability (or at least it is not reflected as important in the written reasons and reasoning). None of the case study decisions included reasoning for achieving sustainable development outcomes as a primary focus of decision-making. Also, the research results showed low levels of awareness in the environmental sector of the value decision-makers in other sectors attached to EMFs and SEAs – there is a clear lack of SEA and EMF follow-up.

The research found little evidence that the public and stakeholders in other sectors were aware of the strategic contexts provided by EMFs and SEAs, or if they were aware thereof, they attached little value to it in addressing issues of strategic importance during EIA processes. In this regard, vertical tiering in EA failed as strategic tiers of EA information did not inform the subsequent lower EA tier. The research showed that the knowledge brokerage potential of the EA tiering was lost due to the lack of meaningful engagement with the strategic contexts in presenting motivations for sustainable development outcomes at the EIA level. The value that tiering in EA could play in empowering stakeholders on the value of the strategic context in addressing issues of strategic importance and its impact on their environmental rights was lost.

Based on the above, the research results reflect a low level of maturity (i.e. awareness and implementation) in the environmental sector towards EA tiering.

10.3.6 Intermediate outcome component

As an intermediate outcome of effective tiering in EA, the ToC narrative in Chapter 4 envisages a greater awareness for integrated, aligned, evidence-based decision-making between spheres and sectors based on tiered EA information. The tiering in EA is valued, and, therefore, more institutional resources are allocated towards tiering, especially strategic-level EAs.

The research found specific examples of institutionalised collaboration between the environmental sector and other sectors, rather than such cooperation being mainstreamed and formalised in institutional relationships. In the environmental sector, due to the voluntary status of strategic-level EAs, such collaboration at the strategic assessment and planning level was driven by the political will to do so rather than being mainstreamed or institutionalised (i.e.

captured in legislation, policies, procedures, formalise agreements and organisational cultures). Integrated planning, which is the collaboration between land use planning authorities and environmental authorities involved in strategic planning, is a legislative requirement in land use planning legislation but not in environmental legislation.[428] As such, horizontal tiering is primarily driven by the legal requirement that planning outputs of other sectors must be incorporated into SDFs.

The research did not find any examples of collaboration between sector authorities to integrate regulatory decision-making between sectors (i.e., integration of regulatory processes to integrate or align decision-making). While efforts to streamline regulatory procedures were evident in the environmental sector, no recent, similar examples were found in other sectors. In particular, although both the NEMA and the SPLUMA include enabling provisions for such integration, no efforts to align or integrate regulatory decision-making procedures in the land use and environmental sectors could be found. Cooperation between sectors was primarily focused on integrating or aligning strategic planning efforts. Again, such cooperation is particularly evident in the efforts to align land use planning with environmental planning and strategic-level EAs (i.e. alignment between SDFs and SEAs/EMFs). This cooperation constitutes horizontal tiering and is primarily driven by the tiering requirements in the land use planning legislation, not the environmental legislation. In addition, the research also found that land use planning (i.e. SDFs) does not adequately deal with strategic environmental issues such as strategic alternatives, cumulative impacts, opportunity costs, trade-offs, and sustainability. Therefore, the relationship between EMFs and SDFs is not one of substitution (where SDFs could replace the need for EMFs) but complementarity (where both exist but should inform one another).

The research shows that the environmental sector's value attached to EA tiering is primarily theoretical, as the (poor) EIA practice reflects low dependence on information flowing from tiered EAs. This lack of prioritisation of EA tiering is also reflected in the allocation of institutional resources toward EA tiering. While human and financial resources are more readily allocated towards functional-specific environmental planning in the individual functional areas such as biodiversity, coastal management, climate change, and waste management, little resources flow towards strategic-level EA to integrate all functional-specific environmental planning inputs in a manner that considers all components of the environment (i.e., social, economic and biophysical). The government's budget allocations to EA primarily focus on EIAs, not strategic-level EAs.

[428] Although the EMF Regulations (South Africa, 2010) state that the purpose of EMFs is to facilitate cooperation between authorities, it does not contain any provision that requires the consideration of other sector planning initiatives.

The research also showed an ongoing drive to develop regulatory instruments as alternatives to EIAs, increasingly creating separate assessment processes for different sectors as outputs flowing from strategic-level assessments. This trend is related to the long-standing challenge that the EIA system is not responding to the calls for efficiency (or reducing the regulatory burdens) flowing from socio-economic and political pressures. However, there are polarised views on the impact of this increased focus on alternative regulatory mechanisms on the efficiency and effectiveness of EA and environmental management in general. The low level of awareness of (the role of) tiering in EA in South Africa means that the value thereof in informing debates on the efficiency and effectiveness of EA, as well as the need for and focus areas of policy and law reform, is lost.

10.3.7 Impact component

The expected impact of effective tiering in EA, presented in Chapter 4 ToC narrative, is to contribute toward achieving sustainability goals and that EIA is considered a valuable instrument to achieve environmental rights within a tiered EA system.

The research confirmed that the contribution of EA tiering to sustainability is viewed from an efficiency (time and cost) and effectiveness (sustainability) perspective. The efficiency value of SEAs and EMFs is acknowledged, meaning that it should inform the identification of alternatives, inform the scoping of issues, and reduce information requirements at the EIA level. However, in practice, the information contained in EMFs and SEAs and the interpretation thereof were not seen as valuable in achieving efficiency gains for EIA processes, or if it was regarded as important, it was not reflected in the EIA process and decision-making. Regarding effectiveness, the research found that EMFs and SEA provide relevant information that should be used to evaluate the sustainability outcomes of projects, but that the quality of EMFs and SEAs in this regard must be improved. In practice, EMFs and SEAs were not seen as adequate in providing a strategic context to EIAs to inform effectiveness outcomes (i.e., sustainability). Other strategic informants, in particular SDFs and functional-specific environmental planning documents, were more readily but uncritically used to represent a strategic context for EIAs. Using these informants in reasoning on sustainability is weak in EIAs but particularly poor or absent in the decisions. Therefore, vertical tiering in EA is weak and poorly implemented, while diagonal tiering is more readily but uncritically used to inform EIA processes.

The research found that the pressure of regulatory efficiency and short-term needs were often raised as a concern in undermining the effective use of EIAs to achieve sustainability outcomes.

The pressure of "*having to promote development*" and the short regulatory timeframes "*not allowing for requesting and considering substantive information*" results in the primary focus of EIA processes being on procedural compliance. Therefore, the knowledge brokerage value of tiering (in providing this strategic context for sustainability) for regulatory decision-making is lost as the strategic environmental context is not used in the reasoning towards sustainable development outcomes. The research found a clear expectation that EMFs and SEAs should be used, but it could be improved, including incentivising better future options (i.e. sustainability), highlighting long-term opportunity costs, and how socio-ecological vulnerabilities and risks could be better managed.

The research confirmed that EA stakeholders regarded sustainability to be context-specific and that EIA would remain the most important EA instrument to achieve project-specific sustainability outcomes. Although it was generally accepted that EIA cannot operate as a stand-alone instrument without being informed by a strategic environmental context, EIA practices contradict this view, and the research showed that the strategic environmental contexts (presented by EMFs and SEAs) were poorly used to inform the reasoning for sustainability during EIA processes. The research showed that these poor EIA practices are exacerbated by the tension between regulatory efficiency and substantive effectiveness (i.e., sustainability). There is also an optimistic view that while the drive for regulatory efficiency was regarded as a constraint that hampers the substantive effectiveness of EIAs, it was also seen as an opportunity to demonstrate the value of tiering to improve both the efficiency and effectiveness of EIAs (and environmental assessment in general).

10.3.8 Accountability ceiling component

From a ToC perspective, the research also illustrated the presence of an accountability ceiling in tiering in EA in South Africa (see Figure 9-1). The goal of sustainability lies beyond the accountability ceiling of EIAs, meaning that sustainability is not only dependent on the successful implementation of EIAs. EIAs only deal with new proposed developments, whereas strategic-level assessments and environmental planning must deal with impacts of existing development and resource uses, as well as future developments. These impacts include strategic-level issues such as cumulative impacts, sustainability, opportunity costs, strategic alternatives (future options) and trade-offs. For EA, in general, this emphasises the importance of tiering in EA as a prerequisite for the successful implementation of EIAs. The accountability ceiling for EIAs lies between immediate and intermediate outcomes (Figure 9-1), meaning that EIAs, and the stakeholders involved in it, are accountable for the following:

- Decision-making being sustainability-led, evidence-based and increasingly informed by tiered assessments/environmental planning frameworks.
- Increasingly regard EIA processes as important in achieving sustainable development outcomes.
- Regarding the EIA process to be relevant and credible in delivering sustainable outcomes, when supported by and if consistent with tiered assessments/planning frameworks (i.e. the strategic context.
- Being aware of and supporting (the value of) tiering in impact management through strategic EA and/or environmental planning frameworks.

However, the following lies beyond the accountability ceiling of EIAs:

- Tiered EA and environmental planning frameworks guide evidence-based, sustainability-led decision-making in all spheres of government.
- The approach to tiering in EA/ environmental planning improves coherence in regulatory decision-making and cooperative governance between different sectors.
- Increased stakeholder capacity and empowerment through outcomes-based, sustainability-led tiered EAs and environmental planning frameworks.
- Continuous improvement in tiering in the EA and environmental planning is achieved through effective monitoring and evaluation at different tiers.

Also, the research shows that sustainability as an ultimate impact (goal) lies beyond the accountability ceiling of EMFs and SEAs, and EA in general (Figure 9-1). Many challenges related to the existing unsustainable use of resources (e.g., ranging from poor farming practices or the poor maintenance of pollution control mechanisms in industries to strategic decisions on operational priorities) lie beyond the influence sphere of EAs. Similarly, the poor policy choices at a political level that are not (required to be) informed by an EA fall outside the scope of strategic-level EAs. Therefore, whilst acknowledging the important contribution that EA tiering can make towards sustainability, achieving sustainability at the country level falls beyond the accountability ceiling of EAs. Put differently, not achieving sustainability goals at the country level cannot be seen as a failure of EA and EA tiering *per se* - i.e., EA is a necessary but insufficient condition for achieving sustainability.

The presence of accountability ceilings in EA tiering can contribute in the following ways:

- It clarifies the roles and responsibilities of stakeholders in EA (accountability) and what lies beyond their sphere of influence, meaning that they can contribute to certain outcomes but are not solely accountable for achieving such outcomes.

- It can create awareness about the role of EIAs, EMFs and SEAs, their contributions, and the limits of their influence sphere. This can be used to respond to some of the (unfair) criticisms leveraged against these instruments.

10.3.9 Reflection on issues emerging from the research

This section discusses some of the additional observations that emerged from the research. Although these issues were not researched in detail, they present issues that emerged from the research results as influencing factors that significantly affect tiering in EA. However, more research is required to clarify the nature and extent thereof.

10.3.9.1 Regulatory compliance versus substantive performance

This research confirmed that EAPs (practitioners conducting EAs and officials reviewing EAs) have become caught up in compliance with regulatory requirements rather than achieving substantive outcomes. One of the interviewees captured this challenge by referring to the EIA process *"…becoming a tick box exercise…..and we* [EAPs] *have lost our integrated environmental management thinking in critically reviewing sustainability outcomes*". The findings indicated, for example, that more value is placed on impact mitigation measures being included in the EIA, than on critically evaluating the adequacy of these mitigation measures against achieving sustainability outcomes. This suggests that EA has adopted a culture that values and measures outputs (e.g., the presence of mitigation measures) rather than outcomes (e.g., the effectiveness of mitigation measures in achieving sustainability outcomes).

10.3.9.2 Developing regulatory instruments as outputs of SEAs and EMFs.

This research also reflected the emerging trend in EA in South Africa to develop regulatory instruments as an output flowing from SEAs or EMFs. In most instances, these regulatory instruments revise or replace the existing prescribed regulatory EIA process. This trend is consistent with the global drive to rationalise and streamline EA legislation (Section 2.2). This research reflected that, in most instances, these instruments flow from SEAs. However, recently, EMFs have also been used in this way, and in a few instances, no strategic-level assessment

preceded the development of a regulatory instrument.[429] Most of these regulatory instruments focus on specific sectors, primarily related to infrastructural development. While EA tiering has benefitted certain sectors, such as renewable energy, this also results in a disparity between sectors (e.g., the activity of clearing 3 hectares of indigenous vegetation requires an EIA to be conducted and environmental authorisation be obtained, whereas another sector is excluded from conducting and EIA and does not have to obtain environmental authorisation for the same activity). Instances where tiering in EA was introduced, were driven by political will rather than being derived from legislation or policy mandates. Therefore, while the development of regulatory instruments benefits certain sectors, it also creates an uneven playing field between sectors (i.e., similar impacts are treated differently, and the requirement for EIAs to be conducted is excluded in one sector but not others). The unintended consequence is that this may exacerbate the perception that "EIA is not working" and that additional interventions (such as alternative regulatory instruments) are required. However, the findings also point to the importance of an effective EA tiering system:

- Effective tiering can provide information against which the motivation for law reform can be measured (i.e., evidence-based law reform) and prevent an imbalance between efficiency and effectiveness.
- Effective tiering must result in efficiency gains by reducing the need for alternatives, assisting with scoping issues, identifying development opportunities, and reducing information requirements. Law reform should not focus on achieving efficiency gains that could be achieved through effective tiering in EA and implementing sound EA practices.
- Effective tiering must have substantive value in protecting natural resources and sensitive environmental attributes, assist with cumulative impacts, opportunity costs and trade-offs, and set a strategic context for sustainability. Law reform and the implementation of regulatory procedures should not erode the important substantive value of effective EA tiering.
- Tiering in EA must provide information that empowers all stakeholders to participate in policy and law reform, strategic planning (i.e., SEA, EMF and SDF processes), and EIA processes that will influence their environmental rights.

[429] See Chapter 4 for a detailed discussion on developing these regulatory instruments.

10.3.9.3 Power dynamics

The presence of power dynamics was directly or indirectly referred to in all the case studies interviews, corroborated by general interviews, as a factor that influenced the outcome of tiering in EA. Power dynamics were present across all ToC components.

Examples of power dynamics include the following: In Chapter 6, the decision to conduct the SEA for renewable energy was influenced by political pressure to reduce regulatory burdens on infrastructural development (i.e., the ToC design component). The existence of the REDZ also created pressure on officials to review the application submitted in a manner that will support the approval thereof (i.e., the ToC activity component). In Chapter 7, the pressure was created by the applicant to maximise the development of a site for human settlement by conducting their own planning document separate from the EIA process (i.e., ToC Input component). This pressure influenced the application of the mitigation hierarchy (i.e., ToC activity component), resulting in impacts associated with developing the majority of the site being considered unavoidable and requiring offsetting. In other words, power dynamics influenced the identification of alternatives, trade-offs, and perceptions on what constituted sustainability (ToC outcome/impact component). Both case studies highlight the complex nature of 'sustainability' that leaves room for powerful role-players to influence the outcome of the EIA process.

This study's results illustrated the omnipresence of power dynamics as an inherent part of EAs at all tiers. This finding is consistent with international experiences (Section 2.8). This research also highlights the importance of EA tiering in providing information to empower stakeholders to participate at all tiers of EA, as well as the contribution of tiering in creating a diversity of stakeholder relations and interactions that avoid the challenge of specific stakeholders exercising undue influence on EA processes, especially at the EIA level.

10.3.9.4 Bounded rationality (ToC Input/Activity Component)

While the role of rationality in EA is an ongoing debate, this study indicates that tiering provides opportunities for stakeholders to become involved at both strategic- and project-level EA by providing value-based opinions or scientific/technical inputs. Tiering also provides opportunities to enhance awareness of the effect of different rationalities in decision-making at various levels.

This research highlighted that time, financial and human resource constraints diminished the ability of EAPs to conduct EIAs and officials to review EIAs, resulting in limitations to the amount of information that could be considered, limited time to gather and consider additional information,

and even how information was considered. Therefore, the ability to make rational decisions – i.e., evidence-based decisions that consider all relevant information to achieve specified outcomes during the EIA process – was hampered.

A result that emerged from the research was that the efficiency and effectiveness of EAs at all tiers were influenced by the limitations of key role-players' knowledge and experience. For example, in all three case studies, officials within the environmental authorities conveyed limited awareness of vertical, horizontal, and diagonal tiering in the decision issued. The strategic contexts in the land use planning sector were accepted without critically reflecting on the application thereof within the EIA context. Functional-specific environmental planning (in silos) through the creation of these different functional-specific plans and strategies does not constitute an integrated, strategic-level EA that considers all components of the environment. However, the case studies revealed that these functional-specific environmental planning inputs, especially biodiversity planning outputs, are used without critically reflecting on the application thereof as adequate representations of the strategic environmental context. In this regard, the statement made by one of the interviewees is worth repeating: "..*we* [EAPS] *have lost our ability to apply integrated environmental management thinking*".

Other aspects that were illuminated by the case studies that influenced the flow of information and how it was interpreted included:

- The complexity of sustainability and the socio-economic and socio-ecological systems within which EAs operate. Different interpretations of what constituted sustainability were conveyed by case studies and interviewees.
- The lack of awareness of stakeholders of the strategic context (i.e., the EMF and SEA information) meant that the knowledge brokerage role of these informants was lost and impacted the ability of these stakeholders to participate effectively in EIA processes.
- Power dynamics influence the flow of information, what information is regarded as relevant, the identification of alternatives and the application of the impact mitigation hierarchy.
- Contextual informants, such as political and policy priorities.

The above highlights the challenge of EAPs (conducting and reviewing EIAs) in objectively considering all information relevant to decision-making at various stages of the EIA process. This challenge is related to the notion of 'bounded rationality,' which describes a relationship between EAPs' mental (or cognitive) abilities and the complexity of the problems they face during EA processes. Simply put, EAPs are often required to make decisions based on limited (imperfect) information and have cognitive and other limitations in considering complex information within time constraints.

However, the above emphasises the importance and value of tiering in EA, where it assists in creating tiers of information that interpret and cascade relevant information down to EIA as the last tier of assessment. Put differently, tiered EAs create a strategic context for EIAs to assist in identifying information relevant at the EIA level.

10.4 Research Objective 4: To make recommendations towards improving tiering within the South African environmental assessment system.

Based on all the preceding chapters (especially Chapter 9 and Sections 10.1 – 10.3), this section makes recommendations for improving tiering within the South African environmental assessment system. All the recommendations in the section below build on the overarching recommendation that the EA system in South Africa should be reviewed and amended, including the institutionalisation of such a system. A summary of the recommendations is provided in Table 10-1.

This research showed that vertical tiering in EA in South Africa does not function effectively. Strategic-level EA was found to be a weakness in the EA system in South Africa that should be strengthened. The strategic-level EA tier, represented by EMFs and SEAs, is voluntary, meaning there is no legal requirement to conduct EMFs and SEAs. The voluntary status thereof has resulted in its inconsistent use. In turn, this voluntary status of SEAs and EMFs has led to a neglect in the use and application thereof at the EIA level, to the point where vertical tiering in EA is either absent or poorly implemented – these poor practices have become institutionalised (or embedded) with a primary focus on procedural compliance rather than substantive effectiveness. To improve the effectiveness of vertical tiering, the status of the strategic-level EA tier should change to become mandatory (i.e., a legal requirement). Without this step, no meaningful change is expected in improving the use and performance of strategic-level EA instruments and, ultimately, the efficiency and effectiveness of EIAs due to the institutionalised nature of EA vertical tiering neglect. More specifically, the following is recommended for law reform in South Africa:

- Provincial- and municipal-level EMFs should be considered mandatory requirements to be implemented as a provincial mandate.
- SEAs should be considered a mandatory requirement for all policies, plans and programmes. This change in the status of SEAs means that the relevant sector authorities will be required to conduct SEAs to inform the development of PPP.

More attention should be given to the institutionalisation of strategic-level EA in South Africa by clarifying the purpose thereof, the policy and legislation context, roles and responsibilities,

institutional structures required, financial and human resource requirements, and the expertise and skills needed to support the implementation thereof. However, preceding the institutionalisation of strategic-level EA, it is recommended that environmental sector deliberations take place on the governance context within which EA tiering operates (i.e., having an anthropocentric focus on sustainability, being developmentally focused and prioritising regulatory efficiency). The institutionalisation of EA tiering should be discussed within this governance context to ensure that EA tiering (i.e., EIA, EMFs and SEAs) can fulfil its intended role and purpose. However, a whole-of-society approach should be adopted to such deliberations. DFFE should establish a national, consultative, multi-sector forum to ensure that the interests of different sectors and stakeholders are considered in institutionalising a future EA system and EA tiering. This discursive approach to institutionalisation is aimed at both influencing the governance context (i.e., influencing values, institutional perspectives and culture) related to tiering and that the institutionalisation of EA systems and EA tiering serve their intended purposes.

Changing its voluntary status will inevitably result in more EMFs and SEAs being conducted. However, it is acknowledged that there are institutional resource limitations in all government sectors, particularly financial constraints, and it is not anticipated that current austerity measures will be lifted. Austerity measures are an important contextual factor that will remain over the medium- to long-term, and additional resources required (or inputs needed) to conduct strategic-level EAs will have to be absorbed within the existing institutional capacity of the relevant authorities. Insofar as EMFs are concerned, the resources needed to conduct EMFs will have to be absorbed within the existing institutional capacity of environmental authorities at provincial and national levels of government. Due to austerity measures, it is not anticipated that additional financial resources will be readily available in the future for the appointment of consultants to conduct strategic-level EAs. Therefore, reallocating existing, internal financial, human and time resources should be considered, away from regulatory and functional-specific environmental planning functions (in the various functional areas of biodiversity, coastal management, climate change, waste management, and air quality) toward strategic-level EA. Insofar as functional-specific environmental planning is concerned, this should be considered an extension of their existing function (i.e., follow-up to ensure that functional-specific environmental planning outputs are incorporated into EMFs and SEAs) rather than a new or additional function. Insofar as the regulatory functions are concerned, the re-allocation of time resources away from regulatory functions (i.e., apportioning time of officials toward conducting EMFs and SEAs) should be seen as an investment in ensuring that the EMFs and SEAs are meaningful in guiding EIAs and EIA decision-making in becoming more efficient and effective. Apportioning some of the time of officials responsible for environmental planning and regulatory functions toward participating in

strategic-level EA could achieve the additional benefit of raising awareness and building the capacity of these officials related to integrated environmental management thinking.

In this research, the EAPs conducting EIAs and those reviewing EIAs indicated that the strict timeframes of the EIA process limited their ability to consider and apply their minds to the contextual information beyond the site-specific information of the EIA. However, the research also showed a lack of willingness (and acknowledgement of the responsibility) of these EAPs to apply their minds to the applicability of the strategic context to EIA processes. Resources should also be invested in improving IEM skills of EAPs to enable them to conduct strategic-level EAs and to apply IEM thinking to EIA processes and decision-making (e.g., the improved application of 'need and desirability'). IEM thinking skills are required:

- To apply the strategic contextual information from tiered EAs to project-level EIAs, including how the strategic context is used to apply the impact mitigation hierarchy and 'need and desirability'.
- To provide the reasoning for sustainability outcomes of EIA processes based on the strategic context. Reasoning on sustainability should fundamentally question the sustainability of project proposals beyond applying the impact mitigation hierarchy, including opportunity costs, trade-offs and cumulative impacts.
- Training on fair and just administration should be included as an integral part of IEM skills development.

Over and above law reform to change the status of EMFs and SEAs, it is recommended that attention should also be given to establishing tiered PPPs for the environmental sector. While several policies and strategies have been developed for specific functional areas (e.g., biodiversity, climate change, and waste management), no current, integrated policy context is available for environmental management in general. The Environmental Management Policy, 1998, and the National Strategy for Sustainable Development and Action Plan, 2011, are outdated by more than 15 years, especially when considering the subsequent changes in the international environmental policy context (United Nations, 2025 and 2016), and the prominence of global environmental risks (WEF, 2023). There is no current (up-to-date) general environmental policy to provide guidance on sustainability for South Africa, and a new sustainable development strategy should be developed for South Africa. Regarding tiering in EA, the Environmental Impact Assessment and Management Strategy for South Africa (2014) should be updated. The status thereof as a policy informant is unclear, as no follow-up has been done on its implementation. Therefore, it is recommended that the long-term sustainability strategy/policy be updated with a strong focus on sustainability, including identifying country-specific sustainability objectives. Sustainability objectives will be essential in changing the decision-making values dominated by a

developmental focus and regulatory efficiency – i.e., sustainability objectives are required to create balance in the value attached to efficiency and effectiveness in decision-making. The implementation of the EIAMS should be reviewed (i.e., implementing follow-up) and updated. The EIAMS should give clear guidance on tiering in EA.

There is a need for EA practices to move away from a culture that values and measures outputs, rather than outcomes. This is a transition away from being compliance-driven to becoming outcome-led. Being compliance-led refers to the inclusion of information outputs as part of an EIA, such as information on public participation that was conducted or the identified mitigation measures. Being outcome-based critically evaluates the adequacy of public participation and mitigation measures in achieving sustainability outcomes. Therefore, identifying country-level sustainability objectives and cascading them to local (municipal) levels is needed to measure the performance of EIAs against these objectives. The cascading of sustainability objectives should be done using EMFs and SEAs. Also, more attention should be given to improving EIA practices to ensure that EIAs and regulatory decision-making provide reasons and reasoning for achieving outcomes (i.e., sustainability objectives. Therefore, EA tiering is essential in changing EA practices to transition away from valuing and measuring outputs, to valuing and measuring outcomes.

Strategic-level EA follow-up should be improved by including enabling provisions in legislation. Such provisions will ensure greater awareness of tiering in EA and the importance of EMFs and SEAs as contextual informants, continuous improvement of the effective implementation of EMFs and SEAs, and improved accountability for the effective implementation of EA at all tiers.

The nature of law and policy reform related to EA should be evidence-based and address both efficiency and effectiveness. It is recommended that a ToC approach be used to identify problem areas and solutions related to EA tiering – i.e., the causal relationship between ToC components and the identification and testing of assumptions should focus policy and law reform on the root causes. It is also recommended that the continued role of regulatory instruments should be based on a clear understanding of the need for such instruments and the root causes of the problem(s) they attempt to address.

Following on from the above recommendation that the EIAMS bust be reviewed, it is also recommended that a multi-sectoral forum be established to consider and advise on the future of EA in South Africa and the institutionalisation thereof. There is a wealth of experience in South Africa, and such a forum, consisting of government and private sector representatives, can contribute to the review of the EIAMS and act as an advisory forum on the implementation of a future EA system.

	Recommendation	ToC component
1	Establish a multi-sector advisory forum to discuss the governance context for EA tiering and advise the national government (DFFE) on the institutionalisation of EA and EA tiering. This step will create awareness of the governance context (i.e., values, culture, relationships and power dynamics) and contribute to policy and law reform related to the EA system and EA tiering that can achieve its intended purpose - i.e., being fit for purpose.	Design component
2	Law reform: Provincial- and municipal-level EMFs should become mandatory as a provincial mandate.	Design component
3	Law reform: SEAs should become mandatory for all policies, plans and programmes. Therefore, relevant sector authorities should conduct SEAs to inform the development of PPP.	Design Component
4	Policy follow-up: The long-term planning policy context should be updated with a strong focus on sustainability, including sustainability objectives.	Design Component
5	Policy follow-up and reform: The implementation of the EIAMS should be reviewed (i.e. follow-up implemented) and updated. Specific attention should be given to including guidance in the EIAMS on tiering in EA. Apply a ToC approach to identify problem areas and interventions for policy and law reform related to all tiers of EA, including the role of the current trend of developing regulatory instruments as alternatives to the EIAs.	Design component
6	Strategic-level EA follow-up should be improved by including enabling provisions in legislation.	Design and outcome components
7	Identify country-level sustainability objectives and the cascading thereof to local (municipal) levels. The cascading of sustainability objectives should be done using EMFs and SEAs and are needed to measure the performance of EIAs against these objectives. Also, more attention should be given to improving EIA practices to ensure that EIAs and regulatory decision-making provide reasons and reasoning for achieving outcomes (i.e., sustainability objectives. Therefore, EA tiering is essential in changing EA practices to transition away from valuing and measuring outputs to valuing and measuring outcomes.	Design, output and outcome components
8	The reallocation of human and/or time resources away from regulatory functions and functional-specific environmental planning (in the various functional areas of biodiversity, coastal management, climate change, waste management, and air quality) toward strategic-level EA.	Input component

9	Follow-up should be implemented for all SEAs and EMFs to determine their effective implementation, to improve awareness about the importance of these strategic contextual informants, and to improve accountability during implementation.	Activity component
10	Resources should also be invested in improving IEM skills within environmental authorities to enable them to conduct strategic-level EAs and to apply IEM thinking to EIA processes and decision-making	Input and activity components
11	The establishment of a multi-sector advisory forum to contribute to the review of the EIAMS and the institutionalisation thereof	Design component

Table 10-1: Summary of recommendations

Although this study focused specifically on EA tiering in South Africa, the findings are also relevant to an international audience, especially considering the limited research into the practice of EA tiering (see Chapter 2). Internationally, more attention should be given to knowledge brokering within the EA sector and with external stakeholders. The research also showed that the application of a ToC framework could be a useful approach to communicate and share information that describes EA processes and tiering in a logical and systematic - i.e., unpacking the causal relationship between different ToC components, its underpinning assumptions and the presence of accountability ceilings in achieving sustainability as a long-term objective. In particular, the presence of accountability ceilings could be used to reflect on the relationship between EA and sustainability - the latter being a collective whole-of-society obligation beyond the sole responsibility of the environmental sector.

Also relevant to international EA practices, this research shows the importance of understanding the causal relationship between the design/contextual component of EA systems and its subsequent components – inputs, activities, outputs, outcomes and impacts. This research showed that when analysing EA efficiency and effectiveness (or debating poor EA practices, and why EAs do not achieve sustainability outcomes) it is difficult to identify root causes without understanding the causal relationship between different ToC components of an EA system and its underpinning assumptions.

10.5 Reflection on tiering in EA practice in South Africa

This research shows that EA tiering in South Africa is not supported by a clear legislative framework, especially compared to the land use planning sector[430] and to international best practice examples (CEQ, 2020; European Union, 2001). In South Africa, the strategic-level EA tier, represented by SEAs and EMFs, was shown in this research to be the weak link from a legislative perspective due to its voluntary status – the use of SEAs and EMFs is discretionary. The voluntary status of SEAs and EMFs undermines their implementation and the value that could be derived from tiering in EA. These findings are also consistent with international experiences reported by Thérivel & González (2021) and Bond *et al*. (2022), who found that legislation is an important contextual factor that influences the effectiveness of EA.

In the South African context, this research affirms that SEAs and EMFs constitute an environmental planning approach focused more on the opportunity and constraint mapping than assessing impacts – i.e., it focuses strongly on 'avoidance' as the first step of the impact mitigation hierarchy. This 'planning' approach followed for SEAs in South Africa has also been reported by Rossouw *et al*. (2000), Retief *et al*. (2008), Fischer *et al*. (2019), and Retief *et al*. (2021), and internationally by Bina (2003), Fischer (2006), Bina (2008), Silva *et al*. (2014), Noble and Nwanekezie (2017), and Kusters *et al.* (2024).

Elements of institutionalisation (Monteiro *et al*., 2018) that were revealed by this research to be inadequate in South Africa, including the regulatory and policy frameworks, organisational structures and resources (such as funds, time, and human capacity). In particular, the lack of institutionalisation of strategic-level EA significantly contributed to the weak performance of EA tiering. Considering the stringent austerity measures being implemented in the government sector (Amra *et al.,* 2025), the availability of adequate resources to maintain the already limited existing level of investment in SEAs and EMFs is unlikely to be sustained. Therefore, due to a lack of financial resources, the continued use of EMFs in the future is at risk, even though it is regarded as an important EA instrument. South Africa's economic outlook is potentially affecting tiering in EA, which is consistent with international experiences discussed by Bond *et al. (*2022), who reported on the effectiveness of EAs being influenced by contextual factors such as political and social environment, socio-economic conditions, institutional capacity and legislation.

Researching the current EA system in South Africa, this study shows that the institutional focus is primarily on EIA as the final EA tier, combined with a specific drive toward regulatory efficiency. This focus is consistent with the international drive for regulatory efficiency in environmental

[430] Tiering as provided for in land use planning contained in the planning legislation (South Africa, 2013).

assessment (Alberts *et al*., 2023; Fischer, 2022; Fischer, 2023; Fischer *et al*., 2023; Fonseca, 2023; González & Sobrini, 2023; Kørnøv & Lyhne, 2023). This research also reflected on the concern that the focus on regulatory efficiency may erode the substantive effectiveness of EAs, consistent with similar concerns raised internationally (Bond *et al.*, 2014; Fischer *et al*., 2023; Alberts *et al*., 2024). The research also found that the legislative framework for project-level EAs is changing in response to the demand for regulatory efficiency in South Africa (Alberts *et al*., 2023), with an increasing trend in using EMFs and SEAs to develop regulatory instruments to replace or support the existing legislated EIA process. The current trend of using SEAs to develop regulatory instruments is primarily focused on infrastructural development in specific sectors, as reported by Fischer *et al*. (2019), Retief *et al*. (2021), and Alberts *et al*. (2023). However, as this study's findings show, while creating tiering arrangements at the programme level in specific sectors is successful, this creates uneven playing fields between sectors rather than addressing the root causes of the efficiency and effectiveness challenges in EA across all sectors and tiers. It can be anticipated that law reform in the government's drive for regulatory efficiency will continue (Minister: FFE, 2024). In this regard, tiering in EA can make a valuable contribution by providing strategic contextual information that could inform both efficiency and effectiveness considerations of such law reform initiatives. As the findings also indicate, using a ToC approach will assist in focusing on the root causes that should be addressed by law reform – i.e., tiering can support evidence-based law reform.

A theme that emerged from this research is just and fair administrative action, regarding which the findings reveal that EIA decisions as EA outputs contain inadequate reasoning related to the strategic environmental context. The regulatory requirement that 'need and desirability' should be addressed in EIA processes (in conducting EIAs and in decision-making) was found to be a clear example of this inadequacy, and is not consistent with the principles of just and fair administrative action[431] as discussed by Retief *et al*. (2019), Alberts *et al*. (2021), and Alberts *et al*. (2022). The research results regarding the poor implementation of need and desirability corroborated the findings of the South Africa EIA (system) Review Study conducted in 2019.[432]

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[431] Lezmin 2588 CC v The Provincial Minister for Local Government, Environmental Affairs & Development Planning, Western Cape & the City of Cape Town (21935/2009), Judgement delivered on 18 October 2010. In the judgment, the following is also quoted another judgment to highlight that decision-makers should explain decisions "…..*in a way which will enable a person aggrieved to say, in effect. "even though I may not agree with it, I now understand why the decision went against me. I am now in a position to decide whether that decision has involved an unwarranted finding of fact, or an error of law, which is worth challenging. This requires that the decision-maker should set out his understanding of the relevant law, any findings of fact on which his conclusions depend (especially if those facts have been in dispute), and the reasoning processes which led him to those conclusions. He should do so in clear and unambiguous language, to in vague generalities or the formal language of legislation*……" (Judge Blignault, 2010).

[432] The EIA Review Study (DPME/DEA, 2019) conducted to evaluate the EIA system in South Africa found 'need and desirability" to be a weakness in EIA practices.

Diagonal tiering, as described by Partidário & Arts (2005) and Arts *et al*. (2005), has emerged as a key characteristic of how EA tiering is implemented in South Africa. The research showed the presence of strong horizontal tiering between EMFs/SEAs and SDFs, based on the clear land use planning legislation requirements that SDFs must consider and incorporate strategic planning information of other sectors. The research also showed that SEAs and EMFs are poorly considered when conducting and reviewing EIAs, whereas SDFs were readily considered. Therefore, the possible role that vertical tiering in EAs could have played in improving the effectiveness of EIA processes (to achieve sustainable outcomes) is weak – which is in line with Arts *et al*. (2011), Thérivel & González, (2021), and Arts & Fischer, (forthcoming). However, through horizontal tiering between the land use and environmental sectors, the strategic environmental context (presented in EMFs) indirectly influences EIAs through diagonal tiering between the SDFs and EIAs. Therefore, although vertical tiering in EA failed, diagonal tiering played a valuable role by influencing how cumulative impacts, the impact mitigation hierarchy, trade-offs and alternatives are addressed in EIAs.

10.6 Reflection and contribution to international literature

This research critically reviewed tiering in EA in South Africa based on in-depth, longitudinal case studies – which type of case study is often called for in literature but is only limitedly being conducted. In this research, the concept of Theory of Change (ToC) – a well-known and widely applied concept in evaluation literature and practice, but only with limited use in the EIA field (Alberts *et al*., 2019)– was employed to establish a rigorous, logical framework for EA tiering. In this research, the ToC methodology proved to work well in identifying and testing the assumptions that underlie the causal relationship between the ToC components for tiering in EA (i.e., design, input, activity, output, outcome, and impact components). Moreover, the analysis indicates that the logical framework for how EA tiering functions in South Africa is consistent with international practices (Arts *et al*., 2011; Kalle & Arts, 2013; Thérivel & González, 2021; Gonzáles and Therivel, 2022; Arts & Fischer, forthcoming). A strength of using ToC proved to be unpacking the assumptions that underlie the causal relationship between the various ToC components, thereby elaborating on issues (problems, challenges and potential solutions) of tiering discussed in, for instance, Arts *et al*. (2011), Fischer (2005), Thérivel and González (2021), and Gonzáles and Therivel, (2022). The ToC framework, developed to study tiering in EA, holds value for comparing EA tiering practices across different countries (see Section 10.7). This research also provides a valuable learning experience for other countries in transition with similar socio-economic and socio-ecological challenges faced by developing economies.

This research shows the role of tiering in EA to include the following:

- To provide information that is relevant to and can improve the efficiency of regulatory decision-making at the EIA level within a strategic EA context. This role is not only related to the development of PPPs (or, in the case of South Africa, revised regulatory procedures as alternatives to EIAs) but also to the information contained in these strategic-level EAs that should inform the scope of EIAs, the identification of alternatives and reducing the information needs of EIAs. Effective implementation of tiering in EA can address some of the very efficiency and effectiveness concerns that are often the subject of law reform to improve regulatory efficiency (Alberts *et al*., 2023; Fischer, 2022; Fischer, 2023; Fischer *et al*., 2023; Fonseca, 2023; González & Sobrini, 2023; Kørnøv & Lyhne, 2023).
- To provide information that informs the substantive outcomes of EIA processes, including opportunity costs, implications of trade-offs, opportunity costs, and achieving sustainability outcomes. The sustainability outcome of a project proposal should be measured against the strategic context provided by strategic-level EAs (Arts *et al.*, 2011; Partidário, 2012; Thérivel & González, 2021; Bond *et al.*, 2022; Arts & Fischer, forthcoming).

When considering the international drive for rationalisation (or streamlining) of regulatory frameworks governing EA (Alberts *et al*., 2023; Fischer, 2022; Fischer, 2023; Fischer *et al*., 2023; Fonseca, 2023; González & Sobrini, 2023; Kørnøv & Lyhne, 2023; Noble, 2023; Alberts, *et al*., 2024), this research shows that EA tiering can play an important role in focusing on both the efficiency and effectiveness of EA systems. The role of EA tiering becomes even more pronounced within this global drive that is primarily focused on regulatory efficiency. This research showed that law reform primarily focused on regulatory efficiency has the underlying risk of eroding the substantive effectiveness of legislation (Bond *et al*., 2014), especially when considering the complex socio-economic and socio-ecological contexts within which EIAs operate (Audouin & De Wet, 2012; Roos *et al*., 2020; Fischer *et al*., 2023).

A clear finding of this research was that EIA was not designed to operate as a stand-alone environmental assessment instrument, but that the assessment of impacts in project-level EIAs should be contextualised within the strategic context provided by PPPs and strategic-level assessments. This finding is consistent with Thérivel and González (2021), as well as Arts and Fischer (forthcoming). Therefore, the effectiveness of EA tiering systems should be evaluated (supported by follow-up) to ensure their intended efficiency and effectiveness goals are achieved. Policy and law reform should consider both these goals.

Consistent with Monteiro *et al*. (2018), this research showed that the governance context significantly influences the institutionalisation of EA and EA tiering. This research showed South Africa to have an anthropocentric focus on sustainability and a strong developmental drive, culminating in an emphasis on regulatory efficiency in the institutionalisation of EA and EA tiering.

This research found that the voluntary status of strategic-level EA is a major weakness in establishing (or institutionalising) and implementing an effective EA tiering system in South Africa. A sound legislative framework for EA tiering is a foundational requirement for effective tiering. This finding is consistent with Monteiro *et al*. (2018), Bond *et al.* (2022), as well as Thérivel and González (2021), in identifying legislation as an important contextual factor that influences the effectiveness of EA. Within country-level contexts where economic growth is a political priority, weak EA tiering provisions in legislation can lead to poor EA practices (especially at the EIA level) that undermine the substantive purpose of achieving sustainable development outcomes. Bond *et al.* (2022) highlighted that the country's economic outlook is an important contextual influence on the effectiveness of EA. Using a ToC approach to develop a logical framework for EA, this research showed that the design (and contextual) component provides the founding conditions for the effective implementation of EA tiering - the design component provides the foundation that affects the causal relationship between all the other ToC components.

A major contribution of this research was to illustrate the importance of tiering in EA beyond being a mere theoretical concept. Even in the presence of practical challenges such as the currency of information and mismatch in the sequencing thereof, tiering in EA still has an ongoing value in guiding future decisions. It provides a foundation for measuring accountability for decision-making related to new development, as well as existing development and resource uses. To fulfil this role, EA follow-up, especially at the strategic level, is crucial in ensuring continuous improvement and communication of results to promote accountability and empower stakeholders. This research showed that a lack of follow-up at the strategic-level EA contributes to the low level of awareness and implementation of tiering, as well as the persistence of poor EA practices. Consistent with international experiences, this research emphasised the role of follow-up to raise awareness, evaluate performance, provide evidence on the effective implementation of strategic-level EA (and PPPs), and expose poor practices through the dissemination of information (Arts & Morrison-Saunders, 2022; González, 2022).

As mentioned above, the ToC methodology used in this research to establish a logical framework for EA tiering worked well in identifying and testing the assumptions that underlie the causal relationship between the ToC component for tiering in EA (i.e. design, input, activity, output, outcome, and impact components). This research showed that the design component of the ToC for EA tiering establishes the foundation for how tiering is to be implemented, particularly the legislative framework for EA tiering. In South Africa, the lack of tiering (practices) is a major weakness affecting the causal relationship of all the other ToC components - the weak legislative framework for tiering is the main contributing factor to weak EA tiering and EA practices.

This research also illustrated how TOC can be used to identify causal factors that influence the efficiency and effectiveness of EA performance. It can assist in identifying root causes and appropriate interventions, which is especially relevant within the global drive for regulatory efficiency (Fischer *et al*., 2023). A clear understanding of the inefficiencies and ineffectiveness of EA systems should inform (the need for) law reform. Also, perhaps the focus should be on improving the efficiency and effectiveness of tiering in EA rather than on law reform (*per se*) to improve regulatory efficiency. Put differently, once a clear legislative framework has been established for EA, poor practices (i.e., human agency challenges) cannot always be fixed through ongoing law reform. ToC can be used to identify weaknesses and the appropriate interventions, of which law reform is only one (and perhaps not the most appropriate) solution. Also, ToC can be used to identify the location of accountability ceilings (i.e., the point where the impact to be achieved lies outside the sole responsibility of environmental assessment). Importantly, accountability ceilings can be used during law reform processes (or interactions with lawmakers before embarking on law reform processes) to determine and communicate the extent to which law reform will be able to address the problem statement. The problem statements presented as the purpose of law reform can also be unpacked and interrogated using a ToC approach. In other words, a ToC approach can be used to evaluate the efficiency and effectiveness of EA tiering, identify the root causes and determine if law reform will be the appropriate intervention to address inefficiencies.

Consistent with international experiences, this research confirmed that the legislative frameworks for project-level assessments are changing in response to the demand for regulatory efficiency in South Africa (Alberts *et al*., 2023; Fischer *et al*., 2023). There is an increasing trend in South Africa to use strategic-level EAs to develop regulatory instruments to replace the existing legislated EIA process. The current interventions of using SEAs to develop regulatory instruments are primarily focused on specific sectors, as reported by Fischer *et al*. (2019), Retief *et al*. (2021) and Alberts *et al*. (2023). While creating tiering at the programme level in specific sectors is successful, this creates uneven playing fields between sectors rather than addressing the efficiency and effectiveness challenges in EA across all sectors and tiers. This research also showed that the lack of effective tiering in EA in South Africa has exacerbated the call for law reform (in the form of developing alternative regulatory instruments for specific sectors). The research also emphasised that tiering should address (both time and cost) efficiency and substantive effectiveness (i.e., sustainability) of regulatory processes at the EIA level. The provisions for strategic-level EA in legislation are ineffective, resulting in EIA as the final EA tier becoming the primary institutional focus. Inadequate institutional attention is given to the strategic context that should be provided by strategic-level EA tiers and their guidance toward both the efficiency and substantive effectiveness of EIAs. The South African experience

conveyed in this research is consistent with the international drive for regulatory efficiency in environmental assessment and the associated concern for a lack of attention given to substantive effectiveness (Bond *et al.*, 2014; Alberts *et al*., 2023; Fischer *et al*., 2023).

The extent to which tiered information effectively informs subsequent EAs depends on the appropriate use thereof. Although the research revealed that the quality of strategic-level tiered information can improve, it was also found that the use of existing, relevant information was limited. In South Africa, the strategic-level EA void has resulted in poor EIA practices that primarily depend on EIA information, even when strategic-level EA information is available. The research confirmed that human agency challenges, i.e., bounded rationality, displayed by the various role-players involved in EA processes and decision-making, are a major contributing factor to poor EA practices and weak application of vertical tiering in EA. Skills development and training should be a key priority in the EA sector, as even the best institutional arrangements will not necessarily translate into effective practices, especially at the EIA level. Therefore, whilst a sound legislative context is a fundamental requirement to enable tiering, sound EA practices are also required for the effective implementation of EA tiering.

10.7 Future research

In order to clarify the role of SEA in informing the development of legislation, policies, plans, and programmes in South Africa, further studies are needed. Parliament decided that every policy and law reform proposal submitted to the Cabinet for endorsement should be accompanied by a Socio-Economic Impact Assessment (SEIA) (DPME, 2011). The purpose of the SEIAs is to provide information on the need for policy/law reform and the environmental, social and economic implications thereof. It is recommended that research be conducted to evaluate if the role of SEIAs (DPME, 2011) is similar to the purpose assigned to SEA to inform the development of PPPs (Retief *et al.*, 2021; Sadler & Verheem, 2023; Arts & Fischer, forthcoming). It is also recommended that research be done on the efficacy of SEIAs in supporting evidence-based policy and law reform in South Africa – is there a discrepancy between the intended purpose of SEIAs and the implementation thereof? The study also indicates that more research is needed on the governance context (e.g., values, culture, institutional traditions, relationships and power dynamics) that underpins SEAs, as well as SEIAs – is it 'fit for purpose'? Given the assigned role of SEIAs in South Africa, the role of SEA should be clarified, but from the specific context of putting sustainability at the centre of decision-making.

An important emerging issue from this study (see Section 10.3), is the role of power dynamics in EA in South Africa – i.e., the role of power in EA, how it is derived and used, and the effect thereof. However, very little research has been conducted on power dynamics, therefore, further research is recommended on both the analytical and normative aspects of power dynamics in EA in South Africa:

- Analytically, it is important to understand where power is derived from and how it is produced and operated within the institutional context (such as legislation, policies and formalised communication forums) within which EAs operate in South Africa or other countries with a strong political focus on economic growth.
- From a normative perspective, the focus shifts to how power dynamics are used and the effect thereof, reflecting on the good and the bad of power dynamics. The role of EA in managing conflicts between stakeholders and the role of diversity of interactions in influencing the balancing of power relations in EA should also be considered.

Such research could also investigate how rationalising regulatory frameworks for improved efficiency has influenced power dynamics in EA.

Another theme that underpins this study is sustainability. To further explore this, more research is required on the role of sustainability objectives at different tiers of EA. One of the findings of a review study of the efficiency and effectiveness of the EIA system in South Africa (DPME/DEA, 2019) was that it was not possible to evaluate the effectiveness of the EIA system in contributing to the achievement of sustainability outcomes, due to the lack of sustainability objectives against which EIA outcomes can be measured. More research is needed on the role that EA tiering can play in formulating and cascading sustainability objectives from strategic to local levels, which is also interesting from an international perspective. In addition, the use of sustainability objectives in EA follow-up to determine the effectiveness of EA is also relevant here to investigate, which relates to observations found in the international literature (Arts *et al*., 2011; Morrison-Saunders *et al*., 2021).

Another field for further research that emerges from this study relates to the knowledge brokering value of tiering (see also Arts *et al*., 2011; Partidário & Sheate, 2013), especially the role of strategic-level EA, in communities as complex socio-economic and socio-ecological systems. Using a complexity theory and systems thinking approach, the contribution of tiering toward building social networks and the creation of identities in communities (i.e., establishing limits of acceptable change as boundaries) could be researched.

This research also points to the need to investigate further the relationship between the (perceived) challenges of existing EIA processes and the development of regulatory environmental instruments to replace the need for environmental decision-making and EIA processes. More specifically, clarity is needed on the problems in the current EIA system that are intended to be addressed by the development of regulatory instruments through law reform. Here, it will also be interesting to investigate if these alternative regulatory instruments address the root causes of EA system problems. In short, law reform initiatives should be informed by identifying the root causes of the challenges related to the existing EIA system, which, in turn, should be used to determine the most appropriate intervention. This study showed that a ToC approach can be used to develop logical frameworks for EIA systems (and the underlying assumptions) to identify areas of inefficiency and the extent to which law reform initiatives address the root causes.

Tiering in EA has been discussed in the literature, but in addition to this research, it would be good to conduct further (inter)national studies on the potential of tiering in EA, specifically the flow of information between tiers, to overcome some of the challenges related to limited (or 'bounded') rationality applied in decision-making, especially regulatory decision-making at the individual project (EIA) level. Such research should investigate the role of horizontal tiering in integrating information from different functional areas (or sectors) for application at different vertical tiers – and, in relation to this, how diagonal tiering (can) functions in practice – and how this can assist decision-makers (with mental and institutional limitations to consider multiple information sources) in considering relevant information during decision-making.

Related to an emerging issue from this study, further research is warranted on how tiering in EA can assist in fair and just administration, how this influences the flow of information between tiers, and how decision-makers use (and should use) tiered information to provide reasons and reasoning for decisions. Research is also needed on how tiering in EA and tiered information could improve accountability, thereby relating to the issue of the accountability ceiling (see above), by exposing inappropriate reasons and reasoning being applied in decision-making and ensuring that relevant information is considered when making decisions.

More research is needed on the horizontal tiering relationship between EMFs and Municipal Spatial Development Frameworks (SDFs). This research found that many interviewees expressed concerns that the quality of the environmental information contained in SDFs is inadequate. The results of this research showed that the relationship between SDFs and EMFs is one of complementarity and that the former cannot substitute (or fulfil the same purpose as) EMFs. However, more research is needed on this relationship to support the tiering relationship between EMFs and SDFs.

Internationally, complexity theory and systems thinking could be useful to unpack how EA systems operate within complex socio-ecological and socio-economic systems. This includes investigating the role of diversity and interdependence of relationships, the non-linearity of such interactions, and the role of boundaries (and how this links with accountability ceilings) in creating context-specific identities and stability (or resilience) in such complex systems.

This research developed an analytical framework to analyse tiering in EA based on the well-known ToC concept. In order to allow for comparative analysis, it is recommended that more in-depth case studies be conducted regarding other sectors in South Africa (such as the mining, agricultural and tourism sectors). Internationally, more applications of ToC in EA tiering research should also be considered. As this study showed, ToC could be used to build a logical framework for EA to provide a systematic approach to the different ToC components of EAs and the causal relationship between them. TOC provided an opportunity to unpack and investigate in-depth the assumptions underlying this causal relationship between ToC components, especially as assumptions are not always considered or unpacked when debating EA practices. Internationally, this approach holds value for comparative analysis of EA tiering practices, and the efficiency and effectiveness thereof, across different countries and sectors.

Internationally, more research should be done on the knowledge-brokering role of EA tiering - within the environmental sector and with external stakeholders. The research demonstrated that ToC could be a useful approach to communicate and share information that describes EA processes and tiering in a logical and systematic way, unpacking the causal relationship between different ToC components, its underpinning assumptions, and the presence of accountability ceilings in achieving sustainability as a long-term objective. In particular, the accountability ceiling could be used to reflect that sustainability is a collective whole-of-society obligation beyond the sole responsibility of the environmental sector. The importance of the accountability ceiling (see Figure 9-1) in EA tiering and EA effectiveness was highlighted by this study. Internationally, more research on the position of accountability ceilings is important in creating awareness about the role and expectations of EA in contributing rather than being solely responsible for achieving sustainability outcomes. More applications of ToC in EA tiering research can contribute to building and sharing knowledge about EA's value, role and (realistic) contributions to sustainability to stakeholders internal and external to the environmental sector. It is important that stakeholders understand the contributions of EA to sustainable development outcomes, but also clarify (and unpack) expectations that reach beyond the scope of EAs.

Finally, more international research could be conducted to critically evaluate EA tiering and unpack the causal relationship between the design/contextual component of EA systems and its subsequent components (i.e. inputs, activities, outputs, outcomes and impacts), and their

underpinning assumptions, as the foundation to identify root causes of efficiency and effectiveness challenges.

10.8 Epilogue

Having been involved in environmental assessment practice for more than 20 years, I started 6 years ago with this PhD research, allowing me to reflect on my practical experiences and to inform my practice work with academic insights. Being a 'pracademic' (Susskind, 2013) involved in EA, and based on my experiences as a practitioner as well as an academic doing research, I believe that EA in South Africa is at a crossroads where process rather than substance has become the focus. The future of EA will have to consider both regulatory efficiency and achieving substantive outcomes, but a balance between these two goals will have to be achieved. In conducting this research, I have come to the realisation that EA practitioners and academics (i.e., practice and theory) have to join forces if there is any hope of achieving such a balance. Practitioners must be able to present their work with improved academic (research) rigour, while academics must realise that their theoretical and research insight must be converted into complex and specific contexts in order to result in meaningful changes in the EA system and practices.

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South Africa (2014c). Infrastructure Development Act, 2014 (Act No. 23 of 2014). Pretoria: Government Printer. Government gazette No. 37712, Notice no, R447 of May 2014.

South Africa (2014d). Environmental Impact Assessment Regulations Listing Notice 1. Pretoria: Government Printer. Government gazette No. 38282, Notice no, R983 of 4 December 2014.

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South Africa (2014f). Environmental Impact Assessment Regulations Listing Notice 3. Pretoria: Government Printer. Government gazette No. 38282, Notice no, R985 of 4 December 2014.

South Africa (2016). Section 24H Registration Authority Regulations, 2016, issued in terms of the National Environmental Management Act, 1998. Pretoria: Government Printer. Government gazette no. 40154, notice no. R.849.

South Africa (2018a). Notice of identification in terms of section 24 (5) (a)and (b) of the National Environmental Management Act, 1998, of the procedures to be followed in applying for environmental authorisation for large scale electricity transmission and distribution development activities identified in terms of section 24 (2)(a)of the National Environmental Management Act, 1998, when occurring in geographical areas of strategic importance. Pretoria: Government Printer. Government gazette no. 41445, notice no. R.113. https://egis.environment.gov.za/egi.

South Africa (2018b). Notice of identification in terms of section 24 (5)(a)and (b) of the National Environmental Management Act, 1998, of the procedures to be followed in applying for environmental authorisation for large scale wind and solar photovoltaic energy development activities identified in terms of section 24 (2)(a) of the National Environmental Management Act, 1998, when occurring in geographical areas of strategic importance. Pretoria: Government Printer. Government gazette no. 41445, notice no. R.114 https://egis.environment.gov.za/egi.

South Africa (2018c). Identification of 5 strategic transmission corridors important for the planning of electricity transmission and distribution infrastructure as well as procedure to be followed when applying for environmental authorisation for electricity transmission and distribution expansion when occurring in these corridors. Pretoria: Government Printer. Government Gazette No. 41445, Government Notice No. 113, dated 16 February 2018. https://egis.environment.gov.za/egi.

South Africa (2018d). Adoption of the Gauteng Provincial Environmental Management Frameworks Standards and exclusion of associated activities from the requirement to obtain environmental authorisation in terms of section 24(2)(d) and 24(10)(a) of the National environmental Management Act, 1998, for the implementation of the Gauteng Provincial Environmental Management Framework. Government Gazette No. 41473, Government Notice No. 164, dated 2 March 2018.

South Africa (2019a). Notice of identification, in terms of Section 24 (5)of the National Environmental Management Act, 1998, of a Generic Environmental Management Programme relevant to an application for substation and overhead electricity transmission and distribution infrastructure which requires environmental authorisation as identified in terms of Section 24 (2)of the Act. Pretoria: Government Printer. Government gazette no. 42323, notice no. R.435, dated March 2019. https://egis.environment.gov.za/egi.

South Africa (2019b). Integrated Resource Plan (IRP2019): Department of Energy. Pretoria: Government Printer. Government gazette No. 42778, notice no, R1350 of October 2019.

South Africa (2019c). Adoption of the Sandveld Environmental Management Framework in terms of Regulation 5(4) of the Environmental Management Framework Regulations, 2010. Provincial Government Gazette 33306, Notice R547, dated 33306 on 7 June 2019.

South Africa (2020a). Protocol for the specialist assessment and minimum report content requirements for environmental impacts on avifaunal species by onshore wind energy generation facilities where the electricity output is 20 megawatts or more. Pretoria: Government Printer. Government Gazetted 43110, Government Notice No. 320 of 20 March 2020.

South Africa (2020b). Site sensitivity verification requirements where a specialist assessment is required but no specific assessment protocol has been prescribed. Pretoria: Government Printer. Government Gazetted 43110, Government Notice No. 320 of 20 March 2020.

South Africa (2020c). Procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 14(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for environmental authorisation. Pretoria: Government Printer. Government Gazetted 43855, Government Notice No. 1150 of 30 October 2020.

South Africa (2021a). Adoption of a generic environmental management programme for the management and mitigation of environmental impacts resulting from the implementation of working for ecosystems projects and the exclusion of these projects from the requirement to obtain an environmental authorisation. Pretoria: Government Printer. Government Gazetted 44173, Government Notice No. 105 of 5 February 2021.

South Africa (2021b). Adoption of a generic environmental management programme for the management and mitigation of environmental impacts resulting from the implementation of the Landcare projects and the exclusion of these projects from the requirement to obtain an environmental authorisation. Pretoria: Government Printer. Government Gazetted 44341, Government Notice No. 276 of 29 March 2021.

South Africa (2021c). Identification of procedures to be followed when applying for or deciding on an environmental authorisation application for large scale wind and solar photovoltaic facilities, when occurring in renewable energy development zones. Government Gazette No. 44191, Government Notice No. 142, dated 26 February 2021.

South Africa (2021d). Identification of geographical areas of strategic importance for the development of wind and solar photovoltaic energy facilities. Government Gazette No. 44191, Government Notice No. 144, dated 26 February 2021.

South Africa (2021e). Identification of procedures to be followed when applying for or deciding on an environmental authorisation application for the development of electricity transmission and distribution infrastructure when occurring in energy development zones. Government Gazette No. 44191, Government Notice No. 145, South Africa (2022). *National Infrastructure Plan 2050*. Pretoria: Government Printer. Government gazette No. 46033, notice no, R1874.

South Africa (2023). Notice of the Approved National Spatial Development Framework in term of Section 13(5) of the Spatial Planning and Land Use Management, Act No 16 of 2013 (SPLUMA. Government Gazette No. 47999, Government Notice No. 1594, dated 1 February 2023.

South Africa (2024a). Adoption of the Battery Storage Exclusion Norm and exclusion of Identified Activities Associated with the Development and Expansion of Battery Storage Facilities from the Requirement to obtain an Environmental Authorisation. Government Gazette No. 50387, Government Notice No. 4557, dated 27 March 2024.

South Africa (2024b). Adoption of the Solar Exclusion Norm and Exclusion of the Development and Expansion of Solar Photovoltaic Facilities from the Requirement to obtain an Environmental Authorisation. Government Gazette No. 50388, Government Notice No. 4558, dated 27 March 2024.

South Africa (2024c). Climate Change Act, 2024 (Act No 22 of 2024). Pretoria: Government Printer. Government Gazette no. 50966, Government Notice No. R.5050, dated 23 July 2024.

South Africa (2024d). Adoption of the KwaZulu-Natal Provincial Watercourse Infrastructure Standard and associated activities excluded from the requirement to obtain an environmental authorisation. Government Gazette No. 51234, Government Notice No. 5208, dated 27 March 2024.

APPENDIX 1: DOCUMENTS REVIEWED

The sections below list the various documents considered as part of Chapter 4 to develop a ToC for EA tiering in South Africa, as well as evaluating the three (3) case studies in Chapters 6, 7 and 8. These documents are referenced in the bibliography. The following categories of documents are listed below:

- Legislation considered as part of Chapter 4 to develop a ToC for EA tiering in South Africa, as well as evaluating the three (3) case studies.
- Policy documents considered as part of Chapter 4 to develop a ToC for EA tiering in South Africa, as well as evaluating the three (3) case studies.
- Environmental Management Frameworks (EMFs) that were considered, specifically related to the three (3) case studies, including supporting documents/reports.
- Strategic Environmental Assessments (SEAs) that were considered, specifically related to the three (3) case studies, including supporting documents.
- Municipal Spatial Development Frameworks (SDFs) that were considered, specifically related to the three (3) case studies, including supporting documents/reports.
- Environmental Impact Assessment (EIA) Reports as well as various supporting documents related to the three case studies.
- Environmental Impact Assessment (EIA) decisions (environmental authorisations), appeals and appeal decisions related to the three (3) case studies.
- Research reports considered as part of Chapter 4 to develop a ToC for EA tiering in South Africa.
- Additional SEAs considered as part of Chapter 4 to develop a ToC for EA tiering in South Africa.

Legislation considered as part of Chapter 4 to develop a ToC for EA tiering in South Africa, as well as evaluating the three (3) case studies:

- Constitution of the Republic of South Africa, Act 108 of 1996.

- National Environmental Management Act (NEMA) 107 of 1998.
- National Water Act 36 of 1998.
- Promotion of Administrative Justice Act 3 of 2000.
- Regulations on fair administrative procedures, 2002.
- National Environmental Management: Biodiversity Act 10 of 2000.
- Environmental Management Framework Regulations, 2010.
- Environmental Impact Assessment Regulations, 2014.
- Environmental Impact Assessment Regulations Listing Notice 1 (2014).
- Environmental Impact Assessment Regulations Listing Notice 2 (2014).
- Environmental Impact Assessment Regulations Listing Notice 3 (2014).
- Spatial Planning and Land Use Management Act 16 of 2013.
- Western Cape Land Use Planning Act 13 of 2014.
- Notice of identification in terms of section 24 (5) (a)and (b) of the National Environmental Management Act, 1998, of the procedures to be followed in applying for environmental authorisation for large scale electricity transmission and distribution development activities (2018).
- Notice of identification in terms of section 24 (5)(a) and (b) of the National Environmental Management Act, 1998, of the procedures to be followed in applying for environmental authorisation for large scale wind and solar photovoltaic energy development activities (2018).
- Identification of 5 strategic transmission corridors important for the planning of electricity transmission and distribution infrastructure as well as procedure to be followed when applying for environmental authorisation for electricity transmission and distribution expansion when occurring in these corridors (2018)

- Protocol for the specialist assessment and minimum report content requirements for environmental impacts on avifaunal species by onshore wind energy generation facilities where the electricity output is 20 megawatts or more (2020).

- Site sensitivity verification requirements where a specialist assessment is required but no specific assessment protocol has been prescribed (2020).

- Procedures for the assessment and minimum criteria for reporting on identified environmental themes (2020).

- Identification of procedures to be followed when applying for or deciding on an environmental authorisation application for large scale wind and solar photovoltaic facilities, when occurring in renewable energy development zones (2021).

- Identification of geographical areas of strategic importance for the development of wind and solar photovoltaic energy facilities (2021).

- Identification of procedures to be followed when applying for or deciding on an environmental authorisation application for the development of electricity transmission and distribution infrastructure when occurring in energy development zones (2021).

Policy documents considered as part of Chapter 4 to develop a ToC for EA tiering in South Africa, as well as evaluating the three (3) case studies:

- National Development Plan 2030.

- Draft national biodiversity offsets policy (2017).

- City of Cape Town Draft Policy on Biodiversity Offsets (2009).

- Environmental Impact Assessment and Management Strategy for South Africa (2014).

- Cape Town Bioregional Plan (2015).

- Guidelines for the evaluation and review of applications pertaining to renewable energy on agricultural land (2011).

- Guideline on Environmental Management Frameworks in terms of the EMF Regulations (2010).

- Guideline on Need and Desirability, Department of Environmental Affairs (2017).
- Western Cape Provincial Spatial Development Framework (2014).
- Western Cape Guideline on Biodiversity Offsets (2017).
- Karoo Readiness Action Plan for the Western Cape Government and relevant Western Cape municipalities in the Central Karoo, for potential large scale, or regional developments (2021).
- Western Cape Climate Change Response Strategy: Vision 2050 (2022).
- Strategic Environmental Assessment Guideline (2007).
- National Framework for Sustainable Development in South Africa (2008).
- National Strategy for Sustainable Development and Action Plan (2011).
- National Department of Human Settlements Strategic Plan 2014 – 2019.
- Green Transport Strategy for South Africa 2018-2050.
- National Evaluation Policy Framework. Department of Performance Monitoring and Evaluation (2011).
- Draft Penhill Conceptual Development Framework (2017).
- White Paper on Renewable Energy Policy of the Republic of South Africa (2004).
- Electricity Regulations on the Integrated Resource Plan 2010-2030 (2010 IRP).
- White Paper on Renewable Energy Policy of the Republic of South Africa (2004).
- Electricity Regulations on the Integrated Resource Plan 2010-2030 (2010 IRP).

Environmental Management Frameworks (EMFs) that were considered, specifically related to the three (3) case studies, including supporting documents/reports:

- The City of Cape Town Environmental Management Framework (2013). This includes:
    - Khayelitsha Mitchells Plain Greater Blue Downs District Plan: Spatial Development Plan and Environmental Management Framework: Technical Report (2012).

- Khayelitsha Mitchells Plain Greater Blue Downs District Plan: Spatial Development Plan and Environmental Management Framework: Baseline Information and Analysis Report (2012) (i.e. various specialist studies).
- Public consultation report.

- Garden Route Environmental Management Framework (2010). This includes the various specialist studies that informed the EMF. This includes:
  - Various specialist reports.
  - Public consultation report.

Strategic Environmental Assessments (SEAs) that were considered, specifically related to the three (3) case studies, including supporting documents:

- Strategic Environmental Assessment for Wind and Solar Photovoltaic energy in South Africa (2015).
  - Terms of reference: for a consultancy to assist the department with the development of a strategic environmental assessment to facilitate the efficient and effective roll out of solar energy in South Africa (2012).
- Strategic Environmental Assessment for the Expansion of Electricity Grid Infrastructure Corridors in South Africa (2019).
- Phase 2 Strategic Environmental Assessment for wind and solar PV energy in South Africa (2019).

Municipal Spatial Development Frameworks (SDFs) that were considered, specifically related to the three (3) case studies, including supporting documents/reports

- Cape Town Spatial Development Framework: Statutory Report (2012).
  - Khayelitsha Mitchells Plain Greater Blue Downs District Plan: Spatial Development Plan and Environmental Management Framework: Technical Report (2012).

- Khayelitsha Mitchells Plain Greater Blue Downs District Plan: Spatial Development Plan and Environmental Management Framework: Baseline Information and Analysis Report (2012).

- Cape Town Spatial Development Framework (2018), City of Cape Town.

- Knysna Municipality (2007). Knysna Spatial Development Framework (SDF) - Final Draft Report (2007). This included the following supportive document:

  - Knysna Municipality (2005). Knysna State of the Environment Report (SoER) (2005).
- Knysna Spatial Development Framework - Strategic Synthesis (2017). This included the following supportive document:
  - Integrated Strategic Development Framework: Strategic Environmental Assessment: Natural Environmental Context (draft) (2015).
- Laingsburg Municipal Spatial Development Framework (2017).
  - Laingsburg Municipality Integrated Development Plan (2012/ 2017).

Environmental Impact Assessment (EIA) Reports as well as various supporting documents related to the three case studies:

- Final Basic Assessment Report for the proposed Rietkloof Wind Energy Facility (2019). This includes:
  - Previous EIA Reports and specialist studies.
  - Draft Basic Assessment Reports.
  - Various specialist studies.
  - Public participation report.
  - Correspondence with decision-making authority.
  - Application form.

- Final Environmental Impact Report for the proposed Penhill Development (2019), including the following supportive documents:
  - Previous EIA Reports and specialist studies.
  - Draft and Final Scoping Reports.

- Draft Environmental Impact Reports.
- Various specialist studies.
- Public participation report.
- Correspondence with decision-making authority.
- Application form.

- Final Basic Assessment Report (2019) for the proposed Construction of a Mixed Use, Sport, Adventure and Tourism Development on Erf 12403, George Rex, Knysna, compiled by Eco Route Environmental Consultancy (2019). This includes:
  - Previous EIA Reports and specialist studies (compiled but not submitted as a formal application).
  - Draft Basic Assessment Reports.
  - Various specialist studies.
  - Public participation report.
  - Correspondence with decision-making authority.
  - Application form.

- Final Basic Assessment Report (2022) for the Proposed Construction of a Mixed Use, Sport, Adventure and Tourism Development on Erf 12403, George Rex, Knysna, compiled by Eco Route Environmental Consultancy. This includes:
  - Draft Basic Assessment Reports.
  - Various specialist studies. This includes the Specialist Planning Report for Proposed Rezoning & Subdivision of Knysna Erf 12403 (2021).
  - Public participation report.
  - Correspondence with decision-making authority. This includes a DFFE Notice of intention to issue a Compliance Notice in terms of section 31L of the National Environmental Management Act related to the alleged unlawful commencement of development (2021).

- Application form.

Environmental Impact Assessment (EIA) decisions (environmental authorisations), appeals and appeal decisions related to the three (3) case studies:

- Environmental authorisation: The 36 MW Rietkloof Wind Energy Facility (WEF) and its associated infrastructure within the Laingsburg Local Municipality in the Western Cape Province, Environmental Authorisation (2016). This includes the decision and the key factors for the decision.

- Environmental Authorisation: Development of the 183MW Rietkloof Wind Energy Facility and associated infrastructure near Matjiesfontein in the Western Cape (2019). This includes the decision and the key factors for the decision.

- Environmental Authorisation: The Proposed Penhill Greenfields Mixed Use Development and Associated Infrastructure in the Western Cape (2019). This includes the decision and the key factors for the decision.

- Refusal of Environmental Authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended for the proposed construction of a mixed use, sport, adventure and tourism development on erf 12403, George Rex, Knysna (2020). This includes the decision and the key factors for the decision.

- Refusal of Environmental Authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended for the proposed construction of a mixed use, sport, adventure and tourism development on erf 12403, George Rex, Knysna (2022). This includes the decision and the key factors for the decision.

- Appeal Decision (2020) related to the appeal against the Refusal of Environmental Authorisation for the proposed construction of a mixed use, sport, adventure and tourism development on erf 12403, George Rex, Knysna (2020).

- Appeal Decision (2023) related to the appeal lodged against the Refusal of Environmental Authorisation for the proposed construction of a mixed use, sport, adventure and tourism development on erf 12403, George Rex, Knysna, Western Cape Province (2023).

Research reports considered as part of Chapter 4 to develop a ToC for EA tiering in South Africa:

- Review the Effectiveness and Efficiency and of the Environmental Impact Assessment System in South Africa (2008).
- Independent Investigation of the Underlying Causes of Non-Compliance by Organs of State with the Provisions of Chapter 3 of the National Environmental Management Act (2018).
- Report on the Consideration and Prioritisation of Integrated Environmental Management Instruments to facilitate the increased use thereof (2023). Report produced by the Department of Environmental Affairs, Forestry and Fisheries (DFFE).
- Report on the Evaluation of Environmental Impact Assessment System (2019).
- Request for Proposals for Implementation Evaluation of the Environmental Impact.

Additional SEAs considered as part of Chapter 4 to develop a ToC for EA tiering in South Africa:

- Strategic Environmental Assessment for the South African Mid-Frequency Array of SKA Phase (2016).
- DEA (2017a). Strategic Environmental Assessment for Shale Gas Development in the Central Karoo (2017).
- Strategic Environmental Assessment for Shale Gas Development in the Central Karoo Phase 3: Decision Support Tools Report (2017).
- Strategic Environmental Assessment for Electricity Grid Infrastructure in South Africa (2016).
- Terms of reference: for a strategic environmental assessment and pre-construction site-specific environmental assessment criteria to ensure the efficient and effective expansion of the electricity grid infrastructure for South Africa (2013).
- Strategic Environmental Assessment for the Identification of Energy Corridors, as well as Assessment and Management of a Gas Pipeline Network for South Africa (2019).

- Strategic Environmental Assessment for Marine and Freshwater Aquaculture Development in South Africa (2019).

- Strategic Assessment of the Environmental Authorisations and associated Norms and Standards of community service watercourse infrastructure in KwaZulu-Natal (2021). Unpublished report prepared for the KZN Department of Economic Development, Tourism & Environmental Affairs.