

Perceptions on the effectiveness of EIA scoping in South Africa

N. Mkhize

 orcid.org/0000-0003-2912-1255

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Supervisor: Dr L Kruger

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ABSTRACT

Scoping is one of the earliest stages in an Environmental Impact Assessment (EIA) process but can continue throughout the EIA process as new impacts, issues and other matters arise. Scoping is a requirement of any EIA and is primarily aimed at determining the main potential environmental impacts from a proposed development. The benefits of an EIA fall under four categories: (i) ecosystem; (ii) socio-political; (iii) economic; and (iv) governance. Despite these benefits of an EIA, the value of this process has been questioned by various parties. Scholars have suggested that one of the ways of enhancing EIA is to improve scoping which, if undertaken successfully, may contribute to an effective EIA. Effectiveness refers to whether something functions according to set expectations and accomplishes the set intentions.

This research study was aimed at establishing the perceptions of South African Environmental Assessment Practitioner (EAP) consultants on the effectiveness of scoping. Subsequently, three Research Objectives were set: (1) to determine the role and importance of scoping in the EIA process; (2) to determine the perceptions of South African EAP consultants towards effective EIA scoping; and (3) to develop criteria against which to evaluate the effectiveness of scoping. In order to meet these objectives, a review of the literature pertaining to scoping in line with the research title, problem and objectives was conducted. Additionally, an empirical investigation utilising a mixed methods research approach was followed where a sample of 37 South African EAP consultants participated through the completion of a self-administered survey questionnaire. Both the qualitative and quantitative data from the study was captured for analysis. A thematic analysis, using accepted data coding methods was carried out.

The findings of the study in relation to the objectives was firstly that the role and importance of scoping in the EIA process was deemed not only as a means to determine and focus issues and impacts for discussion in the EIA phase as stated in the majority of literature, but to also serve other purposes such as presenting impact assessment methods, introducing projects to Interested and Affected Parties (I&APs) and obtaining I&APs support for the project. Secondly, the results demonstrated that the majority of the EAPs believe that a distinct scoping process adds value to the broader EIA process, particularly in the undertaking of complex projects. The EAPs however recommend that the scoping process must be amended in areas such as timeframes and the public participation process (PPP). Lastly, the criteria developed to evaluate the effectiveness of scoping, covered the background of the lead EAP compiling the scoping report, the EAP official reviewing the scoping report, the undertaking of the PPP and various aspects pertaining to the contents of the scoping report.

It can be concluded that despite the shortcomings of the current South African scoping practice, the effectiveness of the process can be improved through the implementation of three recommendations emerging from this research study which are as follows: The final scoping report must be made available to all Interested and Affected Parties (I&APs) and not only the Competent Authority (CA); the scoping phase should include desktop specialist studies; and that the scoping report requirements must be simplified and not mimic the EIA report.

Keywords: Environmental Impact Assessment (EIA), Environmental Assessment Practitioner (EAP), scoping, effectiveness, perceptions, South Africa.

ABBREVIATIONS AND ACRONYMS

BA	Basic Assessment
B.A	Bachelor of Arts
B.Sc	Bachelor of Science
CA	Competent Authority
CIBD	Convention on Biological Diversity
CPD	Continued Professional Development
DEFF	Department of Environment, Forestry and Fisheries
DEA	Department of Environmental Affairs
DEAT	Department of Environmental Affairs and Tourism
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association of South Africa
ECA	Environment Conservation Act No. 73 of 1989
ECSA	Engineering Council of South Africa
EDS	Elton B. Stephens Company (EBSCO) Discovery Service
ELA	Environmental Law Association
EIA	Environmental Impact Assessment
ETD	Electronic Theses and Dissertations
EPA	Environmental Protection Agency
ES	Environmental Statement
FEN	Freshwater Ecosystem Network
GIS	Geographic Information System

I&AP	Interested and Affected Party
IAIA	International Association for Impact Assessment
IAIAsa	International Association for Impact Assessment South Africa
IEMA	Institute for Environmental Management and Assessment
ILASA	Institute for Landscape Architecture in South Africa
M.A	Master of Arts
MPhil	Master of Philosophy
M.Sc	Master of Science
NEMA	National Environmental Management Act No. 107 of 1998
NWU	North-West University
Ph.D	Doctor of Philosophy
PPP	Public Participation Process
RPL	Recognition of Prior Learning
SABAA	South African Bat Assessment Association
SACLAP	South African Council for Landscape Architectural Professionals
SACNASP	South African Council for Scientific Natural Professions
SEA	Strategic Environmental Assessment
UN	United Nations
UNEP	United Nations Environment Programme
WHO	World Health Organisation
WISA	Water Institute of South Africa

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CHAPTER 1: INTRODUCTION

1.1 Introduction and background to the study

Environmental Impact Assessment (EIA) is a decision-making tool for the early identification and evaluation of possible results of a proposed development to allow for informed decision-making by authorities to either permit or refuse the development to proceed (Loomis and Dziedzic, 2018; Roos *et al.*, 2020). The main aim of an EIA is environmental protection and sustainable development (Environment Agency, 2002; Mulvihill, 2003; Cashmore *et al.*, 2004; Loomis and Dziedzic, 2018; Roos *et al.*, 2020; Western Cape Government: Environmental Affairs and Development Planning, undated). Sustainable development is defined in the 1987 Brundtland Report (also known as ‘Our Common Future’) as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (UN, 1987:n.p). The undertaking of an EIA in order to meet sustainable development and ensure environmental protection also allows for the identification of mitigation measures with the goal of either avoiding or minimising the potential negative impacts of a proposed development. EIA also allows for the enhancement of the positive impacts from the proposed development (Environment Agency, 2002; João *et al.*, 2011; Loomis and Dziedzic, 2018; Roos *et al.*, 2020).

Roos *et al.* (2020:3) present the benefits of an EIA under four categories as follows:

- *Ecosystem*: EIA aids in the protection of the environment, promotes a culture of environmental conservation, promotes developments that do not lead to environmental damage and are in harmony with the environment;
- *Socio-Political*: promotes awareness and education about the environment, improves the likelihood of the acceptance of a development by society and improves the authority of the state department accountable for the protection of the environment;
- *Economic*: undertaking an EIA as a legislative requirement prevents the issuing of fines and penalties, allows for a developer to determine whether or not a development will require withdrawal or amendment, prevents unwarranted operational costs through the identification of mitigation measures and improves economically sustainable developments which also incorporate job creation; and
- *Governance*: through the involvement of various authorities, a fair opportunity to contribute towards decision making is provided to authorities. EIA also improves cooperative governance and enhances public participation and access to information.

Despite the benefits of an EIA, the value of this process has been questioned by various parties such as governments, proponents and investors (Bond and Morrison-Saunders, 2013;

Pope *et al.*, 2013; Morrison-Saunders *et al.*, 2015; Roos *et al.*, 2020). One of the ways of enhancing EIA is to improve scoping (Sadler, 1996; Morrison-Saunders *et al.*, 2014). Another way in which the EIA process can be improved is to enhance its effectiveness (Veronez and Montano, 2015). Effectiveness is defined as “whether something works as intended and meets the purpose(s) for which it was designed” (Sadler, 1996:37). The four categories of effectiveness are *procedural*, *substantive*, *transactive* and *normative* (Sadler, 1996; Loomis and Dziedzic, 2018; Runhaar *et al.*, 2019) and are discussed in detail later under section 2.4. The value of scoping and its link to EIA effectiveness will be discussed further in the sections below.

1.1.1 The value of scoping and the link to EIA effectiveness

In the EIA process, scoping is preceded by screening and succeeded by the impact assessment or impact analysis phase as illustrated in Figure 1-1 below (UNEP, 2002; Fischer and Phylip-Jones, 2008; Borioni *et al.*, 2017; Department of Environmental Affairs, 2018). Scoping is aimed at the identification of a proposed development’s possible key issues or impacts that must be addressed during the EIA phase and disregards those that are unimportant (Environment Agency, 2002; UNEP, 2002; Hansen and Wood, 2006; Snell and Cowell, 2006; Fischer and Phylip-Jones, 2008; Badr, 2009; IAIA, 2018; Jalava *et al.*, 2010).

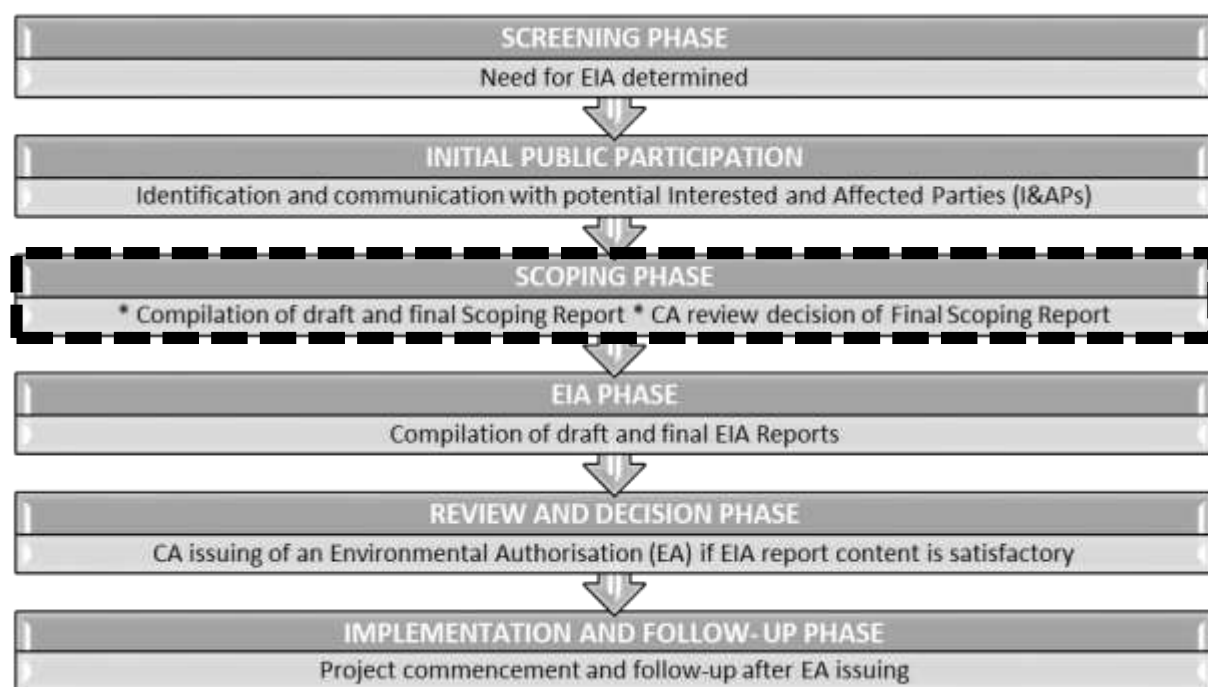


Figure 1-1: Scoping in the EIA Process.

While scoping is one of the earliest phases in an EIA, it is not a once-off activity but rather one that continues throughout the EIA process as new impacts, issues and other matters that can arise at any time during the process are identified (Sadler, 1996; UNEP, 2002; Wood *et al.*, 2006; Fischer and Philip-Jones, 2008; IEMA, 2011).

In the scoping process, the identified potential impacts are based on elements such as legislation, stakeholder involvement and expert knowledge (CIBD, 2010). Mulvihill (2003:40) terms scoping as a “funnel” to focus issues in the EIA process. Through this focus, EIA studies are concentrated on the significant impacts, so that time and money are not wasted on unnecessary investigations (UNEP, 2002; Snell and Cowell, 2006). In addition to the identification of a proposed development’s possible key issues, scoping also serves other purposes which are presented by the likes of Sadler (1996); Environment Agency (2002); UNEP (2002); Fischer and Philip-Jones (2008); Thorpe (2014); and the 2014 National Environmental Management Act’s Environmental Impact Assessment Regulations amended in 2017 (Department of Environmental Affairs, 2018) as follows:

- Defines the terms of reference for specialists;
- Presents the various project alternatives;
- Caters for stakeholder consultation or public participation; and
- Aids in the determination of a proposed method for the assessment of impacts and the proposed mitigation measures both during the scoping phase and the environmental assessment phase.

Sadler (1996:113) adds that “scoping is the foundation for effective EIA”. Against this background it is important that effectiveness of scoping be investigated.

1.1.1.1 Link between EIA scoping and effectiveness

According to the International Association for Impact Assessment (IAIA) (2018), good scoping results in a more effective and efficient assessment process. Sadler (1996) mentions how scoping, along with a valuation of significance, a review of the Environmental Impact Statement (EIS) and monitoring and follow-up is one of the four key elements for the effectiveness of environmental assessments. The determination of the effectiveness of an EIA is a common goal for stakeholders such as investors, policy makers and academics (Sadler, 1996; Bond and Morrison-Saunders, 2013). Morrison-Saunders *et al.* (2014) propose that one of the ways that EIA effectiveness can be improved is to enhance scoping. Loomis and

Dziedzic (2018) highlight how the effectiveness of EIAs covers all steps inclusive of scoping. This study will therefore merge the two proposed ideas for improving EIA by exploring the effectiveness of EIA scoping.

1.1.2 Study orientation

This study is set in a South African context. The effectiveness of scoping will be explored through the lens of Environmental Assessment Practitioner (EAP) consultants by gauging their perceptions of this necessary step in EIA.

The South African scoping process is undertaken according to the National Environmental Management Act No. 107 of 1998 (NEMA) EIA Regulations (Department of Environmental Affairs, 2018). NEMA defines an EAP as an “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” (National Environmental Management Act, 1998). It is important to note that in this definition an EAP can either be involved in the ‘planning, management, or coordination’ of an environmental instrument, or they can be involved in the ‘review’ of the environmental instruments. The former is termed ‘consultant’ by authors such as Morrison-Saunders and Bailey (2009), Kågström and Richardson (2015), Kågström (2016) and EAPASA (2018). Kågström and Richardson (2015) also refer to ‘consultants’ as ‘EA preparers’. Those EAPs involved in the ‘review’ of the environmental instruments are termed ‘officials’ or ‘regulators’ by Roos *et al.* (2020) who add that this group of EAPs is also responsible for decision making on EIAs. Kågström and Richardson (2015) also use the term ‘regulators’ along with the term ‘reviewers’ for EAPs who review environmental instruments such as EIAs. In this Research Study, the terms ‘EAP consultants’ and ‘EAPs’ will be used interchangeably to describe the professionals who are involved in the ‘planning, management, or coordination’ of an environmental instrument based on the responsibilities set out in the National Environmental Management Act, 1998.

It is important to note that while the term ‘EIA’ will be used in this study, the same process is referred to as Impact Assessment (IA) by authors such as Morrison-Saunders *et al.* (2014), João *et al.* (2011), and Canter and Ross (2014). Others such as Sadler (1996), Fischer and

Phylip-Jones (2008), as well as Kågström (2016) use the term Environmental Assessment (EA). Similar to this study, other authors such as Cashmore *et al.* (2004), Veronez and Montano (2015), Loomis and Dziedzic (2018), and Roos *et al.* (2020) make use of the term EIA. This term is also used by the researcher to contextualise this South African study where two processes used for EA are either a Basic Assessment (BA) process or a scoping and EIA. In South Africa, scoping is a requirement for both the BA process and the scoping and EIA process. In the BA, scoping is integrated with the assessment phase. In the scoping and EIA process however, scoping is a distinct and separate phase that requires authority approval before the EIA phase can commence (Department of Environmental Affairs, 2018; Western Cape Government: Environmental Affairs and Development Planning, undated). This distinct scoping phase is also a requirement in countries such as the United States of America, Canada, Australia and Brazil (Mulvihill, 2003; Badr, 2009; Borioni *et al.*, 2017), while it is not distinct in countries such as Chile, Russia, and Bangladesh (Glasson *et al.* (cited by Thorpe, 2014:1). Noting this key difference between the two processes, it is clear that more resources are required for the scoping and EIA process than for the BA process.

1.2 Problem statement and rationale for the study

Scoping is a requirement of any EIA and is aimed at determining the main potential environmental impacts from a proposed development (Thorpe, 2014; IAIA, 2018). For the scoping process to best serve its purpose, sources such as Middle and Middle (2010) and IAIA (2018) highlight the importance of allocating sufficient time and resources to this process. Based on this, it is therefore clear that the time and resources required for the scoping process will extend into the larger EIA process.

Internationally, some governments, proponents, investors and other parties have developed a negative perception towards EIAs due to the above-mentioned costs and time required for this process (Bond and Morrison-Saunders, 2013; Pope *et al.*, 2013; Morrison-Saunders *et al.*, 2015; Roos *et al.*, 2020). This opinion was noted in literature concerning countries such as Australia (Middle *et al.*, 2013; SBS News, 2019), Canada (Gibson, 2012), and South Africa (Thorpe, 2014; Roos *et al.*, 2020). It is against this background that debates on effectiveness of EIAs prevail.

Literature on EIA effectiveness is available and includes international examples such as Sadler (1996), who was the director for a study headed by the Canadian Environmental Assessment Agency but with input from bodies based in other countries, Polido and Ramos (2015) whose study was based on scoping effectiveness in Portugal as well as Hansen and

Wood (2016) who undertook their effectiveness study in England. South African examples on EIA effectiveness include Sandham *et al.* (2013) and Roos (2020). This literature also alludes to the ongoing concerns regarding the time involved and the costs of conducting EIAs.

Due to the role of EAP consultants in determining the quality and practice of EAs as discussed by the likes of Snell and Cowell (2006), Kågström and Richardson (2015) and Kågström (2016), it is important that EAP consultants are provided with an opportunity to contribute to the debates on EIA effectiveness. Authors such as Sadler (1996) and Morrison-Saunders *et al.* (2014) propose that one of the ways through which EIA effectiveness can be improved is to enhance scoping. Specific to scoping and its effectiveness based on the perceptions of EAP consultants, studies have been undertaken in countries such as England and Wales (Snell and Cowell, 2006; Wood *et al.*, 2006; Hansen and Wood, 2016) and in Sweden (Kågström, 2016). Although South African literature such as Scorgie (1999) and Thorpe (2014) focus on scoping, EAPs perceptions, specifically on the effectiveness of scoping in EIA for a South African context, has not been researched until now. This study is significant as it will give voice to South African EAP consultants as professionals who undertake the greatest number of tasks required for the EIA scoping process. It must be highlighted that the views of each professional is however based on various aspects such as their educational background, experience, values and expectations as noted by various authors (Wood *et al.*, 2006; Morrison-Saunders and Bailey, 2009; Morgan *et al.*, 2012; Kågström and Richardson, 2015; Kågström, 2016; Hansen and Wood 2016:4; Duarte *et al.*, 2017; Zhang *et al.*, 2018; Runhaar *et al.*, 2019) and as discussed further in section 2.6 of this dissertation.

1.3 Research aim and objectives

The aim of this study is to determine the perceptions of South African Environmental Assessment Practitioner (EAP) consultants on the effectiveness of Environmental Impact Assessment (EIA) scoping. The objectives of this research are:

- 1) To determine the role and importance of scoping in the EIA process;
- 2) To determine the perceptions of South African EAP consultants towards effective EIA scoping; and
- 3) To develop criteria against which to evaluate the effectiveness of scoping.

1.4 Brief overview of the research methodology

The study's research methodology entailed a literature review and an empirical investigation as means to determine the perceptions of EAPs on EIA scoping in the South African context.

A wide variety of literature on the topic was consulted, including books, journals, dissertations and other sources such as governments and agencies' publications. The empirical investigation followed a mixed methods research approach using a combination of quantitative and qualitative methods (Brannen, 2009; Maree, 2016). Structured survey questionnaires consisting of closed- and open-ended questions were developed and were completed by 37 EAPs through self-administration. These were based on aspects such as the background of the EAP consultant, criteria that constitutes effective scoping, methods for the identification of key impacts or issues for the scoping. Two methodological limitations encountered in the study were concerning the non-receipt of clarity of responses to open-ended questions as well as some EAPs' selection of more than one response to closed-ended questions. The impacts of these limitations on the credibility of the research study were minor as they were limited to one EAP and two EAPs respectively. A detailed discussion regarding the research methodology followed during this study will be provided in Chapter 3.

1.5 Structure and outline of the dissertation

This section provides a brief overview and description of the content of each chapter in this dissertation. The outline of this research study is as follows:

Chapter 1: Introduction

This chapter presents the research background and problem, aim and objectives and an outline of the dissertation. It commences with a brief discussion on EIA and its benefits, while also mentioning how the value of the process has been questioned by some parties. The manner in which the EIA process can be improved is to enhance the scoping process because good scoping results in a more effective and efficient assessment process. This reflects a link between EIA effectiveness and scoping. This chapter also presents South Africa as the study setting, defines the background to the use of the terms 'Environmental Impact Assessment (EIA)' and of 'Environmental Assessment Practitioner (EAP) consultants' instead of other terms used in the literature. The chapter concludes with an explanation on the outline and structure of the dissertation.

Chapter 2: Literature Review

This chapter focuses on literature relating to the research problem and rationale as well as keywords identified. The intention of Chapter 2 is to address Research Objective 1. This chapter commences with a brief reflection on the legislative background to scoping in South Africa before presenting elements of effective scoping as noted in various literature as well as EIA effectiveness categories. Methods for the identification of impacts for assessment are also discussed and the chapter concludes with a discussion of the literature pertaining to the importance of and perceptions of EAP consultants.

Chapter 3: Research Methodology

This chapter focuses largely on the research approach, sampling, data collection, data analysis, the ethical considerations and the limitations of the overall methodology adopted for the study with the overall purpose of mainly addressing Research Objectives 2 and 3.

Chapter 4: Data Analysis and Discussion

This chapter presents the findings of the research as well as an analysis of the data to interpret the findings as a means to address Research Objectives 2 and 3. The data analysis and discussion will be based on the responses of EAPs captured in the survey questionnaire.

Chapter 5: Conclusion and Recommendations

All research findings will be summarised in this concluding chapter. The conclusions (inclusive of discussions indicating how the objectives were met), summary of contributions as well as the recommendations for future practice and areas of research arising from the findings will also be presented.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Chapter 1 of this dissertation presented a discussion of the identification of effective scoping as one of the ways in which to improve the Environmental Impact Assessment (EIA) process based on the criticisms received from various parties such as investors, governments, etc. (Bond and Morrison-Saunders, 2013; Pope *et al.*, 2013; Morrison-Saunders *et al.*, 2015; Roos *et al.*, 2020) with regards to the costs and time required for this process. Bearing in mind that this research is concerned with the determination of perceptions on the effectiveness of EIA scoping in the South African context as presented in Chapter 1, Chapter 2 commences with the South African scoping requirements based on legislation. This is followed by a discussion of literature about the elements of effective scoping and EIA effectiveness categories applicable to scoping. The methods for the identification of impacts for assessments will be discussed next. This chapter will conclude with the review of literature on the importance and perceptions of EAP consultants in EIA inclusive of scoping. In this chapter, aspects such as areas of debates, similarities and gaps in literature will be presented. This second chapter, together with Chapter 1, aims to address Research Objective 1 pertaining to the role and importance of scoping in the EIA process. The methodology followed for the literature review as covered in detail in section 3.2 indicates that various sources were consulted.

2.2 Scoping in South Africa

Within the South African context and as discussed in Chapter 1, scoping in the Basic Assessment (BA) process is integrated with the assessment phase but is a distinct phase in the scoping and EIA process (Department of Environmental Affairs, 2018; Western Cape Government: Environmental Affairs and Development Planning, undated). In the scoping and EIA process, scoping follows the screening process and is undertaken before the impact assessment phase (UNEP, 2002; Fischer and Phylip-Jones, 2008; Department of Environmental Affairs, 2018). Chapter 1 also highlighted that the South African scoping process is undertaken according to the National Environmental Management Act (NEMA) and the NEMA EIA Regulations of 2014 as amended in 2018 (hereafter 'NEMA 2014 EIA Regulations') (National Environmental Management Act, 1998; Department of Environmental Affairs, 2018). While these pieces of legislation are key to the scoping process, the document on scoping compiled by the Department of Environmental Affairs (now Department of Environment Forestry and Fisheries (DEFF)) under the Integrated Environmental

Management Information Series, is also a good guidance to scoping in South Africa (Department of Environmental Affairs and Tourism, 2002a).

According to the Department of Environmental Affairs and Tourism (undated), 13 403 EIAs (and, in turn, 13 403 scoping reports) were received by the 10 competent authorities (CAs) of South Africa between August 2010 and April 2018. These 10 CAs comprise a national environmental department as well as provincial environmental departments operating in each of South Africa's nine provinces. An average of 1 750 EIA reports were received per annum across all provinces of the country (see Table 2-1). These details on the submission of scoping reports to CAs provides an idea of the extent of the undertaking of the scoping process in South Africa.

Table 2-1: South African EIA statistics between August 2010 to April 2018

Competent Authority	EIA Reports received by the Competent Authority between August 2010 to April 2018	Average EIA Reports received by the Competent Authority between August 2010 to April 2018
National Department	2760	360
Eastern Cape	1336	174
Free State	543	71
Gauteng	1262	165
Kaw-Zulu Natal	1966	257
Limpopo	1291	169
Mpumalanga	1089	142
North West	726	95
Northern Cape	260	34
Western Cape	2170	283
TOTAL	13 403	1750

According to Regulations 21 to 22 in the current NEMA 2014 EIA Regulations amended in 2018, the scoping process takes a total of 87 days from the time of the submission of the application form for environmental authorisation until the decision of the CA on whether or not to accept the scoping report (Department of Environmental Affairs, 2018). These 87 days exclude the time to undertake the initial Public Participation Process (PPP) inclusive of Newspaper Adverts, Notice Boards etc. as set out in Regulations 40 to 43 of the NEMA 2014 EIA Regulations. These days also exclude the time required for the compilation of the report as per Appendix 2 of the Regulations (Department of Environmental Affairs, 2018).

The requirements for a scoping report as set out in Appendix 3 of the NEMA 2014 EIA Regulations include, but are not limited to, the following:

- legislative context;
- motivation for development;
- details on process followed to arrive at preferred activity, site, location;
- alternatives taken into account;
- public participation details;
- identified impacts and risks;
- potential mitigation measures; and
- plan of study for the EIA phase (Department of Environmental Affairs, 2018).

Specific to the legislative requirements of scoping according to the NEMA 2014 EIA Regulations (Department of Environmental Affairs, 2018), some of the requirements of the scoping report (as set out in Appendix 2 of the above-mentioned Regulations) are repeated or are closely similar to those of the EIA report (as set out in Appendix 3 of the above-mentioned Regulations). Examples of the level of repetition or very close similarities are presented in Table 2-2 below.

Table 2-2: Similarities in the requirements for a scoping report and EIA report in the NEMA 2014 EIA Regulations, as amended

Section in Appendix 2 of the NEMA EIA regulations	Section in Appendix 3 of the of the NEMA EIA regulations	Area of assessment
2(1)(d)	3(1)(d)	A description of the scope of the proposed activity
2(e)	3(e)	Legislative context
2(f)	3(f)	Motivation for the proposed development
2(h)(ii-vii)	2(h)(ii-vii)	Public participation undertaken

Although discussing EIAs under the 1997 EIA Regulations of the Environment Conservation Act (ECA) Act No. 73 of 1989, Sandham *et al.* (2005:52) stated that “many scoping reports take on the form of a ‘beefed-up’ scoping or a ‘mini-EIA’ ”. When discussing scoping under the 2006 NEMA EIA Regulations, Mbhele (2009:25) also mentions how scoping reports are ‘beefed up’ to cover some information that must also be included in the EIA report. A study of the current NEMA EIA Regulations also indicates that the ‘beefed up’ approach to scoping reports is still applied (Department of Environmental Affairs, 2018). From an international perspective and as discussed by IEMA (2011:4) referring to scoping in the United Kingdom, it is stated that “scoping reports are becoming too long, with examples now regularly including

contents that are more closely associated with the regulatory expectations of a complete Environmental Statement”.

The discussion above has presented the key details of the South African scoping process in terms of legislation as well as the extent of the compilation and, in turn, the submission of scoping reports. The next section will focus on elements that constitute effective scoping as set out in the literature.

2.3 Elements of effective scoping

Literature on scoping presents certain elements that could improve its effectiveness. The three key elements include: (1) the allocation of adequate time and resources; (2) the focus on significant issues; and (3) adequate public participation or stakeholder engagement (UNEP, 2002; Mulvihill, 2003; Snell and Cowell, 2006; Middle and Middle, 2010; Canter and Ross, 2014; Morrison-Saunders *et al.*, 2014; Thorpe, 2014; IAIA, 2018; Khan *et al.*, 2020). A discussion of each of these key elements follows.

2.3.1 Adequate time and resources

The importance of scoping, as stated in Chapter 1, underscores why it is essential that adequate time and resources are allocated to this task. According to Weaver *et al.* (cited by Department of Environmental Affairs and Tourism, 2002a:8) “in EIAs, rigorous scoping typically comprises 30% of the time, effort and cost”. Although sources such as Middle and Middle (2010) and the Environment Institute of Australia and New Zealand (undated) state that effective and efficient scoping arises as a result of the allocation of adequate time and resources, these sources do not expand on this further. IAIA (2018) and Middle and Middle (2010) mention that the adequate time and resources could be wasted if scoping includes unnecessary information.

Although the South African NEMA 2014 EIA Regulations do not specify timeframes for the compilation of scoping reports prior to the submission of the application form for environmental authorisation (Department of Environmental Affairs, 2018), it is clear that the requirements of the scoping process as already mentioned in Section 2.1 require adequate time and resources for the scoping process to contribute towards overall EIA effectiveness. The European Commission (2001) adds that in scoping, adequate time also extends to persons consulted

for the provision of opinions and information. While adequate time is important, Mulvihill (2003) mentions the need to do away with unnecessary time on scoping. Along the same line of thought as Mulvihill (2003), one of the consultants interviewed in a study by Hansen and Wood (2016:7) stated how “it takes longer to discuss the scope of an assessment than to simply carry out the assessment”.

Specific to resources, which include human and financial, inadequate resources can affect scoping effectiveness (Wood *et al.*, 2006). These resources include human resources which are involved in the scoping process and which are not only limited to consultants but also include authorities (*ibid*). The Institute for Environmental Management and Assessment (IEMA) (2011:47) discusses how a lack of resources, particularly for “consenting authorities and statutory environmental bodies” contributes to ineffective scoping. The resources required for scoping also include finances (Retief and Chabalala, 2009; NDZL, undated). Specific to financial resources and while covering the broader EIA process Middle and Middle (2010) discuss how the critique against the length as well as the cost of an EIA is ongoing. Regardless of this, NDZL (undated: n.p) mentions that EIA costs are typically below one percent (1%) of the overall cost of a large project and “is a relatively small price to pay to prevent costly unforeseen problems, to promote development that can be sustained, to help prevent potentially ruinous environmental catastrophes, and to obtain approval and acceptance”.

2.3.2 Focus on significant issues by narrowing the scope

In Chapter 1, the purpose of scoping was stated as to identify possible key issues or impacts that must be addressed during the EIA phase (Environment Agency, 2002; UNEP, 2002; Jalava *et al.*, 2010; IAIA, 2018). This identification serves to narrow (i.e., reduce) the scope (i.e., scale or extent) of the EIA phase so that unimportant issues or impacts are not covered in the EIA phase.

The aim of narrowing the scope is often stated as the reduction in large volumes of EIA reports and in turn reducing the time and resources spent on undertaking the assessments. Authors such as Sadler (1996), Wood *et al.* (2006), Middle and Middle (2010), Canter and Ross (2014), and Borioni *et al.* (2017) highlight how the large volumes cover information that is unnecessary. While these authors as well as numerous others such as the Department of Environmental Affairs and Tourism (2002a), UNEP (2002), Snell and Cowell (2006) and Morrison-Saunders *et al.* (2014) advocate for the narrowing of the scope, Hansen and Wood (2016) criticise this generally accepted and adopted view. Hansen and Wood (2016:2) term

this as the “received view” of scoping stating that “the received view equates narrowing the focus of EIA and the subsequent Environmental Statement (ES) report as synonymous with effective scoping”. Hansen and Wood (2016) question aspects such as the necessity or even relevance of scoping and how benefits of broadening a scope allows for inclusion of elements that are important to stakeholders and which may assist in obtaining an authorisation. The views of some of the consultants in the study by Hansen and Wood (2016) are that broadening the scope instead of narrowing it aids in risk aversion and the avoidance of additional information by authorities. The argument is supported by IAIA (2018) in which the importance of risk assessment in scoping is highlighted due to the inherent uncertainty of the EA process. Sadler (1996) also discussed the matter of uncertainty by stating that regardless of the how well scoping is undertaken, not all potential issues will be addressed.

In a study by Snell and Cowell (2006) where they investigated the possible balance between precaution and efficiency, one of the consultants interviewed highlighted the danger associated with narrowing the focus of the EA and how an aggrieved party can question the reasons behind a consultant considering some issues as insignificant. In the same study, another consultant highlighted the challenge of narrowing the focus during the scoping phase which occurs at an early stage of an EA. In support of the above views, the South African Legislation in the NEMA 2(4)(a)(vii) promotes risk aversion and caution (National Environmental Management Act, 1998). Hansen and Wood (2016:3) propose what they term the “ends-in-view” to address some of the shortcomings of the “received view” as the former aids in the realisation of the purpose of scoping. They further argue that it is the narrow focus of the ‘received view’ of scoping that has led to the negative perceptions of EIA.

Regardless of the criticisms against the narrowing or the widening of issues, Mulvihill (2003) states that it is neither the narrowing nor the widening of the scope that is of importance but rather it is about scoping aiding in attaining the overall objectives of an EIA.

2.3.3 Adequate public participation or stakeholder engagement

UNEP (2002) and IEMA (2011) mention that within the broader EIA process, initial engagement with key stakeholders often occurs during the scoping phase. UNEP (2002), Hasan *et al.* (2018) and IAIA (2018) highlight not only the importance of the early engagement but add that these stakeholders contribute towards the identification of important issues on the proposed project. The Department of Environmental Affairs and Tourism (2002b:31) defines the public as “ordinary citizens who have diverse cultural, educational, political and socio-economic characteristics”. Chapter 6 of the South African NEMA EIA Regulations is

focused on public participation which must be undertaken for both the BA and phases of the scoping and EIA process. In order to meet the objectives of the scoping process, Appendix 2 of these regulations begin by mentioning how these objectives can be met through consultation (Department of Environmental Affairs, 2018).

Authors such as UNEP (2002), Wood *et al.* (2006) and IEMA (2011) mention that the engagement with stakeholders serves to maintain openness in the EIA and acceptance of the proposed project. This is important as some EAP consultants undertake scoping in the absence of stakeholder engagement resulting in ineffective scoping (Khan *et al.*, 2020). However, “in best-practice scoping all stakeholders (including the public) should be identified and consultation with these groups should take place in order to identify the key issues early in the process, as well as the opportunities, constraints and information needs for an effective EIA” (sic) (Wood *et al.*, 2006:234). Hansen and Wood (2016:4) add that “more open and participative scoping deliberations may enhance opportunities to capture local environmental knowledge and can help to address stakeholder concerns”.

Despite the benefits of public participation during the scoping phase, some authors outline the concerns and problems that can arise as a result of scoping phase public participation. In a study by Snell and Cowell (2006), some of the issues they raise about the involvement of the public during the scoping phase is that as a result of the communication of conceptual information, this can potentially cause confusion and delays in the project as answers to some questions are often not available. The issue of delays and the element of a risk of high expenses in the scoping process due to the open consultation is also presented by Wood *et al.* (2006). According to Jones (cited by Wood *et al.*, 2006:224) scoping also presents areas of conflicts between various role players. While the public and authorities aim to obtain maximum information, the client is focused on cost and time reductions, the consultant aims to undertake as much work as possible during the scoping (Wood *et al.*, 2006).

Having presented literature on key elements of effective scoping as: (1) the allocation of adequate time and resources; (2) the focus on significant issues; and (3) adequate public participation or stakeholder engagement, the next section of this literature review will discuss EIA effectiveness categories that can also be applied in scoping.

2.4 EIA effectiveness categories applicable to scoping

Loomis and Dziedzic (2018) state how effectiveness in EIA covers all steps inclusive of scoping. One of the earliest and key pieces of literature on EIA effectiveness is the

'International Effectiveness Study' by Sadler (1996). In this study, three categories of effectiveness were identified as *procedural*, *substantive* and *transactive*. These three categories together allow for the testing of effectiveness under what is termed the "effectiveness triangle" (Sadler, 1996:40). Other literature discussing and further developing these categories include Baker and McLelland (2003), Chanchitpricha and Bond (2013), Gallardo and Bond (2011), Bond and Morrison-Saunders (2013), Veronez and Montaña (2015) as well as Runhaar *et al.* (2019). In addition to the above-mentioned three categories of effectiveness, authors such as Baker and McLelland (2003), Chanchitpricha and Bond (2013), Gallardo and Bond (2011) as well as Loomis and Dziedzic (2018) add *normative* effectiveness as a fourth category. These categories of EIA effectiveness and their definitions as covered in the above-mentioned literature are as follows:

- *Procedural effectiveness*: the degree to which the EIA corresponds with set procedures, provisions, practices and principles based on legislation and other measures;
- *Substantive effectiveness*: the degree to which the EIA meets its aims, goals, and objectives;
- *Transactive effectiveness*: the degree to which the EIA meets its aims, goals, and objectives within the least time and cost; and
- *Normative effectiveness*: the degree to which the purposes of legislation, policies are attained in an EIA - e.g. achieving sustainable development.

Baker and McLelland (2003) summarise the first three categories of effectiveness as *Procedural* pertaining to practice, *substantive* to performance, *transactive* about proficiency and *normative* about purpose. In a discussion about the *substantive* and *transactive* effectiveness, Theophilou *et al.* (2010:36) mention how these categories are about asking the questions "does it (EIA) achieve its goals" and "is it (EIA) cost efficient", respectively.

It was noted by authors such as Cashmore *et al.* (2004), Bond and Morrison-Saunders (2013), Veronez and Montano (2015), Loomis and Dziedzic (2018) as well as Runhaar *et al.* (2019) that the *procedural* criterion is the most assessed. According to Theophilou *et al.* (2010), Veronez and Montano (2015) and Loomis and Dziedzic (2018) the criteria of effectiveness that have minimal research are *substantive* and *transactive*. To these, Veronez and Montano (2015) state that *normative effectiveness* is also least assessed.

The application of the categories is available in the literature presented in the following examples. Under *procedural effectiveness* and as discussed by Polido and Ramos (2015), although covering Strategic Environmental Assessment (SEA), the authors were of the opinion that *procedural effectiveness* is the point of departure for effectiveness in the said process. Polido and Ramos (2015) utilised procedural effectiveness to assess the scoping phase of 20 SEA reports compiled in Portugal. The results of the study indicated that although there was general compliance to legislative requirements of SEA, public participation was inadequately conducted and evidence to indicate the early commencement of scoping was absent. Baker and McLelland (2003) also discussed how *procedural effectiveness* can be used to evaluate a Public Participation Process (PPP) based on public participation policies by checking elements such as the use of suitable methods for the consultation.

In Theophilou *et al.* (2010), effectiveness (*substantive* and *transactive*) was applied in the assessment of SEAs within the European Union Structural Funds. In this study, it emerged that the levels of effectiveness are based on the expectations of role players, that *substantive* and *transactive* effectiveness are interrelated and that “transactive effectiveness may be dependent on substantive effectiveness” (ibid:143).

Baker and McLelland (2003) assessed the *procedural*, *substantive* and *transactive* effectiveness of public participation of indigenous persons in Canada based on three case studies on mining. The findings of their study indicated that efficiency in public participation was not met in any of the case studies. In a study by Runhaar *et al.* (2019:119) that focused on *substantive* effectiveness of environmental assessment, it emerged that EA is mainly used as means to comply with legislative requirements “but less as an instrument to optimise the environmental performance of projects and plans”.

Specific to *transactive* effectiveness and applying this to a public participation policy, Baker and McLelland (2003), are of the opinion that transactiveness is deemed to have been achieved if public participation is undertaken in such a manner that time and money or other resources are not used carelessly. The above-mentioned public participation policy was also utilised by Baker and McLelland (2003) in assessing *substantive effectiveness*. In their study, they indicated that if the policy’s objectives include aspects such as public representation and education, then the policy will have achieved substantiveness.

Specific to the application of *normative effectiveness* in EIA, the definition of this category of effectiveness must be recalled as the degree to which the purposes of legislation are attained

in EIA through the achievement of goals such as sustainable development (Baker and McLelland, 2003; Gallardo and Bond, 2011; Chanchitpricha and Bond, 2013; Loomis and Dziedzic, 2018). Shakil (2015) discusses the application of *normative effectiveness* by, in turn, referring to Alshuwaikhat *et al.* (2007). While not explicitly using the term '*normative effectiveness*', Alshuwaikhat *et al.* (2007) references the Bangladesh Environment Conservation Rules (1997) which enforce the Bangladesh Environment Conservation Act No. 1 of 1995. This Act is a piece of legislation which aims to "provide for conservation of the environment, improvement of environmental standards and control and mitigation of environmental pollution" and processes such that the EIA caters towards the realisation of this aim (The Bangladesh Environment Conservation Act, 1995; The Environment Conservation Rules, 1997). It was through the Bangladesh Environment Conservation Rules that guidelines for the undertaking of Bangladesh's EAs in water management projects were compiled (WARPO, 2005; Alshuwaikhat *et al.*, 2007). This example from Bangladesh clearly demonstrates the application of *normative effectiveness* in EIA.

Having discussed the four categories of EIA effectiveness applicable to scoping, the methods for the identifying impacts during the scoping phase will be discussed next.

2.5 Methods for the identification of impacts for assessment

One of the aims of scoping is to identify impacts that must be assessed during the EIA phase. This identification of impacts links to Research Objective 1. It is therefore crucial that methods of identifying these impacts are explored and discussed (Sadler, 1996; UNEP, 2002; Fischer and Jones, 2008; Thorpe, 2014; Department of Environmental Affairs, 2018). "Good scoping is essential for effective impact assessment" (Canter and Ross, 2014:21) and involves impact identification (Sadler, 1996; UNEP, 2002; Fischer and Jones, 2008; Thorpe, 2014; Department of Environmental Affairs, 2018). By deduction, the methods used to identify these impacts will affect effectiveness. In a study conducted by Wood *et al.* (2006) and specifically pertaining to EAP consultants and their approaches, perspectives and constraints in scoping, it emerged that professional judgement and experience is the most frequently used method by the EAP consultants (96%) (see Table 2-3 on the following page). The preference for these methods was also noted by Snell and Cowell (2006) as well as Hansen and Wood (2016). The former stated that because scoping is undertaken at an early stage of an EIA, the use of professional judgement is justifiable as little information is available during the scoping phase.

Table 2-3: Methods used by different practitioner groups to identify impacts (Wood *et al.* 2006:230).

Approach	LPA % (N=78)	Consultant % (N=98)	Statutory consultees % (N=28)
Consultation within own organisation	80	83	86
Consultation between different statutory and non-statutory consultees	80	91	61
Community consultation	15	34	4
Followed guidance from plans or policies	18	70	43
Legal regulations and thresholds	63	76	39
Consulted other examples of similar projects	26	57	25
Used professional judgement and experience	91	96	93
Used a checklist to identify possible impacts	30	50	32
Used other formal technique (please specify)	1	15	4
Based decision on an appraisal of the likely controversy of the proposal	19	15	4
Other	5	8	4

^a This question was multi-response therefore the % figure for each approach is a proportion of the total number of respondents from each organisation. Figures are rounded to nearest whole number.

The use of professional judgement and experience by consultants is followed by consultation with statutory and non-statutory consultees (91%), consultation with the EAP consultants' own organisation (83%), legislative requirements (76%), direction from plans and policies (70%), and lastly the identification of impacts through reference to similar projects (57%) (Wood *et al.* 2006). Specific to consultants making reference to similar projects as one of the impact identification methods discussed above, Snell and Cowell (2006:371) quote an EAP who took part in their study and stated that "most project managers will, however subconsciously, draw upon their experiences of similar projects and lessons learnt in order to define the scope of a later EIA". Snell and Cowell (2006:271) however felt that "this still tends to reinforce a checklist approach". While, Canter and Sadler (1997:48) also noted that case studies can be used in impact identification, they add that professional judgement must be utilised in the use of case studies and that the use of case studies as well as professional judgement are examples of what they term "simple techniques".

It important to note that while consultation with the community is important and forms one of the elements of scoping as discussed earlier in Section 2.3 of this chapter, this method is one of the least used by consultants (34%) and is used even less than checklists (50%) (Wood *et al.* 2006). The use of checklists is also noted by Environmental Agency (2002). Specific to the preference for checklists, in a study by Hansen and Wood (2016), a consultant mentioned how

this method is favoured over stakeholder consultation because of the ease of use, speedy nature and ease of justification. Canter and Sadler (1997) present two other methods for the identification of impacts. These include, indices and experimental methods as well as mathematical models. The latter is dependent on the availability of quantitative data and is one of the more complex approaches.

2.6 Importance and perceptions of EAP consultants in EIA

Environmental Assessment Practitioners (EAPs) are often consulted by developers to undertake the technical work necessary to assess and mitigate the potential impacts of a proposal (e.g. baseline studies, environmental impact statement (EIS) preparation, response to public submissions, and so on) (Morrison-Saunders and Bailey, 2009). The views of EAP consultants are key as they are one of the main parties who engage in the EIA process (as discussed in Chapter 1) (Snell and Cowell, 2006; Kågström and Richardson, 2015; Kågström, 2016). The discussion on the importance and perceptions of EAP consultants in EIA is important for this study as it is aimed at establishing the views of the EAP consultants while also bearing in mind that these views aid in achieving Research Objective 2 which is to determine the perceptions of South African EAP consultants towards effective EIA scoping.

A broad review of relevant literature presents the following key reasons for the importance of EAP consultants in the EIA process and, in turn, scoping:

- 1) The majority of the work in an EIA is undertaken by EAPs who also play a key role in EIA practice (Kågström; 2016; Duarte *et al.*, 2017);
- 2) EAPs possess the greatest knowledge, skills and experience in EIA (Kågström, 2016). Specific to EAPs' experience, Hansen and Wood (2016) add that it is through the undertaking of EIAs that EAPs can take part in discussions around concepts such as effectiveness;
- 3) Have a great impact on the quality of broad EIA as well as scoping (Kågström, 2016; Hansen and Wood, 2016); and
- 4) As one of the parties that effect environmental policies, the views of EAPs are important as they can aid in the transformation of policies (Morrison-Saunders and Bailey, 2009; Kågström and Richardson, 2015; Duarte *et al.*, 2017).

To this list, Zhang *et al.* (2018) introduce the concept of *discretion* that is exercised by EAPs in all steps and in all choices of the EIA based on elements such as legislation, expertise, professional judgement, preferences, timing, and resources. However, no specific mention of discretion in scoping is made. Regardless of this, but specific to legislation which governs EIA

inclusive of scoping, Zhang *et al.* (2018:29) state that “no matter how clear the legislations and guidelines are, it inevitably leaves spaces for practitioners to interpret the wording and abstract concepts of the legal requirements and adapt them to specific context in each case” (sic).

Specific to the link between EAP consultants and effectiveness, and bearing in mind the key roles of EAP practitioners in the scoping process as discussed above, Duarte (2017) states that it is important for EAP practitioners to apply their own experiences in undertaking the EIA process to enhance effectiveness as well as efficiency of the process. If this does not occur, external parties may undertake the restructuring of the process resulting in amendments that are not well received by EAP practitioners (*ibid*).

While perceptions may differ from reality, they are of value because they provide an understanding of opinions (Roos *et al.*, 2020). The perceptions of EAP consultants are shaped by elements such as (1) *educational background* (Morgan *et al.*, 2012; Kågström, 2016), (2) *experience* (Runhaar *et al.*, 2019), as well as (3) *values* (Wood *et al.*, 2006), and (4) *expectations* (Morrison-Saunders and Bailey, 2009). Each of these will be discussed below.

2.6.1 Educational background of EAPs

In a study by Morgan *et al.* (2012), it was established that EAPs originate from various professional backgrounds that in addition to natural scientists include surveyors, planners and engineers. In addition, environmental and soil scientists, ecologists, economists, cultural geographers and landscape architects are also highlighted (Kågström, 2016). Bearing in mind the diverse educational backgrounds of EAP consultants, it is inevitable that the practice and perceptions of EIA will differ (Morgan *et al.*, 2012). Morgan *et al.* (2012) state that background influences the professionals’ perception of the nature, function, steps of EIA, and what makes up adequate EIA. Specific to scoping, they highlighted how from a list of 16 most important elements in conducting an assessment of environmental effects, scoping, while key to the EIA process, is in eighth place for surveyors and planners, but eleventh for engineers and natural scientists (Morgan *et al.*, 2012). It is important to note that in this list, first place referred to the most important issue and sixteenth as the least important. The importance of the background of professionals and the influence of this in the undertaking of EIA is also noted by Kågström and Richardson (2015) and Kågström (2016).

2.6.2 Experience of EAPs

“Practitioners learn through experience and through interaction with other parties during scoping” (Hansen and Wood 2016:4). Studies by Duarte *et al.*, (2017), Hansen and Wood (2016) as well as Kågström (2016) indicate that the experience of EAPs is not only limited to the period of work but also the number and type of projects that EAPs have been involved in. With regards to the latter, the method utilised by large numbers of EAPs in undertaking Environmental Assessments (EAs) is to apply experience gained from previous projects of a similar nature (Morgan *et al.*, 2012). In a study by Duarte *et al.*, (2017) and which was not limited to consultants only, but also included proponents, Environmental Agencies (which are responsible for the issuing of authorisations), Civil Society Organizations, Research Institutions and Public Ministry (who are responsible for defending public rights), it emerged that the largest number of participants who had negative opinions about the EIA process were those in their mid-careers, classified as EAPs with 5-10 years’ experience and who had been involved in 4-15 projects. Those with positive opinions were those who had no experience or who had worked on fewer than three projects (Duarte *et al.*, 2017). In contrast to the above and specific to EAP consultants, in a study by Runhaar in Runhaar *et al.* (2019:115), participants with positive perceptions of EAs were those with 10 or more years’ experience. This study did not, however, make mention of the number of reports compiled by the participants.

2.6.3 Values of EAPs

Regarding EAP consultants’ values, Wood *et al.* (2006) mention that the EIA process is not an ideal process which is devoid of not only values but other elements such as objectivity and rationality. Zhang *et al.* (2018:25) confirm this by stating that “decisions made upon a subjective and value-laden basis are found in practice”. Some of the examples of values that are covered in the literature include personal values (Morrison-Saunders and Bailey, 2009) and economic values (Muthoora and Fischer, 2019). These values impact decisions made by an EAP “who wishes to maximise work” by undertaking a thorough scoping process in contrast to a client who would like the process to be completed in the shortest time possible and with minimal costs (Wood *et al.*, 2006:224). Wood *et al.* (2006) state that values have an influence on designs and implementation measures that are environmentally friendly.

2.6.4 Expectations of EAPs

Participants in an EIA process have varying expectations from each other that can result in disagreements (Wood *et al.*, 2006). An example of this was obtained from a Western Australian study conducted by Morrison-Saunders and Bailey (2009) on the function of the consultant and regulator relationship and the contribution of this to effective EIA. It emerged that consultants, as well as other parties involved in the EIA process, had expectations regarding the regulators' undertaking of their EIA process duties. Another expectation arising from the same study was where the consultants' and the independent Environmental Protection Agency's (EPA) understanding on what constitutes "quality science and environmental management" differed (Morrison-Saunders and Bailey, 2009:290).

2.7 Conclusion

This chapter has presented various literature available to address the study aim and Research Objective 1 about the role and importance of scoping in the EIA process, particularly pertaining to the effectiveness of scoping. By first outlining the EIA scoping requirements for the South African setting, it is clear that the country has a strong legislative background to scoping. This is coupled by the large number of Competent Authorities (CAs) who have processed numerous EIAs over the years. Subsequent to this discussion, literature on the elements of effective scoping was presented and was followed by a discussion on the four categories of effectiveness and their associated applications. As impact identification is one of the key aims of scoping, literature on methods used by EAP consultants to identify impacts was also covered. Noting that the study is aimed at obtaining perceptions of EAPs on scoping, the literature review also covered the importance and perceptions of EAPs in the broader EIA process by putting forward elements that influence these perceptions. In addition to presenting literature relevant to the study, this chapter has also aided in the determination of a suitable research methodology which will be discussed next in Chapter 3.

CHAPTER 3: METHODOLOGY

3.1 Introduction

In the preceding chapter (Chapter 2) the literature reviewed for the purpose of this study was covered. Chapter 3 addresses the research methodology that was followed to carry out this study and contributes to reaching the study aim to determine the perceptions of South African Environmental Assessment Practitioner (EAP) consultants on the effectiveness of Environmental Impact Assessment (EIA) scoping. In reaching this aim, the methodology covered a literature review and an empirical investigation. Each of these will be discussed and will be followed by the ethical considerations of the study, the methodological limitations and the summary of this chapter.

3.2 Literature Review

In order to establish the existing body of knowledge regarding the study on the perceptions of EAPs on EIA scoping in the South African context, a systematic literature review was undertaken for the study. This form of literature is aimed at identifying, evaluating and reporting on literature about a specific and structured research question, topic, problem, or hypothesis based on specific criteria (Arshed and Danson 2014; Snyder, 2019; Tawfik *et al.*, 2019; Xiao and Watson, 2019). The systematic review differs from other types of literature such as the *scoping*, *traditional* or *narrative literature* review which provides a broad overview on a topic, or the *meta-analysis literature* review which involves an analysis of specific literature utilising statistical methods (Arshed and Danson 2014; Munn *et al.*, 2019).

The systematic literature review process as discussed by Liberati *et al.* (2009), Kilubi (2016), Snyder *et al.* (2016), Tawfik *et al.* (2019), and Xiao and Watson (2019), comprises of three main stages. These are, (1) to plan for the review; (2) to undertake the review; and (3) to report on the review. Each of these will be discussed in the context of this research study. When planning for the review as the first step, there was an identification of relevant keywords based on the study title and the objectives in the English language only. In undertaking the review as a second stage of the systematic review, there was a search for literature based on the words identified in the first step. An eligibility criteria was applied to the literature based on its adequacy to address the research problem and objectives. Literature deemed eligible was retained and used in the review whereas ineligible literature was excluded from the review. Efforts to source literature published in the last five years and inclusive of the South African

context were also made. In sourcing the literature, the North-West University (NWU) Library EBSCO Discovery Service (EDS) was utilised as a first step in order to provide access to journal articles and books (both electronic and hardcopy versions) available from the institution. In addition to this, the NWU Institutional Repository (Boloka) was consulted to obtain copies of electronic theses and dissertations (ETD). Other South African theses and dissertations were also consulted through the National ETD Portal. Further to the above, Google Scholar was consulted to acquire peer reviewed literature in the form of books and journal articles. The last method used in the search for literature was through the Google search engine with the aim of obtaining literature published by government and agencies such as the United Nations Environment Programme (UNEP) and the European Commission. As part of the second stage of the literature review and subsequent to the acquisition of the literature, the relevance of the sources was first assessed through the title, then the Abstract (where applicable) and lastly through the contents of the remainder of the document as per Xiao and Watson (2019). The last stage of the systematic review undertaken for the study was the analysis and integration of the information obtained and the compilation of these under the literature presented in Chapter 2.

3.3 Empirical investigation

The empirical investigation's approach and design will be presented followed by a discussion of the research sampling, the data collection methods as well as the data analysis method that was employed. The aim of the empirical investigation was to address Research Objective 2 - to determine the perceptions of South African EAP consultants towards effective EIA scoping as well as Research Objective 3 - the development of criteria against which to evaluate the effectiveness of scoping.

3.3.1 Research approach

This research study used a mixed methods methodology. Mixed methods are undertaken within one study and entails the integration or combination of quantitative and qualitative research methods through data collection (consisting of images, text, and narratives for qualitative data and numbers for quantitative data), analysis, interpretations and discussions at a certain point of a research process (Johnson and Onwuegbuzie, 2004; Maree, 2007; Brannen, 2009; Creswell, 2014; Maree, 2016; Kabir, 2016; Schoonenboom and Johnson, 2017). In addition to the combination of quantitative and qualitative methods, Johnson and

Onwuegbuzie (2004:17) mention that mixed methods also include combinations of “research techniques”, “approaches, concepts or language” in one study.

There are four benefits behind the choice of using a mixed methods approach for this research. The first is that this approach provides a deeper comprehension of the question or problem under investigation (Maree, 2007; Hesse-Biber, 2010). The second benefit is that mixed methods research approaches also serve to capitalise on the strengths of each of the individual methods and reduce the weaknesses of each (Creswell, 2014). Third, mixed methods aid with obtaining clarity or elaboration based on the responses to closed-ended questions (Maree, 2007; Hesse-Biber, 2010). Hesse-Biber (2010:4) discusses this benefit and terms it as “complementarity”. It can be argued that this ‘complementarity’ is evident through the statements by Johnson and Onwuegbuzie (2004:17) who discuss the strengths of mixed methods research by noting that “words, pictures, and narrative can be used to add meaning to numbers” and “numbers can be used to add precision to words, pictures and narrative”. Johnson and Onwuegbuzie (2004:18) also summarise the advantages of mixed methods research well by stating that “many research questions and combinations of questions are best and most fully answered through mixed research solutions”. The fourth benefit of the mixed method approach for this research is that it allowed for the voices of EAPs to be heard in line with Research Objective 2 - to determine the perceptions of South African EAP consultants towards effective EIA scoping.

Having presented the selected mixed method approach as well as its associated benefits for this research, the type of mixed method design used in this research will be discussed next.

3.3.1.1 Mixed methods design

There are four mixed method research designs which include: the *explanatory design*, *exploratory design*, the *embedded design* and the *triangulation design* (Maree, 2007). This research study used the *triangulation design*. Triangulation entails the simultaneous collection and analysis of both qualitative and quantitative data and then the juxtaposition and interpreting of both results (Maree, 2007; Creswell, 2014). Creswell (2014:10) terms the *triangulation design* as “convergent parallel mixed methods design”. The advantages of this simultaneous method is that it saves time and results in conclusions that are well-substantiated due to juxtaposing and indicating differences in the research findings (Maree, 2007). Figure 3-1 below is a graphical representation of the *triangulation design* and clearly indicates the simultaneous nature of the qualitative and quantitative methods and how these converge in the results phase.

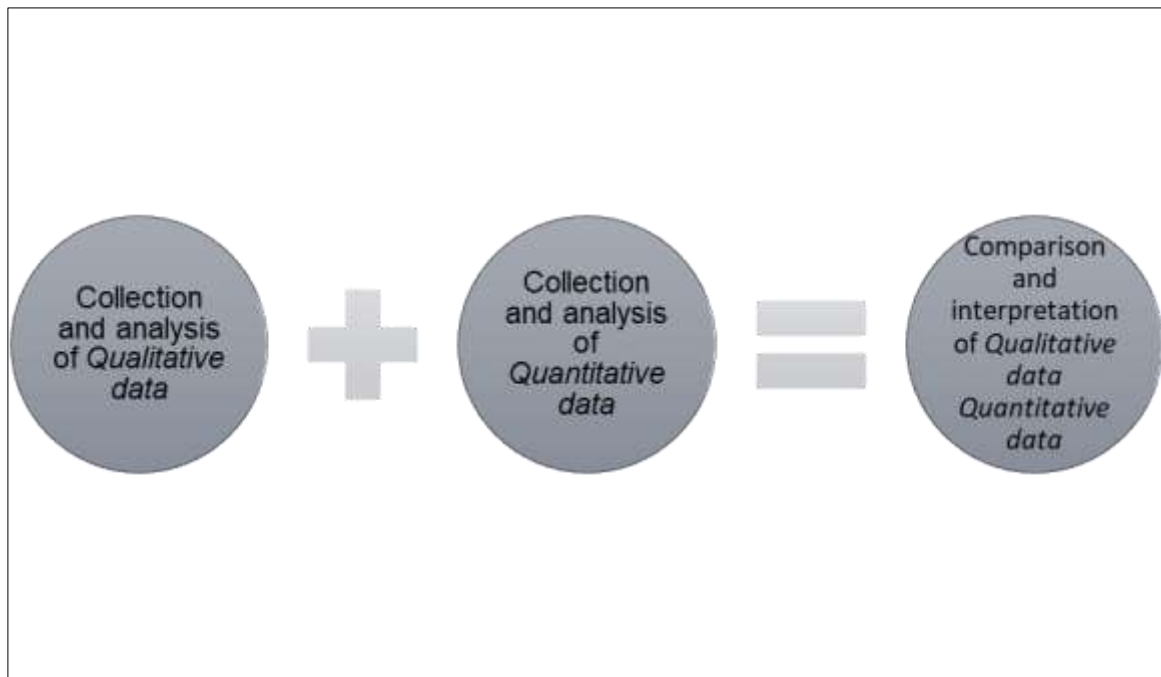


Figure 3-1: Triangulation mixed methods design.

3.3.2 Research sampling

This study utilised two sampling methods, i.e., purposive and random sampling. Reinard (2006:32) defines purposive sampling which he also terms “known group sampling” as “collecting a sample composed of subjects selected deliberately (on purpose) by researchers, usually because they think certain characteristics are typical or representative of the population”. Additionally, random sampling was undertaken for EAPs whose details were available on the Environmental Assessment Practitioners Association of South Africa (EAPASA) website. Random sampling refers to a scenario in which the likelihood of selection in a research study is the same for all persons within a specific study group (Creswell, 2014). In the case of this research study, the study group was EAPs who were registered with EAPASA and whose contact details were available on the EAPASA website in February 2020, when 66 EAPs were initially invited to take part in the study. Hesse-Biber (2010:n.p) terms this type of a random sample “simple random sample (with or without replacement)”.

In addition to the details of the EAPs obtained from the EAPASA website, a snowball sampling approach was applied based on the details received from EAPs. Snowball sampling is defined by Reinard (2006:33) as “samples gathered from referrals from participants in the sample”. The use of snowball sampling was also applied by Hansen and Wood (2006) in a

study on the pragmatist interpretation of effectiveness in scoping as well as Khan *et al.* (2020) in the investigation of challenges of EIA authorities in the EIA process and the pursuit of an effective process. In addition to the above two methods of participant identification, the researcher also utilised their professional contacts. Although 62 of the 66 invited EAPs initially confirmed their willingness to take part in the study, at the end only 37 EAPs participated in this study, making this the final sample size (n=37). Data was collected through a questionnaire which is attached as Annexure A at the end of this dissertation. The questionnaire was sent to EAPs by email only. This questionnaire was circulated in July 2020 and EAPs were given a period of 15 calendar days to complete the questionnaire. Reminders for submission were sent to EAPs between the seventh and tenth day after the initial request for the completion of the questionnaire. This follow-up approach was in line with that suggested by Fowler (2009) as a means of decreasing the nonresponse to a questionnaire. In the absence of follow-up responses of below 50% can occur (Heberlein & Baumgartner, cited by Fowler, 2009:74). It is important to note that this survey was piloted before distribution to study participants. Having presented the research sampling, the next section will cover the data collection method adopted in this research study.

3.3.3 Data collection

According to Fowler (2009:68) “one of the most far-reaching decisions a researcher must make is the way in which the data will be collected”. Data collection must be methodical and focus on variables of interest to reach the required research outcomes (Kabir, 2016). The data collection method selected for this research study was a structured survey questionnaire that was sent to participating South African EAPs by email for self-administration. It must be highlighted that primary and not secondary data was collected for this research study as it is “more reliable, authentic and objective” than secondary data (Kabir, 2016:204). It is also important to note that specific information on the name of the highest specific qualification held by each participant was acquired through follow up e-mails as this information was not initially deemed important by the researcher, and was not included in the questionnaire, but was later deemed so. The subsections below will outline the survey design, the administration of the survey and choice of the administration method as well as presenting the structure of the questionnaire as part of the data collection method.

3.3.3.1 Survey design

The survey design adopted in this research was aimed at a study of a population sample. The results of a study were used to deduce certain opinions about the broader study population as discussed by Creswell (2014). In addition to the above, surveys particularly with the use of questionnaires (as opposed to other tools such as observations, experiments, interviews, etc.) allow for data collection with minimal limitations of time or setting in addition to low expenses (Fowler, 2009; Bezuidenhout *et al.*, 2014; Kabir, 2016). The selection behind the structured instead of a semi-structured or unstructured questionnaire was aimed at collecting only specific data that was deemed sufficient to reach the three Research Objectives set out in Chapter 1.

3.3.3.2 Administrating the survey and choice of administration method

The choice behind self-administration for this study was because this caters for long or complicated questions and the associated required time while also catering for sensitive data collection (Fowler, 2009; Bezuidenhout *et al.*, 2014). Furthermore, while one of the disadvantages of self-administered surveys is that the respondents need to be able to read and write well (Fowler, 2009), this did not affect the study as the researcher was confident that the EAP participants had these abilities. Another disadvantage of self-administered survey questionnaires is that the researcher cannot directly control the quality of responses (Fowler, 2009). This was however overcome by the researcher's follow up emails with EAPs whose responses necessitated clarity.

Among the four types of research survey types or data collection methods, i.e., *mail surveys*, *telephone surveys*, *personal interviews* and *group administration* (Fowler, 2009; Bezuidenhout *et al.* 2014), a *mail survey* was deemed suitable for this study. The reasons behind this decision will be detailed below.

The selected *mail survey* possesses advantages such as requiring limited human resources and affordability (Bezuidenhout *et al.* 2014). It is important to highlight that a *mail survey* is not limited only to hardcopies, but also email surveys with an attached questionnaire or link to a website where the survey can be completed (*ibid*). The distribution of the research questionnaires for this research as well as the receipt of the responses to the questionnaires were by email. Furthermore, a *mail survey* caters for self-administered surveys (Fowler, 2009) – where respondents can answer the questions in their own time. Although some of the disadvantages of this type of survey can be illiteracy and the style of language (Bezuidenhout *et al.* 2014), these were not a barrier in this research because the study sample comprised of

professionals who were neither illiterate nor had challenges with the type of language used in the questionnaire. Another disadvantage of the use of *mail surveys*, which was evident in this research, was a limited response rate which Bezuidenhout *et al.*, (2014) attribute to most persons' dislike for the completion of questionnaires. This may have contributed to the participation of 37 EAPs instead of 62 EAPs invited to take part in the study as discussed in Section 3.3.2. This response rate did not, however, affect the credibility of this research study.

3.3.3.3 Structure of the questionnaire

The self-administered structured survey questionnaires consisted of both closed- and open-ended questions. The Likert Scale was used to capture the answers to some of the closed-ended questions posed (Morrison-Saunders and Bailey, 2009; Maree and Pietersen, 2016). Where responses were incomplete or where the researcher required clarity on the responses, follow-up email communication was also utilised. There were no other communication methods used between the researcher and the participating EAP consultants. An overview of the questionnaire which is attached as Annexure A is also summarized and presented in Table 3-1 below.

Table 3-1: Overview of survey questionnaire and contributing questions.

Questionnaire Sections	Contributing questions	
A: Background of EAP consultant	A1	What is your highest level of qualification? = A. <i>Certificate</i> ; B. <i>BSc/ BA</i> ; C. <i>MSc/MA</i> ; D. <i>PHD</i> ; E. <i>Other</i> .
	A2	Are you registered with any of the below professional registration bodies? = A. <i>Environmental Assessment Practitioners Association of South Africa (EAPASA)</i> ; B. <i>South African Council for Scientific Natural Professions (SACNASP)</i> ; C. <i>Other</i> ; D. <i>None</i> .
	A3	Are you a member of any environmental voluntary organisation e.g. International Association for Impact Assessment South Africa (IAIAsa), or Environmental Law Association (ELA)? = A. <i>Yes</i> ; B. <i>No</i> .
	A4	How many years of working experience do you have in EIA? = A. <i>1-5 years</i> ; B. <i>6-10 years</i> ; C. <i>11-15 years</i> ; D. <i>16 years and above</i> .
	A5	What is the number of Basic Assessment (BA) reports you have prepared in the last 10 years? = A. <i>1-5 reports</i> ; B. <i>6-10 reports</i> ; C. <i>10 reports and above</i> .
	A6	What is the number of scoping and EIA reports you have prepared in the last 10 years? = A. <i>1-5 reports</i> ; B. <i>6-10 reports</i> ; C. <i>10 reports and above</i> .
	A7	In which sectors have you undertaken scoping and EIAs? Select more than one where applicable = A. <i>Electricity (generation, transmission, etc.)</i> ; B. <i>Water (storage, bulk supply etc.)</i> ; C. <i>Sewerage (pipes, wastewater treatment facilities, etc.)</i> ; D. <i>Buildings (housing, offices, institutions, etc.)</i> ; E. <i>Roads and transportation</i> ; F. <i>Other</i> .
B: Impact identification	B1	Which methods do you use to identify impacts to be addressed in the EIA phase? = A. <i>Professional experience and judgement</i> ; B. <i>Input from other EAP consultants</i> ; C. <i>Input from Authorities</i> ; D.

Questionnaire Sections	Contributing questions	
		<i>Checklists, E. Input from Interested and Affected parties; F. Consultation of Reports on similar projects; G. Other.</i>
	B2	Do you apply different methods for impact identification for different projects based on a sector, (e.g. energy vs. housing), location (e.g. area with high environmental sensitivity vs. area with low environmental sensitivity) or other factors? Kindly elaborate on your answer.
C: EIA scoping effectiveness	C1	To what extent have you considered <i>Procedural effectiveness</i> (the degree to which the EIA corresponds with set procedures, provisions, practices, principles, etc. based on legislation and other measures) when undertaking scoping? = A. <i>Always</i> ; B. <i>Frequently</i> ; C. <i>Occasionally</i> ; D. <i>Seldom</i> ; E. <i>Never</i> .
	C2	To what extent have you considered <i>Substantive effectiveness</i> (the degree to which the EIA meets its aims, goals, objectives, etc.) when undertaking scoping? = A. <i>Always</i> ; B. <i>Frequently</i> ; C. <i>Occasionally</i> ; D. <i>Seldom</i> ; E. <i>Never</i> .
	C3	To what extent have you considered <i>Transactive effectiveness</i> (the degree to which the EIA meets its aims, goals, objectives within the least time and cost) when undertaking scoping? = A. <i>Always</i> ; B. <i>Frequently</i> ; C. <i>Occasionally</i> ; D. <i>Seldom</i> ; E. <i>Never</i> .
	C4	To what extent have you considered <i>Normative effectiveness</i> (the degree to which the purposes of legislation, policies, etc. are attained e.g. the achievement of sustainable development) when undertaking scoping? = A. <i>Always</i> ; B. <i>Frequently</i> ; C. <i>Occasionally</i> ; D. <i>Seldom</i> ; E. <i>Never</i> .
D. Public Participation	D1	In your opinion what is/are one most important criterion/criteria that interested and affected parties must meet in order to contribute to effective scoping?
	D2	To what extent do you believe is there any value in the public participation process during the scoping phase when only conceptual information is available and other important information such as Specialist findings are absent? = A. <i>Major value</i> ; B. <i>Moderate value</i> ; C. <i>Little value</i> ; E. <i>No value</i> .
E. General scoping process	E1	In your opinion as an EAP, is there any value in a distinct scoping process as part of the EIA in comparison to scoping in a BA where the scoping is integrated with the assessment phase? = A. <i>Yes</i> ; B. <i>Sometimes</i> ; C. <i>No</i> .
	E2	In your opinion, how can the South African EIA scoping process be improved?

As illustrated in Table 3-1 above, the questionnaire was structured according to five sections, comprising a total of 17 questions. The first section covered the *background of the EAP*. Information requested included the EAP's highest qualifications, working experience in years, professional registration and the number of scoping and EIA reports compiled (Questions A1–A7). The aim of this section of the questionnaire was to obtain a background on the EAPs as information of this nature will impact on the perceptions of the EAPs as per sections 2.6.1 and 2.6.2 of this dissertation. The second section on *impact identification* asked questions about the impact identification methods used by EAPs (Questions B1–B2). The questionnaire included impact identification methods of South African EAPs to allow for a comparison of these with what is covered in international literature as presented in section 2.5 of the literature review. The questions on impact identification link to Research Objective 1 on the role and importance of scoping in the EIA process. The third section of the questionnaire was about *EIA scoping effectiveness*. The EAPs' consideration of the four categories of effectiveness were asked (Questions C1–C4). It was important for EAPs to present this information as

Sadler (1996) mentions that the categories cater for the testing of effectiveness as discussed in section 2.4 under the literature review chapter. The provision of this information also contributed to Research Objectives 1 and 3. The fourth section focused on *public participation*. In this section, the questions were about the key criteria/criterion that interested and affected parties (I&APs) must meet to take part in scoping as well as EAP's views on the value of the Public Participation Process (PPP) in scoping when some project information is unavailable (Questions D1–D2). This section mainly contributed towards Objective 3 as adequate public participation is one of the elements of effective scoping as discussed under section 2.3.3 in the literature review chapter. The last section of the questionnaire was about the *general scoping process*. The questions posed were about EAPs' perceptions of the value of a distinct scoping process as well as their suggestions of how the South African scoping process can be improved (Questions E1–E2). The questions asked were largely to address Research Objective 2 while also contributing to Objective 3.

3.3.4 Data analysis

As discussed in Section 3.3.1, this research study employed a mixed methods research approach comprising the combination of quantitative and qualitative research methods. Hence, this approach, in turn, generated both quantitative and qualitative data that required analysis.

The quantitative data from closed-ended questions (all questions with the exception of Questions D1 and E2) was analysed using Microsoft Excel which also allowed for the generation of graphs as shown in Chapter 4. In undertaking the qualitative data analysis for the research and specific to the open-ended Question D1 ("In your opinion what is/are one most important criterion/criteria that interested and affected parties must meet in order to contribute to effective scoping?") and open-ended Question E2 ("In your opinion, how can the South African EIA scoping process be improved?") which are presented in Chapter 4, the data analysis process presented in Figure 3-2 was followed.

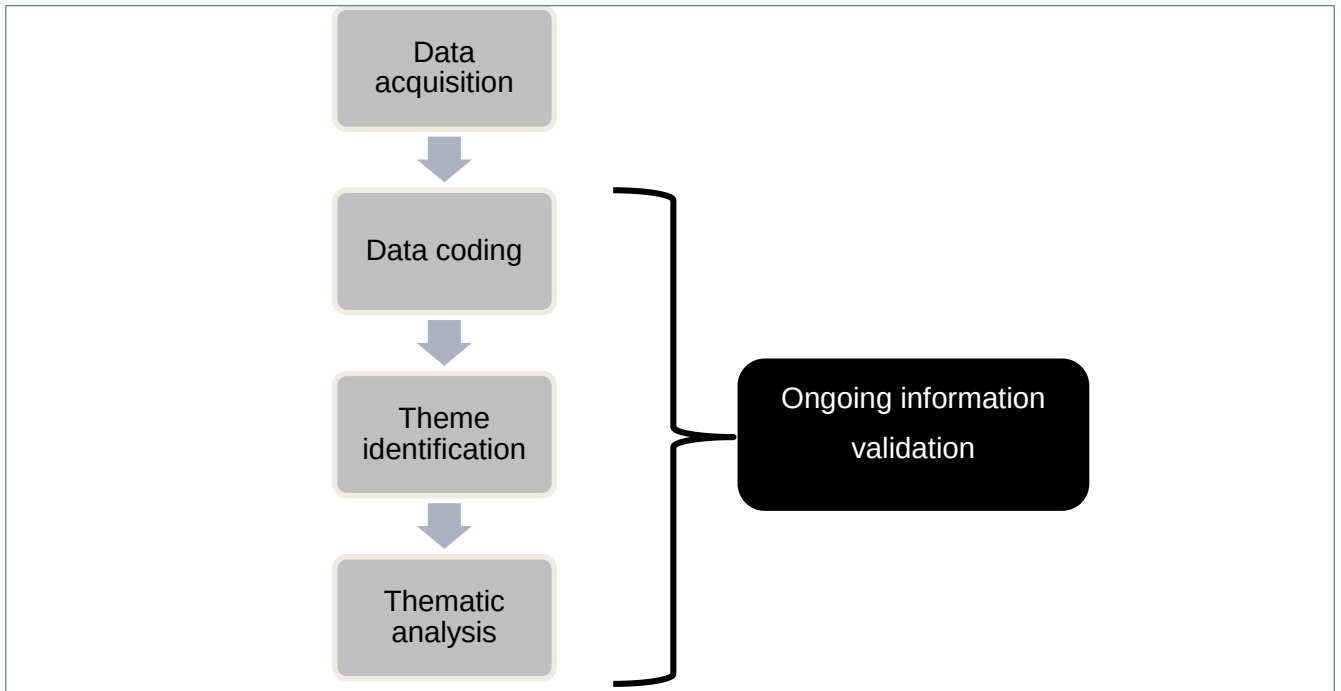


Figure 3-2: Data analysis in qualitative research.

In line with Figure 3-2 and based on the description of data analysis by Creswell (2014), subsequent to data acquisition (i.e., completed questionnaires in the case of this research), the data was captured into Microsoft Excel to align with each EAP whose name was captured in a specific row under each of the five sections and corresponding 17 questions in the questionnaire. The data was thoroughly read and where necessary any areas that were unclear were addressed with the relevant EAP. The next step was data coding. Data coding is the first step in data analysis; it involves breaking the raw data into main elements and then naming each element based on one word or phrase that provides the best description (Creswell, 2014; Majumdar, 2019).

Data coding was followed by the generation of themes to allow for thematic analysis based on responses of EAPs to open-ended questions in the questionnaire in Annexure A (Question D1 and E2). Braun and Clarke (2006) and Majumdar (2019) highlight that themes are broader than coded data. Thematic analysis is defined by Braun and Clark (2006:79) as “a method for identifying, analysing and reporting patterns (themes) within data”. Majumdar (2019:199) defines thematic analysis as a means to “identify and finally report the most probable and

major themes from the data set”. One of the benefits of thematic analyses is that “it minimally organizes and describes your data set in (rich) detail” (Braun and Clarke, 2006:79).

In line with the data analysis process identified by Creswell (2014) as per Figure 3-2, the thematic analysis process yielded some of the key findings of the study and guided the identification of sub-headings and associated discussions in Chapter 4 of this dissertation in response to the open-ended Questions D1 and E2 of the questionnaire under sections 4.5.1 and 4.6.2 respectively. Although Creswell (2014) suggests the identification of five to seven themes, the number of themes identified in this study were dependent on the responses from EAPs. The themes were analysed in Microsoft Excel and graphs were generated and utilised in the discussion in Chapter 4.

In light of the data analysis methods presented thus far, it must be highlighted that the data analysis and discussion in Chapter 4 is presented in terms of the order of the questionnaire attached in Annexure A and comprising five (5) sections and a total of 17 questions.

Under both the quantitative and qualitative data analysis, it is important to state that the application of a saturation, where data collection is discontinued due to the absence of new data (Creswell, 2014) was not considered for the study as the aim was to obtain input from as many EAPs as possible. All comments, including repetitions, were deemed in a positive light as an indication of the importance of a specific issue to EAPs. The non-application of saturation also contributed towards reaching Research Objective 2 which was to determine the perceptions of South African EAP consultants towards effective EIA scoping.

3.4 Ethical considerations

According to Punch 2005 in Creswell (2014:92) “research involves collecting data from people about people”. This was borne in mind in undertaking this research and especially in the consideration of research ethics. The application of ethics was considered throughout the research process from the commencement of the study up to the current reporting phase and through any sharing and storage of data subsequent to the completion of the study (Hesse-Biber, 2010; Creswell, 2014). The five stages in which ethics were applied in this research study will be discussed in Sections 3.4.1 - 3.4.5.

3.4.1 Period before undertaking the study

The application of ethics in the period before undertaking this study pertained to adhering to the North-West University (NWU) requirements as well as the means adopted to identify potential research study participants. The NWU Faculty of Natural and Agricultural Sciences Research (FNAS) ethics committee accepted and approved the study and the ethics clearance number 'NWU-1315-20-A9' was allocated to the study (see Annexure B). Secondly, EAPASA granted permission to the researcher to contact registered EAPs inviting them to take part in the study (see Annexure C). In the invitation and to ensure transparency, the researcher notified the EAPs that they had obtained their details from the EAPASA website. Lastly, where snowball sampling was applied, the researcher provided the EAP with the details of their referee as a means to obtain their buy-in.

3.4.2 Commencement of the study

EAPs were encouraged, but not pressured, to take part in the study as a means of contributing to the body of knowledge in the environmental management field. This was communicated in the researcher's initial communication with EAPs in February 2020.

3.4.3 Data collection

The introductory section of the questionnaire (attached as Annexure A) included the study objectives, a clear statement that participation was on a voluntary basis and that the anonymity, privacy and confidentiality of participants was guaranteed.

3.4.4 Data analysis

The ethical considerations during the data analysis stage were that the names of the EAPs are not mentioned. Instead, they are referred to by a number from 1 to 37 based on the 37 EAPs who took part in the study. Further to the above, the researcher remained objective throughout this research and avoided taking the side of any particular EAP.

3.4.5 Reporting, data sharing, and data storage

Ethics applied here included the honest reporting of findings covering both positive and negative findings as well as duplicate findings. Furthermore, subsequent to the completion of the study, the researcher aims to communicate her appreciation to all EAPs who took part in the study by offering to provide them with a copy of the mini-dissertation. All data will be kept in a confidential and secure location by the researcher as has been the case from the commencement of the study.

3.5 Methodological limitations

Minor methodological limitations were encountered in undertaking this research. These were: (1) the *non-receipt of some responses* to open-ended questions, which could not be provided to the researcher within the stipulated timeframes. The researcher communicated with each EAP only one additional time asking for them to provide clarity. Where the clarity was still not provided, the researcher analysed the data according to their understanding of the initial responses provided. This did not affect the credibility of the data as this was limited to only one EAP out of the 37; (2) the *selection of two responses to closed-ended questions requiring one response* by two of the EAPs. These EAPs indicated that they were unable to decide on one response; this led to the capturing of their responses under two values as these findings could not be disregarded. This limitation affect the credibility of the data slightly as the responses of this nature were limited to only two EAPs out of the 37. Furthermore, the 'double responses' were for two different questions - i.e., D2 and E1.

3.6 Conclusion

Chapter 3 presented the research methodology followed for this research in which 37 South African EAP consultants took part. This sample of EAPs were identified from the EAPASA website as well as through purposive, random and snowball sampling techniques. A mixed method approach was used and a structured questionnaire, consisting of closed- and open-ended questions, was developed and emailed to the EAPs for self-administration. The questionnaire was structured according to 5 sections, and comprised 17 questions based on the background of the EAP, impact identification, scoping effectiveness, the public participation process as well as the general scoping process. Microsoft Excel was used for the analysis of both quantitative and qualitative data – the latter producing themes based on a thematic analysis. Further to this and having noted that ethical considerations are applicable

throughout the research process, the manner in which these ethics were applied have been discussed for each stage of the research study.

Two methodological limitations encountered in the study were also discussed. These were concerning the non-receipt of clarity in responses to open-ended questions from EAPs as well as two EAPs' selection of two responses to closed-ended questions requiring only one response. Both of these limitations had minor impacts on the credibility of the research. The next chapter will present the data analysis and a discussion of the research findings.

CHAPTER 4: DATA ANALYSIS AND DISCUSSION

4.1 Introduction

To learn about and understand the perceptions of Environmental Assessment Practitioners (EAPs) on the effectiveness of Environmental Impact Assessment (EIA) scoping, this chapter will present the data analysis and discussion of the findings based on the research methodology that was discussed in Chapter 3. The presentation and discussion of results in Chapter 4 will be structured according to the five sections and associated questions presented in the questionnaire attached to this dissertation as Annexure A. Although this Chapter aims to achieve all three Research Objectives as presented in Chapter 1, it will focus mainly on realising Research Objectives 2 and 3, which are to determine the perceptions of South African EAP consultants towards effective scoping, and to develop criteria against which to evaluate the effectiveness of scoping, respectively as these are shaped by the background of the EAP consultants.

4.2 Section A: Background of the EAP consultants

The first section for discussion provides the background of the research participants as professionals in the Environmental Management field. This background contributes towards providing a picture of the participant's level of aspects such as competence and professionalism. These in turn contribute towards the quality of EIA reports, inclusive of the scoping phase (Kågström, 2016; Roos *et al.*, 2020). This section is structured according to Questions A1 to A7 of Section A of the questionnaire (see Annexure A). The background of the participants is shaped in terms of the following: highest level of qualification (A1); professional registration (A2); registration with any environmental voluntary organisations (i.e. not professional (A3); years of working experience in EIA (A4); number of Basic Assessment (BA) reports they have prepared in the last 10 years (A5); number of scoping and EIA reports they have prepared in the last 10 years (A6); and sectors in which scoping and EIAs have been undertaken (A7).

The background information of the EAPs that participated in this study is important for the credibility of this research study and is based on the criteria of a competent EAP as set out by the Environmental Assessment Practitioners Association of South Africa (EAPASA) and their eligibility for professional registration. EAPASA is the single registration authority for EAPs in South Africa from 2018 until 2023. Registration with EAPASA is required for practice as an EAP, particularly one holding key responsibilities on a development project (Department of

Environmental Affairs, 2018; EAPASA, 2019; EAPASA, 2020). While the EAPASA 2019 Applicant Guideline Manual states that EAP applicants must hold qualifications that are suitable for carrying out environmental assessment, EAPASA caters for all professionals practicing as EAPs regardless of their qualifications (EAPASA, 2019). These can include Environmental Scientists, Planners, and Landscape Architects, to name just a few. In the absence of qualifications, the EAP can also be deemed competent, based on their Recognition of Prior Learning (RPL) (EAPASA, 2020). At the time of the compilation of this dissertation and based on information from EAPASA, EAPs would have to hold specific qualifications to become eligible for registration. EAPASA has however not provided any timeframes in this regard (EAPASA, 2019).

Under EAPASA, an EAP can register under one of two categories, namely a *Registered EAP*, or a *Candidate EAP*. The former refers to EAPs with a minimum of three years of relevant experience and a compilation of a minimum of three EIAs or BAs, in addition to a relevant qualification or based on their RPL. This category is in contrast to the latter that is aimed at EAPs who hold a qualification, but with no professional experience (EAPASA, 2019). The following subsections will further demonstrate the findings of the first section on the background of the EAPs that participated in this study.

4.2.1 Highest level of qualification (Question A1)

In the first question of Section A of the questionnaire (Question A1), EAPs were asked to state their highest level of qualification. The findings revealed that all of the participating EAPs held a qualification. Moreover, none of the participating EAPs held only a certificate as their highest qualification. Figure 4-1 below illustrates that 30% (11 of 37) of the EAPs that participated in this study indicated that they held a Bachelor of Science or Bachelor of Arts (B.Sc/B.A) degree, but also elaborated that they held B.Sc/B.A. Honours degrees as their highest qualification. Following up on the disciplines in which the B.Sc/B.A. Honours degrees were obtained, it emerged that all 30% of the EAPs held degrees only in Environmental Management, Environmental Sciences, Geography and other Natural Sciences disciplines. With regards to M.Sc/M.A qualifications, the majority of the EAPs (62%; 23 of 37) indicated that they held a Master of Science or Master of Arts (M.Sc/M.A) qualifications; only one EAP held a Master of Philosophy (MPhil) qualification. The disciplines demonstrated for the M.Sc/M.A category were largely similar to those under the B.Sc/B.A. category except for four EAPs (10.8%) whose highest qualifications were in Town and Regional Planning, Industrial Physiology, Law, and Landscape Architecture respectively. Only 8% (3 of 37) of the EAP participants held a Doctor

of Philosophy (Ph.D) qualification in the fields of Environmental Sciences, Plant Physiology and Aquatic Health, respectively.

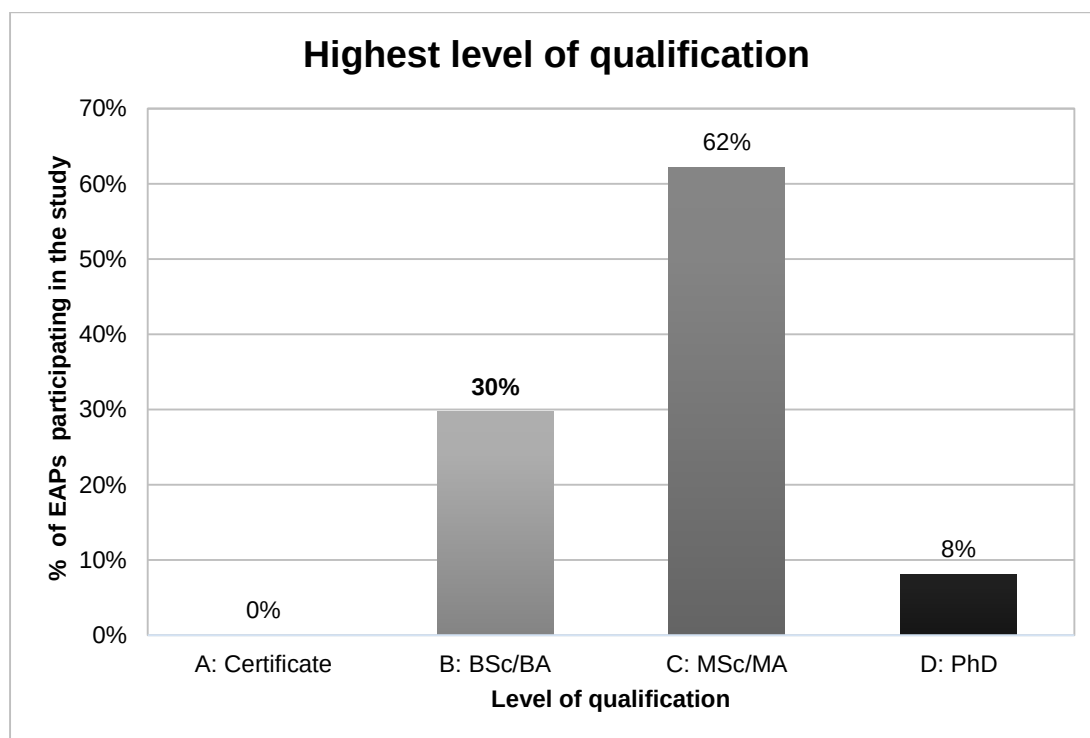


Figure 4-1: Highest level of qualifications for EAPs (Question A1).

The findings of the diverse qualifications of South African EAPs is in line with those of studies undertaken by Morgan *et al.*, (2012) and Kågström (2016) as discussed in Section 2.6.1 in Chapter 2. Based on the findings from the EAPs' level of qualifications, it is evident that the majority of the participants have a good educational background in environmental matters.

4.2.2 Professional registration (Question A2)

For Question A2, the EAPs were asked to present information on the status of their professional registration. Figure 4-2 below presents these results which indicate that 89% (33 of 37) of the EAPs are registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA) and 59% (22 of 37) with the South African Council for Natural Scientific Professions (SACNASP). It is also important to note that 57% (21 of 37) of the EAPs indicated that they are registered with both EAPASA and SACNASP. This is not unexpected because as discussed earlier in Section 4.2.1 most of the research participants

hold qualifications in the field of Natural Sciences and were therefore eligible for registration with SACNASP (SACNASP, 2020a; SACNASP, 2020b). These EAPs were also able to register with EAPASA because of their qualifications as well as their experience in Environmental Assessment (EA) as discussed in Section 4.2.2. Specific to EAPASA it is important to note that all the EAPASA-registered EAPs who took part in this research study are registered under the category *Registered EAP* (i.e., there are no *Candidate EAPs*). Furthermore, only 5% (2 of 37) of the EAPs that participated in this study are registered with other professional registration bodies, i.e., Engineering Council of South Africa: Professional Engineers (ECSA), and the South African Council for Landscape Architectural Professionals (SACLAP). Only 5% (2 of 37) revealed that they are not registered with any professional registration body.

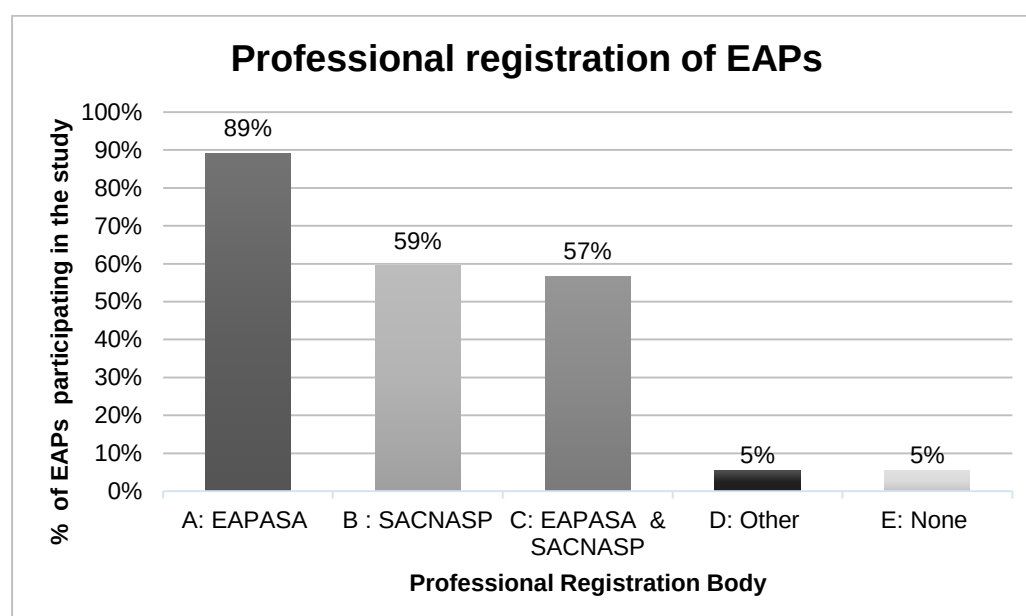


Figure 4-2: EAP professional registration (Question A2).

The key importance of professional registration is that it provides assurance of the quality of a professional's work as they have to abide by a code of conduct which outlines key aspects such as adherence to legislative requirements, keeping abreast of developments in their field of study, and undertaking all work without qualities such as dishonesty, deceit and misrepresentation (EAPASA, 2020; SACNASP, 2020c; SACNASP, 2020d).

4.2.3 Membership with voluntary environmental organisations (Question A3)

In the third question under Section A (Question A3), data regarding membership with voluntary organisations was provided. Seventy-three percent (27 of 37) of the EAPs that participated in

this study indicated that they were members of voluntary environmental bodies, and 27% (10 of 37) indicated otherwise (see Figure 4-3).

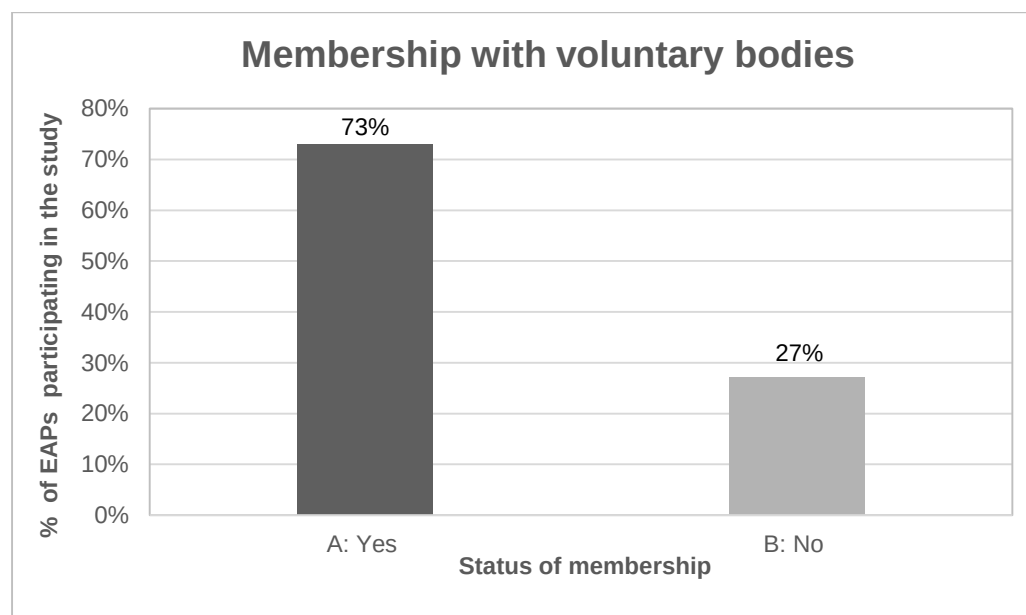


Figure 4-3: EAP membership with voluntary bodies (Question A3).

It is important to highlight that 62% (23 of 37) of the participants indicated that they held a membership with the International Association for Impact Assessment South Africa (IAIASa). The aforementioned 62% (23 of 37) was derived from the elaboration by the EAPs. Other voluntary associations with which the EAPs were registered included, the Institute for Landscape Architecture in South Africa (ILASA), the Water Institute of South Africa (WISA), the South African Bat Assessment Association (SABAA), Bird Life, the South African Wetland Society, the Gauteng Wetland Forum, and the Freshwater Ecosystem Network (FEN).

Some of the benefits of membership to voluntary organisations as obtained from the websites of some of the aforementioned bodies include catering for ongoing professional development, and information sharing (IAIASa, undated; SABAA, undated). According to IAIAsa (undated), voluntary bodies support professional registration bodies and aid in the maintenance of professional registration through the facilitation of activities that aid towards Continued Professional Development (CPD).

4.2.4 Years of working experience in EIA (Question A4)

In response to Question A4 concerning the number of years of working experience in Environmental Impact Assessment (EIA), Figure 4-4 below illustrates that the majority of the

participating EAPs (62%; 23 of 37) have EIA work experience of 16 years and above, followed by 19% (7 of 37) having 6–10 years working experience, 16% (6 of 37) with 11–15 years working experience, and only 3% (1 of 37) of EAPs having 1–5 years working experience in EIA.

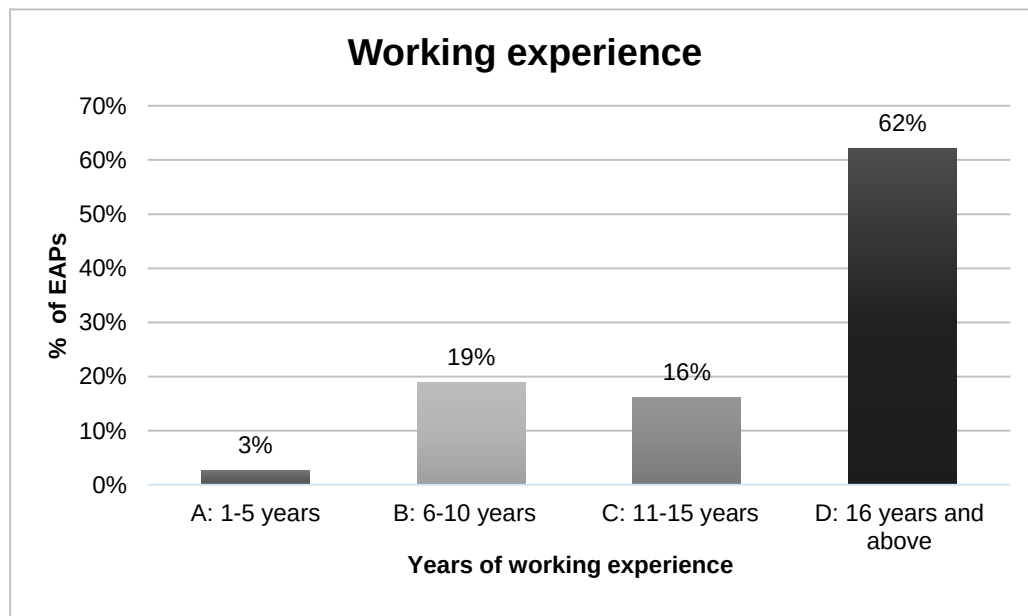


Figure 4-4: EAPs number of years of working experience in EIA (Question A4).

As discussed earlier in Section 4.2.2 and specific to EAPASA requirements, one of the criteria to qualify as a '*Registered EAP*' is a minimum of three years of relevant working experience. The participation of a high number of EAPs with experience that is well above the minimum three years strengthens the credibility of this research. Further to the above, the importance of experience and how this shapes perceptions towards environmental assessments was discussed under 2.6.2.

4.2.5 Number of BA reports prepared in the last 10 years (Question A5)

The fifth question of Section A of the questionnaire (Question A5) is about the number of Basic Assessments (BAs) that EAPs have prepared in the last 10 years. Figure 4-5 below indicates that the majority of the EAP participants (57%; 21 of 37) have compiled 10 reports and above in the last 10 years. Thirty percent (30%; 11 of 37) have compiled between 6–10 BA reports, whereas the remaining 14% (5 of 37) of the EAP participants stated that they had compiled between 1 and 5 BA reports in the last 10 years.

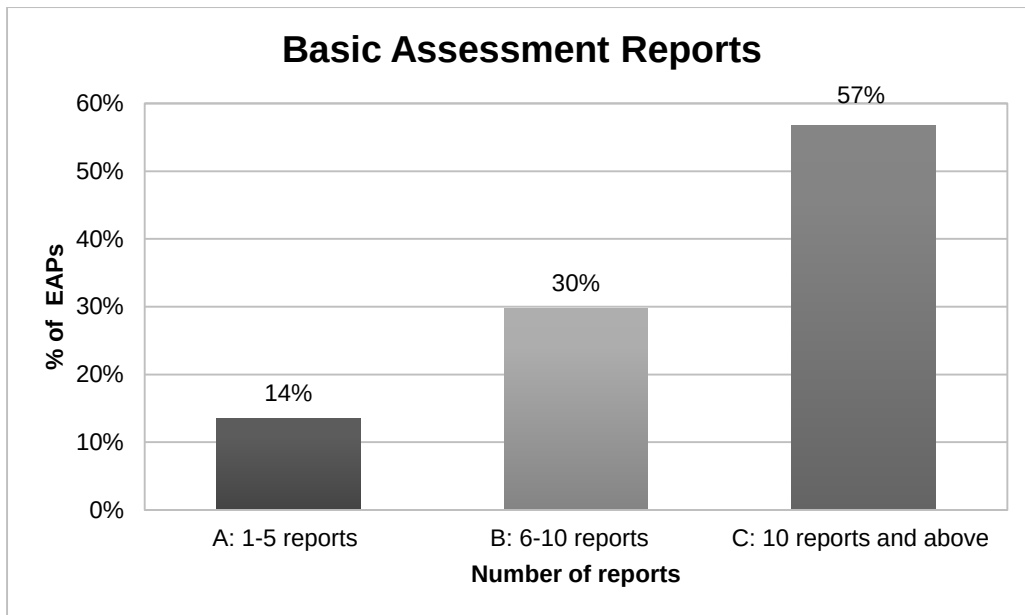


Figure 4-5: Number of BA reports compiled by EAPs (Question A5).

The data regarding the compilation of BA reports was significant to show that EAPs have experience in the undertaking of scoping integrated into the assessment phase as part of the BA process as discussed in Section 1.1.2 of Chapter 1. Another intention behind the inclusion of this detail was to determine the participating EAPs' knowledge of the BA process, and therefore be able to make comparisons between the BA and scoping, and the EIA processes where necessary.

4.2.6 Number of scoping and EIA reports prepared in the last 10 years (Question A6)

In response to Question A6 in the questionnaire, EAPs were asked to indicate the number of scoping and EIA reports they have prepared in the last 10 years. As shown in Figure 4-6 below, 27% (10 of 37) of the participating EAPs have prepared 1 to 5 scoping reports in the last decade, 22% (8 of 37) have completed 6–10 reports, and 51% (19 of 37) have completed 10 reports and above in the last 10 years.

As discussed earlier in Section 4.2.2 and based on EAPASA's requirements, one of the criteria for a professional to qualify as a '*Registered EAP*' providing consulting services is the compilation of a minimum of three reports, either EIA inclusive of the scoping report, or BA reports. Based on the research findings where the majority of participating EAPs meet this requirement, the credibility of this study is enhanced.

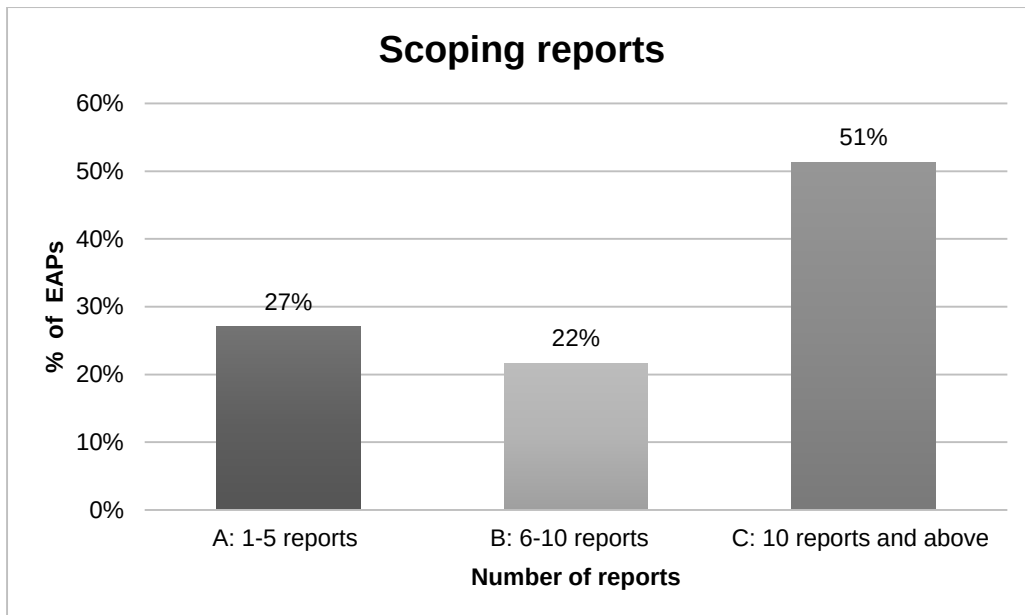


Figure 4-6: Number of scoping reports compiled by EAPs (Question A6).

4.2.7 Sectors in which scoping and EIAs were undertaken (Question A7)

In the last question that formed part of Section A (Question A7), the EAPs were asked to state the sectors in which they have undertaken scoping. EAPs were allowed to choose more than one sector in this regard. As shown in Figure 4-7 below, 51% (19 of 37) of the EAPs stated that they have undertaken work in the sewerage sector, 54% (20 of 37) in the electricity and the building sector, 59% (22 of 37) in the water sector, 65% (24 of 37) in the roads and transportation sectors, and 68% (25 of 37) in other sectors. The latter was mainly within the mining sector (64%; 16 of 37) followed by the waste management sector (24%; 6 of 37), and the agriculture, energy and other sectors (each at 16%; 4 of 37). Information on the relevant sectors of work experience is important as this can influence the perceptions of EAPs on scoping.

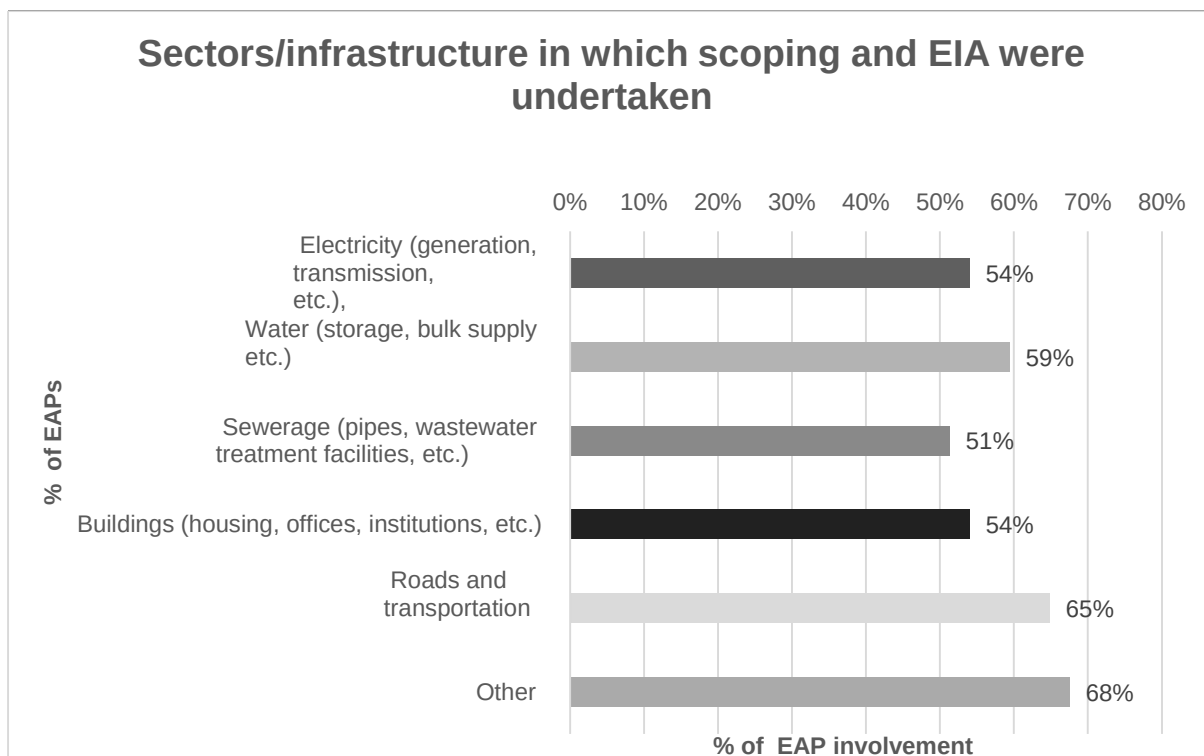


Figure 4-7: EAP sector/ infrastructure in which scoping and EIA were undertaken (Question A7).

4.3 Section B: Impact identification

This section of the results aims to not only present the findings pertaining to impact identification methods, but also to establish if the identification of these methods can be based on various aspects of a proposed project. This section consists of two questions referred to as Questions B1 and B2 in the questionnaire (see Annexure A) and contributes towards addressing Research Objective 1 on the role and importance of scoping in the EIA process. The following subsections will present the findings of the second section of the questionnaire focused on impact identification.

4.3.1 Impact identification methods (Question B1)

In the first question of Section B (Question B1), the EAPs were asked to indicate the methods that they use in impact identification. Several categories were presented to EAPs and together with their results are demonstrated in Figure 4-8 on the following page.

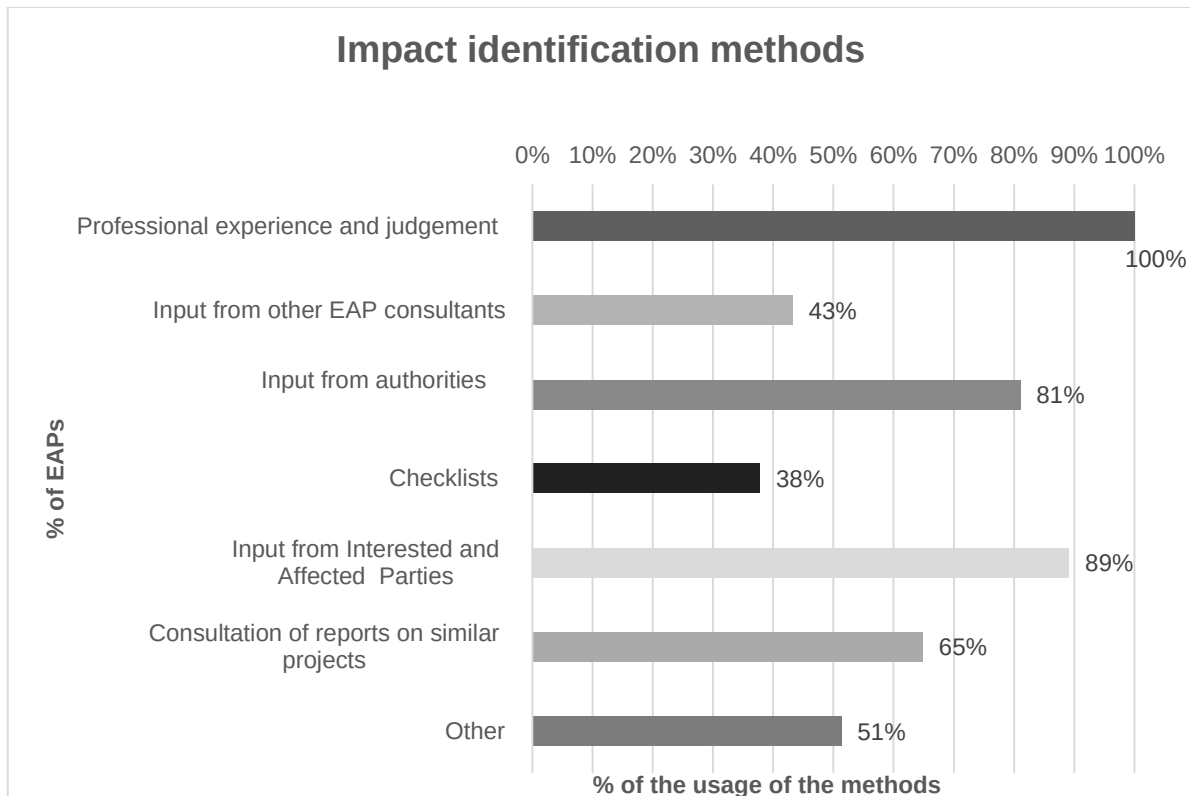


Figure 4-8: EAP impact identification methods (Question B1).

The results above indicate that all of the participating EAPs (100%) noted that they use professional experience and judgement as an impact identification method. The high levels of EAPs' usage of professional experience is in line with the findings of Wood *et al.*, (2006) discussed in Section 2.5 of Chapter 2. The use of input from Interested and Affected Parties (I&APs) was the second most popular identification method used by EAPs (89%; 33 of 37). Input from authorities was utilised by 81% (30 of 37) of the EAPs, consultation of reports on similar projects (65%; 24 of 37), other methods (49%; 18 of 37), and input from other EAP consultants (43%; 16 of 37) were demonstrated. The method that is used the least is checklists (38%; 14 of 37). The finding that 100% (37 of 37) of the EAPs used professional experience and judgement is in line with a study by Wood *et al.*, (2006) which indicated that this impact identification method is most frequently used by EAP consultants. With regards to 'other' methods utilised by EAPs, these are presented in Figure 4-9 below. It is important to reiterate that 'other' methods are utilised by 51% (19 of 37) of EAPs in this research. All discussions pertaining to this category will be based on these 18 EAPs only and not the sample total of 37.

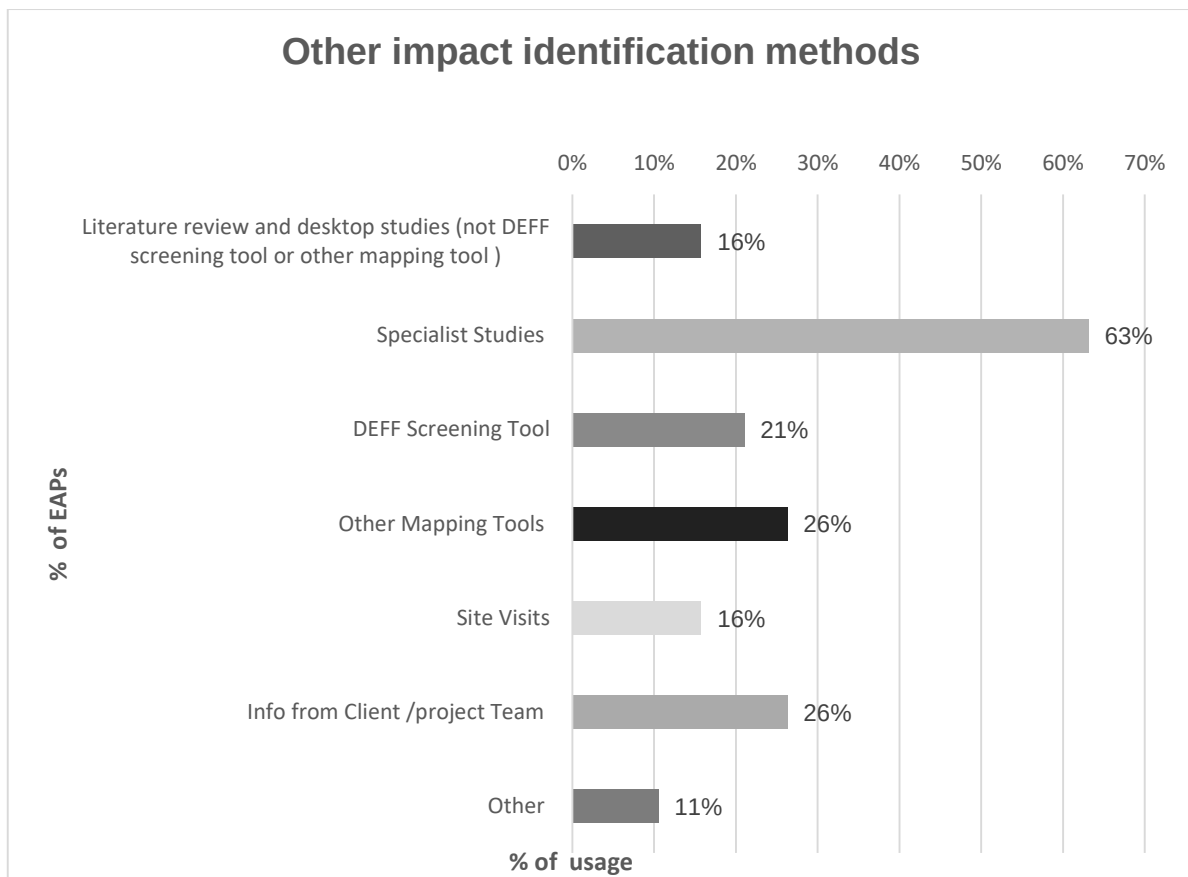


Figure 4-9: Other impact identification methods used by 51% (19 of 37) of EAPs.

Figure 4-9 highlights that specialist study findings is the method that is utilised by the majority of the EAPs (63%, 12 of 19) under the category of ‘other’ impact identification methods used by EAPs. This is an interesting finding as the NEMA EIA regulations require the undertaking of specialist studies during the EIA phase, subject to the approval of the plan of study as part of the scoping phase (Department of Environmental Affairs, 2018). EAP 4, although responding to Question D2 (To what extent do you believe there is any value in the public participation process during the scoping phase when only conceptual information is available and other important information such as specialist findings are absent?), provided a response that indicates the reasons behind their commissioning of specialist studies within the scoping phase. EAP 4 mentioned that *“during scoping, conceptual project information should be sufficient to identify potential aspects that warrant further investigation (i.e. specialist studies in the EIA phase) but in reality, the specialist studies often are commissioned already during scoping (we do this because of the time-frames associated with the legal application process: it is not possible to undertake a comprehensive hydrogeological study (for example), including geophysics, drilling of boreholes, aquifer tests, water quality analysis, waste analysis etc. in*

the 105 days allowed for in the EIA-phase of the application process (minus 30 of those days dedicated to public review of the EIA report). So, wherever possible, specialist information (at least on baseline conditions) should already be available during the scoping phase”.

The second highest impact identification method falling under the ‘other’ category of the impact identification method (B1) is ‘other mapping tools’ e.g., CapeFarmMapper, Google Earth, Geographic Information Systems (GIS), and information from the client or project team members both at 26% (5 of 19). The Department of Environment, Forestry and Fisheries’ (DEFF’s) Screening Tool was utilised as an impact identification tool by 23% (4 of 19) of the EAPs, site visits by 16% (3 of 19), and literature reviews and desktop studies (not DEFF screening tool or other mapping tool) by 16% (3 of 19). Other methods were used by only 11% (2 of 19) of EAPs and these included Risk Assessments and the use of a specific methodology which refers to an Impact Assessment Methodology and not impact identification.

4.3.2 Application of different methods based on various aspects (Question B2)

In addition to the impact identification methods discussed in subsection 4.3.1 above and in response to Question B2 of the questionnaire sought to uncover whether or not EAPs apply different methods of impact identification based on sectors, location, or other factors. The analysis of the responses which are captured in Figure 4-10 below indicate that 38% (14 of 37) of the participating EAPs apply different methods, whereas 57% (13 of 37) do not apply different methods. The responses that were received from the remaining 5% (2 of 37) of the EAPs were unclear in this regard.

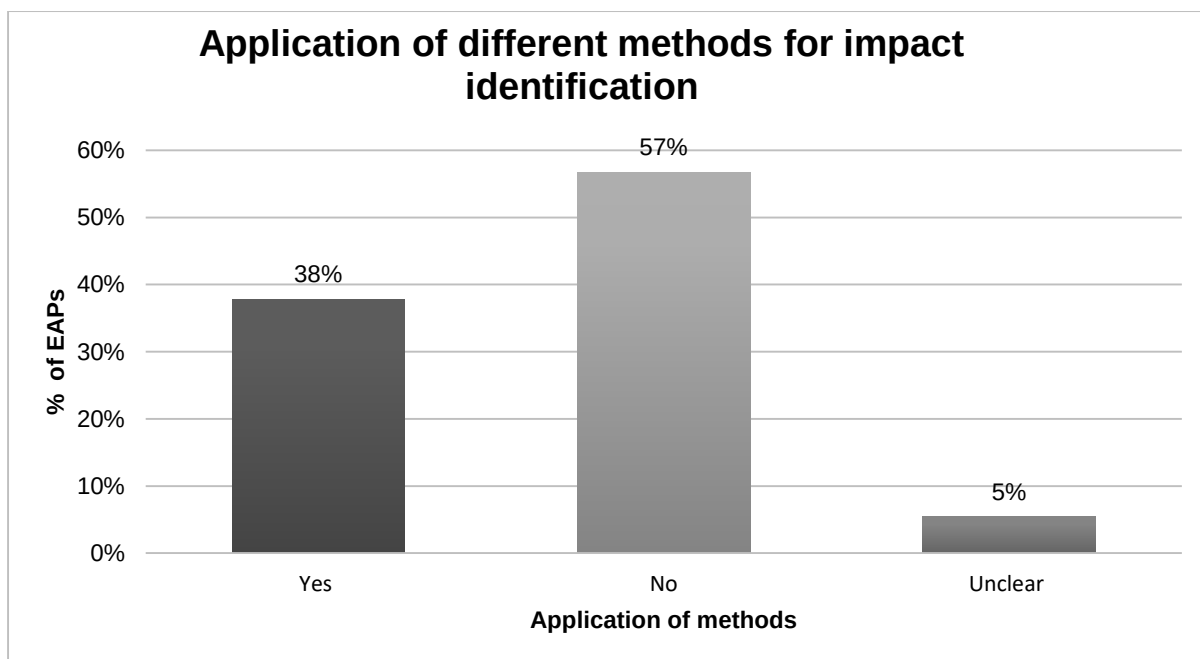


Figure 4-10: EAP impact identification methods based on specific aspects (Question B2).

Those EAPs who indicated that they apply different methods elaborated in their responses that the use of this approach was based on the nature and complexity of the project. An example provided was that of impacts for mining in comparison to those for a housing development (EAP 20). With regards to the location, one EAP provided an example of their usage of I&AP knowledge for urban areas or of specialists when working in sensitive environments (EAP 15). In contrast, the EAPs who stated that they do not use different impact identification methods elaborated that the methods remain the same although the impacts, their extent and intensity will naturally be different.

4.4 Section C: Scoping effectiveness

The third section for discussion is based on the four categories of effectiveness presented earlier in Section 2.4 of Chapter 2. These four categories are: (1) *procedural*; (2) *substantive*; (3) *transactive*; and (4) *normative* as discussed by authors such as Sadler (1996), Baker and McLelland (2003), Chanchitpricha and Bond (2013), as well as Loomis and Dziedzic (2018).

In this section of the questionnaire, the extent of the consideration of these categories by EAPs was probed and was aimed at addressing Objectives 1 and 3. Section C of the questionnaire is comprised of Questions C1 to C4 (see Annexure A). The following subsections present the findings of these questions under Section C.

4.4.1 Consideration of procedural effectiveness (Question C1)

The first question of Section C of the questionnaire (Question C1) required EAPs to indicate the extent to which they consider *procedural effectiveness* (i.e., the degree to which the EIA corresponds with set procedures, provisions, practices, and principles based on legislation and other measures) when undertaking scoping. The responses to this question are presented in Figure 4-11 below.

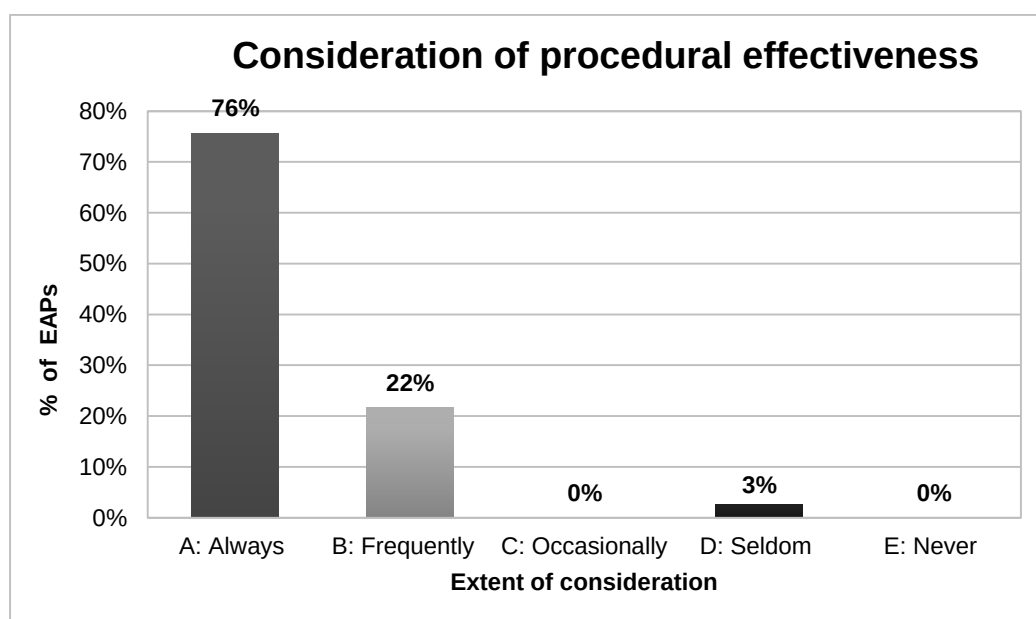


Figure 4-11: Procedural effectiveness consideration (Question C1).

The findings demonstrate that the majority of the participating EAPs (76%; 28 of 37) indicated that they 'A: Always' consider procedural effectiveness, whereas 22% (8 of 37) demonstrated that they 'B: Frequently' do so, and only 3% (1 of 37) revealed that they 'D: Seldom' consider procedural effectiveness during scoping. None of the EAPs stated that they use procedural effectiveness 'C: Occasionally' or 'E: Never'. These findings are important because they indicate that South African EAPs largely adhere to legislative requirements for scoping as set out in Appendix 2 of the NEMA EIA Regulations (Department of Environmental Affairs, 2018).

4.4.2 Consideration of substantive effectiveness (Question C2)

In the second question of Section C of the questionnaire (Question C2), EAPs were asked to indicate the extent to which they considered *substantive effectiveness* (i.e., about performance

and the degree to which the EIA meets its aims, goals, and objectives) when undertaking scoping. The responses to this question are presented in Figure 4-12 below.

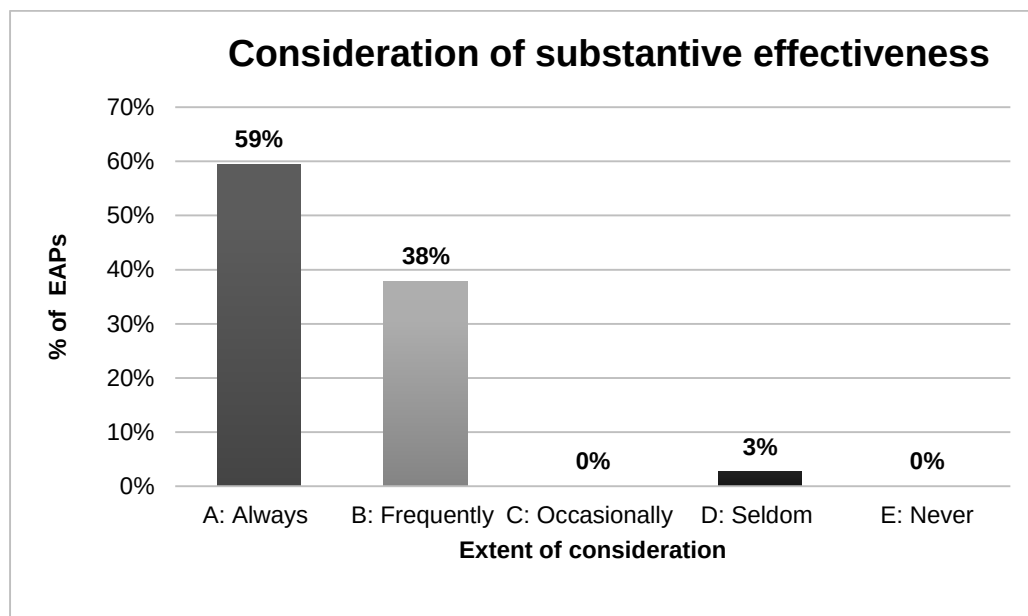


Figure 4-12: Substantive effectiveness consideration (Question C2).

The responses indicated that 59% (22 of 37) of the participating EAPs, 'A: Always' considered substantive effectiveness, 38% (14 of 37) 'B: Frequently' considered it, and 3% (1 of 37) of EAPs 'D: Seldom' considered it. Substantive effectiveness is not 'C: Occasionally' or 'E: Never' considered by the EAPs that participated in this study). In comparison to procedural effectiveness discussed above in subsection 4.4.1, it is clear that EAPs do not 'A: Always' consider substantive effectiveness to the same extent as procedural effectiveness

4.4.3 Consideration of transactive effectiveness (Question C3)

The third question of Section C of the questionnaire (Question C3) required EAPs to state the degree to which they considered *transactive effectiveness* (i.e., the degree to which the EIA meets its aims, goals, and objectives within the least time and with minimal cost) when undertaking scoping. The responses to this question are indicated in Figure 4-13.

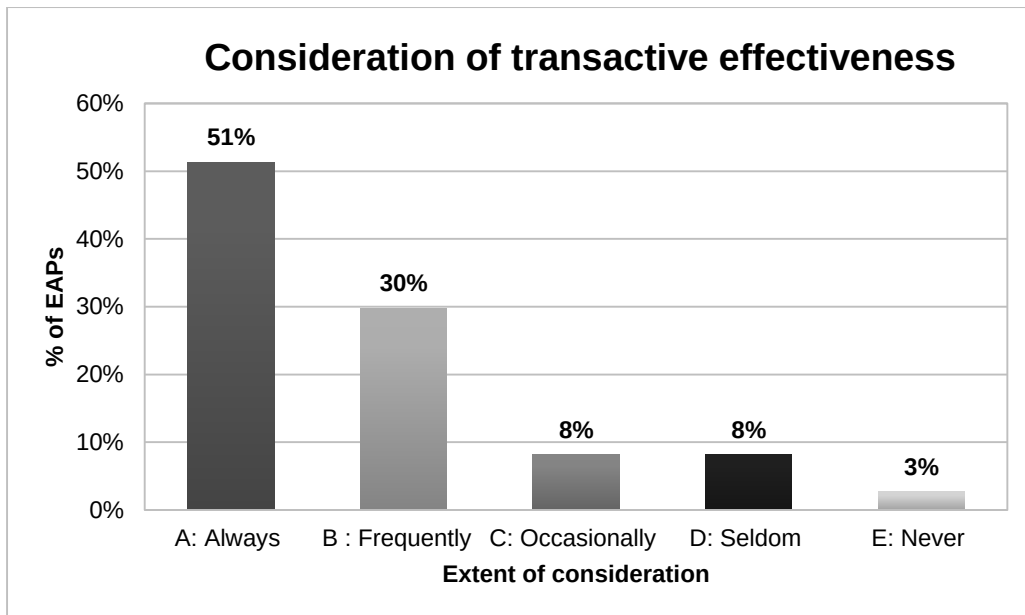


Figure 4-13: Transactive effectiveness consideration (Question C3).

Fifty-one percent (19 of 37) of EAPs stated that they 'A: Always' consider *transactive effectiveness*, whereas 30% (11 of 37) mentioned that they 'B: Frequently' did, 8% (3 of 37) 'C: Occasionally' did so, while 8% (3 of 37) 'D: Seldom' considered it, and only 3% (1 of 37) of EAPs 'E: Never' considered transactive effectiveness. In addition to the responses to the closed-ended question, one of the EAP respondents (EAP 2) elaborated in their response by stating that "*one is always under pressure from the client regarding time and money*". Based on these findings, it is clear that South African EAPs are conscious of transactive effectiveness when undertaking scoping.

4.4.4 Consideration of normative effectiveness (Question C4)

The last question of Section C of the questionnaire (Question C4) required EAPs to indicate the extent to which they considered *normative effectiveness* (i.e., the degree to which the purposes of legislation and policies are attained - e.g., the achievement of sustainable development) in the undertaking of scoping. Figure 4-14 presents the extent of EAPs consideration of *normative effectiveness*.

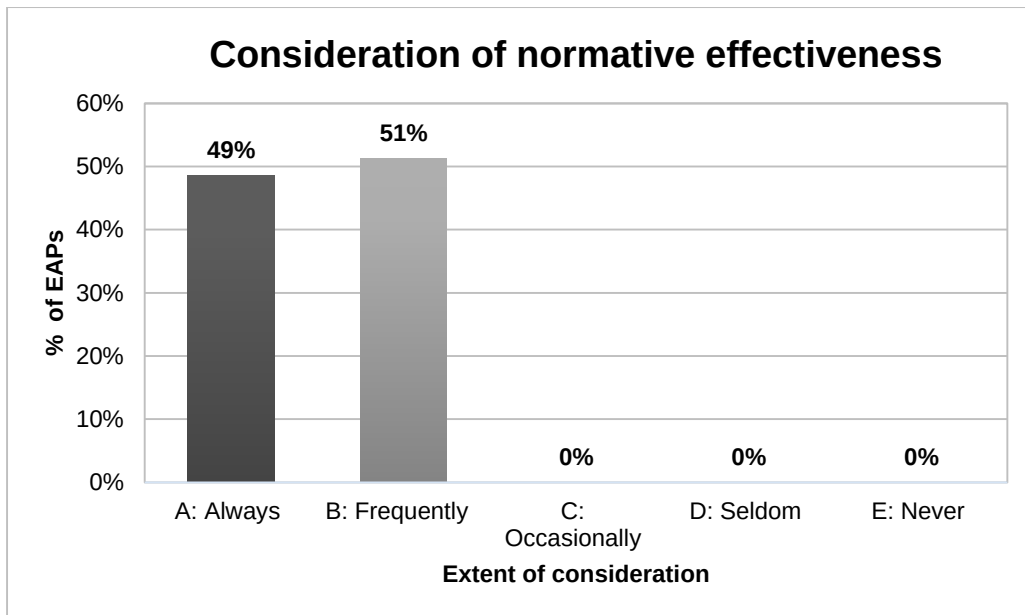


Figure 4-14: Normative effectiveness consideration (Question C4).

The results for this question reveal that 49% (18 of 37) of the participating EAPs indicated that they 'A: Always' consider normative effectiveness, whereas 51% (19 of 37) stated that they 'B: Frequently' do so. None of the EAPs indicated that they 'C: Occasionally', 'D: Seldom' or 'E: Never' considered normative effectiveness (Figure 4-14). These findings, indicate that South African EAPs are conscious of the purposes of legislation and policies, and while they may not always consider normative effectiveness, they frequently do so.

4.4.5 Summary of findings under scoping effectiveness categories (Questions C1-C4)

The responses from Questions C1 to C4 of the questionnaire that focus on the effectiveness of EIA scoping show that EAPs will, to a large extent, consider the overall effectiveness criteria. Specific to the extent of consideration of effectiveness using the scale of 'A: Always', 'B: Frequently', 'C: Occasionally', 'D: Seldom' and 'E: Never', *procedural effectiveness* was ranked as 'A: Always' by 76% (28 of 37) of the EAPs; this result was followed by *substantive effectiveness* at 59% (22 of 37) of EAPs, *transactive effectiveness* at 51% (19 of 37) and *normative effectiveness* at 49% (18 of 37) of EAPs. As discussed earlier in Section 2.4 of Chapter 2 and as noted by authors such as Loomis and Dziedzic (2018) and Runhaar *et al.*, (2019), the *procedural effectiveness* criterion is the most assessed. The results of this study

also show that in addition to the *procedural* criterion as the most assessed, it is also the type of effectiveness that is generally always being considered by EAPs.

4.5 Section D: Public participation

In Section D of the questionnaire, questions about the public participation process (PPP) during the scoping phase were asked. These pertain to the key criteria that interested and affected parties (I&APs) must meet to play a part in effective scoping (Question D1), and the value of the public participation process in the scoping process (Question D2) (see Annexure A). Obtaining EAP perceptions on PPP aimed to address Objective 3 as adequate public participation is one of the elements of effective scoping as discussed under section 2.3.3 in the literature review chapter.

4.5.1 Most important criteria that I&APs must meet to contribute to effective scoping (Question D1)

The first question of Section D (Question D1), aimed to establish the most important criteria that I&APs must meet in order to contribute to effective scoping. The participating EAPs were asked an open-ended question and the thematic analysis of their responses, as per the discussion under section 3.3.4, yielded 15 themes which were then identified as the criteria that I&APs must meet in order to contribute to effective scoping. The themes and in turn the criteria are presented in Table 4-1 and Figure 4-15 respectively.

Table 4-1 shows the various themes identified under Question D1. These include the importance of I&APs to understand the proposed development, honesty and correct motives when presenting issues as well as active engagement and information sharing. It is important to state that one unclear response to Question D1 was provided by one of the EAPs and for this reason a theme could not be identified and captured in Table 4-1.

Table 4-1: Themes and phrases identified from responses to Question D1 of the questionnaire.

Themes identified from responses to Question D1	Examples of Phrases identified from responses to Question D1
Understands proposed development	"understanding of the type of development", "understanding of the project", "understand the nature of the project", "understanding of the specific project scope and planned development", "understand the project/activity that is being applied for"
Show concern and understand possible impacts	"understanding of the type of development and its likely impacts", "truly concerned about an impact"
Early registration and early provision of comments/concerns	"not wait until a project has been approved and then try to appeal the decision", "get registered early in the process, "raise their immediate concerns with the proposed development"
Directly impacted and interested in the project /Landowner, adjacent landowner, occupier of the property, municipality.	"directly impacted or genuinely interested", "have a vested / real interest in the project", "directly affected by the proposed project", "landowner, adjacent landowner, occupier of the property, municipality"
Provide correct contact details	"to provide the correct contact details"
Request specialist input for areas of concern	"specialist input"
Propose mitigation measures	"come up with solutions / mitigation measures"
Honesty and correct motives	"honesty", "meaningful, factual inputs", "truthful and accurate information", "specific agenda", 'motive is another factor"
Objectivity and non-emotional contribution	"non-emotional commenting", "need to keep focused on the projects", "comes from an emotional place and does not hold much water, unless it is substantiated in facts unfortunately", "stick to the facts", "willingness to be at least somewhat objective"
Provide local knowledge and information about the receiving environment	"local knowledge", "understand the nature of the project and the receiving environment", "they know their properties", "knowledge of the area"
Active engagement and information sharing	"be willing to share their information and be able to listen", "able to communicate their issues, concerns or support", "willingness to openly discuss issues of concern", "review the documentation made available to them"
Literacy	"Illiterate people will mostly comment or object to a project even after a specialist report will prove the opposite"
Understand the assessment methodology /with background in environmental impact	"background in environmental impact", "understanding of the assessment methodology"
Originate from various socio-economic-classes	"all socio-economic classes must be considered"

The top five categories that emerged from the percentage of responses were: (1), 'active engagement and information review and sharing' identified by 27% (10 of 37) of EAPs; (2) 'understanding of proposed development' (24%; 9 of 37); (3) 'objective, factual and unemotional contribution' which was identified by 16% (6 of 37) of EAPs as well as 'directly interested and affected' by the project which was also identified by 16% (6 of 37) of EAPs; (4) 'sharing of local knowledge' was identified by 14% (5 of 37) of EAPs; and (5) 'timely

registration and provision of comments' which emerged from 8% (3 of 37) of the participating EAPs' responses.

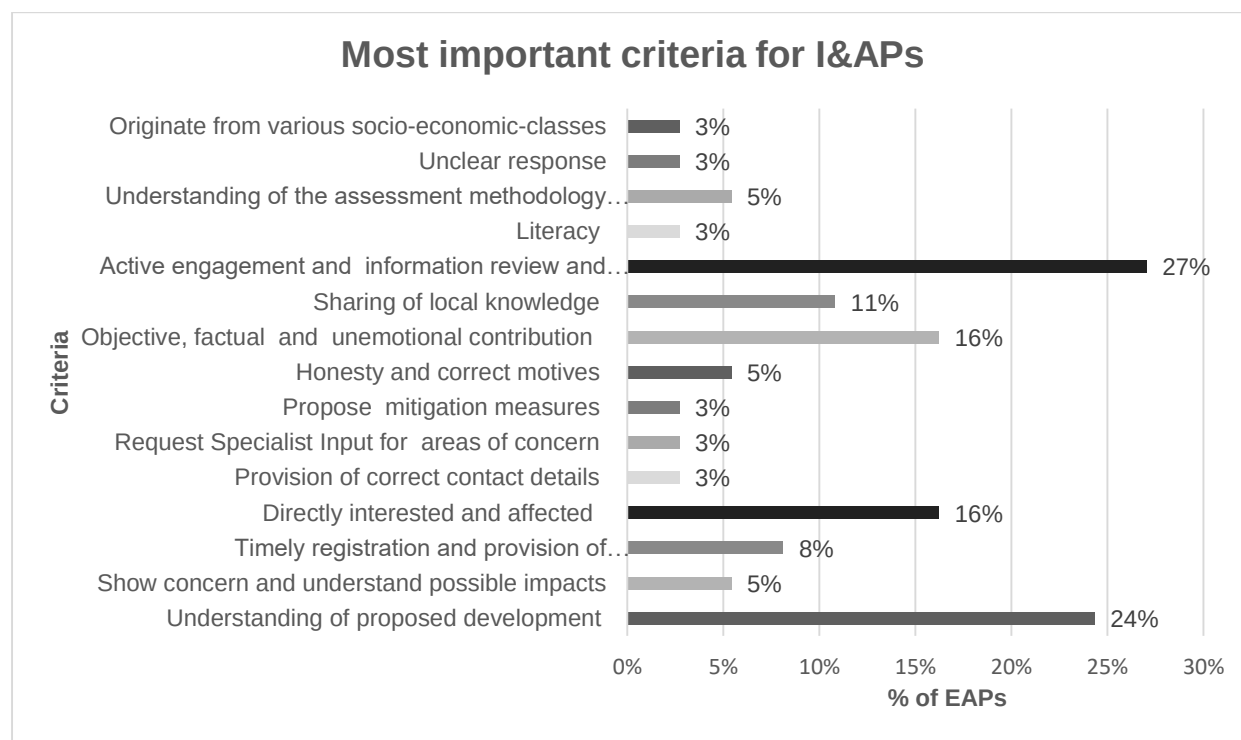


Figure 4-15: Most important criteria for I&APs taking part in scoping (Question D1).

A discussion on the aforementioned top five most important criteria for I&APs will be provided here. These criteria are those identified by between 8% and 27% of the participating EAPs. The above-mentioned discussion will be followed by a discussion on the other criteria that are not within the top five and which were identified by 5% (2 of 37) and 3% (1 of 37) of the EAPs. It must be reiterated that these criteria emerged from the responses provided by the participating EAPs.

The first and most important criterion which emerged from 27% (10 of 37) of the EAPs responses is 'active engagement and information sharing'. Some EAPs stated that I&APs must be willing to share information and also be willing to listen and to review information provided (e.g., EAPs 16, 28 and 29). With regards to the latter two aspects, one EAP utilised an example of cellphone towers to highlight how the reliance on pre-conceived ideas about projects or processes and from unreliable sources such as social media affect I&APs' engagement, and how information from sources such as the World Health Organisation (WHO) is not accepted (EAP 28). Another EAP (No. 29) mentioned that I&APs *"must review the documentation made available to them. We often find, based on comments that get*

submitted that the I&APs don't read the documents which reduces the quality of their input during a process". EAP 29 also mentioned the importance of I&APs reviewing information provided to them. The need for active engagement in scoping was also discussed by Hansen and Wood (2016) who added that the active participation of I&APs not only aids in the presentation of local knowledge but can possibly aid with dealing with any anxieties that stakeholders may have about a proposed development.

The second criterion is 'I&APs' understanding of the proposed development'. This criterion emerged from 24% (9 of 37) of the EAPs' responses. While 8 of the 37 of the EAPs simply mentioned that the I&APs' understanding of the proposed development is important, only 1 of the 37 EAPs stated that if I&APs read through the information provided to them it would aid in their understanding of the proposed development (EAP 29).

The third most important criteria covered two themes identified by 16% (6 of 37) of EAP consultants. One was that I&APs that take part in scoping need to be 'directly interested and affected' (EAP 31; 34 and 36). The EAPs identified examples of I&APs that meet this criterion as the municipality, landowners, adjacent landowners, occupiers of the property, or individuals who reside in the vicinity of the proposed development. Another theme identified by 16% (6 of 37) of the EAPs and which also emerged as the third most important criteria based on percentages was that I&APs must make 'objective, factual and unemotional contributions' (e.g. EAPs 10; 15 and 22). Some EAPs (EAP 22 and 23) were of the opinion that comments that are provided with a lot of emotion do not become valid unless they can be substantiated by facts in order to be valuable to the project.

The fourth criterion identified by 11% (4 of 37) of the EAPs was the 'sharing of local knowledge' by I&APs (EAPs 11; 14; 26 and 35). One EAP stated that the sharing of local knowledge assisted with the identification of sensitive site features such as graves on site (EAP 11).

The fifth criteria identified by 8% (3 of 37) of EAPs was the 'timely registration and provision of comments/concerns' after the request of these from I&APs (EAP 2; 7 and 12). One of the three EAPs (EAP 2) mentioned that *'they must take part in the process and provide their issues of concern and/or objections when asked to do so. They should not wait until a project has been approved and then try to appeal the decision taking (sic). Seen as delaying tactics by I&APs'* (sic).

Other important criteria that were not in the top five, but were also identified by the participating EAPs are discussed below. Five percent (2 of 37) of the participating EAPs stated that it was necessary for I&APs to have an 'understanding of the assessment methodology/possess

background in environmental impact' (EAPs 19 and 35). Another criterion identified by 5% (2 of 37) of the EAPs was that I&APs that take part in scoping need to 'display honesty and correct motives'. With regards to the motives, EAP 25 summarised the comments well by mentioning that *"some parties with a specific agenda derail the process and fail to interact effectively"*. An additional response under this criterion originated from EAP 9 who merely stated that the EAPs need to be honest about their issues. In addition to the above criteria and based on responses from 3% (1 of 37) of EAPs, other criteria are that I&APs need to 'originate from various socio-economic classes', possess 'literacy', be able to 'propose mitigation measures', 'request specialist input for areas of concern' and 'provide correct contact details'.

It is important to highlight that an additional EAP (1 of 3%) provided an 'unclear' response which was 'relevance' (EAP 6). Although the researcher followed up with the participating EAP to obtain clarity on their response, feedback had not been received at the time of the compilation of this mini-dissertation.

4.5.2 The value of the public participation process (PPP) during scoping (Question D2)

In the second question of Section D of the questionnaire (Question D2), EAPs were asked to indicate the extent to which they believe there is value in the public participation process (PPP) during the scoping phase when only conceptual information is available and other important information such as specialists' findings is absent. In response to this question, it is important to note that one EAP selected two options instead of one, stating their indecisiveness in selecting one option. For this reason and specific to this question, the total number of participants was deemed to be 38 and not 37 to correspond with the total number of participants. The EAPs had to indicate their responses as 'A: Major value; B: Moderate value; C: Little value; or D: No value'. As illustrated in Figure 4-16, the majority of the EAPs (53%; 20 of 38) indicated that there was 'A: Major value' of the PPP during the scoping phase, whereas 37% (14 of 38) indicated that PPP holds 'B: Moderate value' during the scoping phase. Only 11% (4 of 38) indicated there was 'C: Little value' in the PPP. None of the EAPs were of the opinion that there was 'D: No value' in the PPP during the scoping phase. It is important to note that one EAP selected both 'B: Moderate value' and 'C: Little value' indicating their indecisiveness in providing one answer. This response was however captured under both categories as the researcher aimed to disclose all findings in an honest manner.

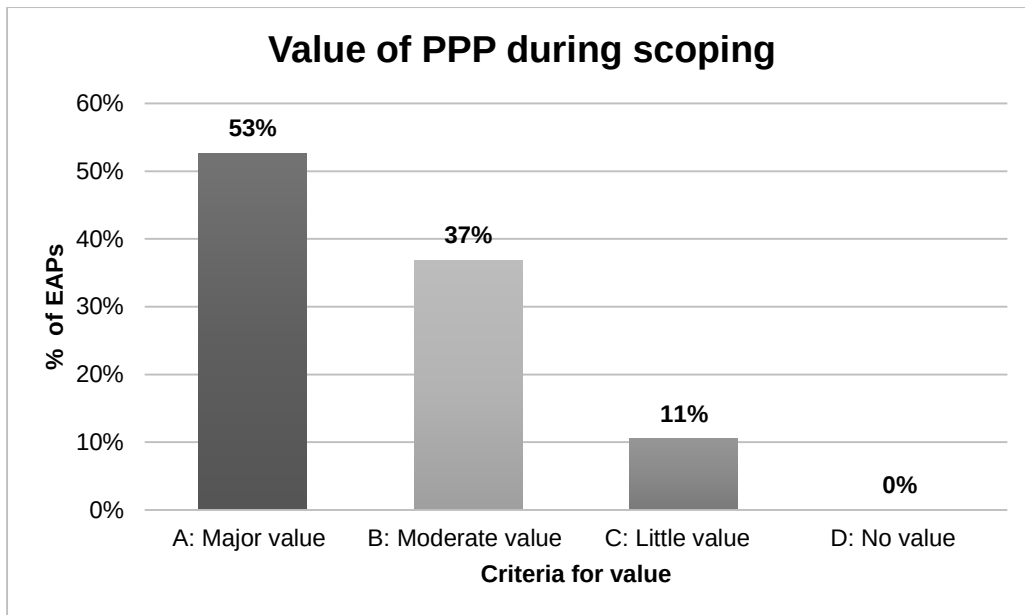


Figure 4-16: Extent of the value of PPP in scoping (Question D2).

It must be noted that the EAP who selected two response to the question on the value of scoping opted for 'B: Moderate value' as well as 'C: Little value'. This EAP's response which indicated their indecisiveness to select one response was *"most of the comments received cannot help the process, but through my years I have received very valuable information, such as the location of a drain or an irrigation channel somewhere for example, which have been missed so far and will then be assessed properly. So it has value, but only sometimes. That still means it's necessary, even solely based on precautionary principle, because what if you miss relevant insight which could be disastrous"* (EAP 23).

The results and discussions for other responses received regarding the value of PPP during scoping is presented in the next sections. These are based on the options presented in the questionnaire and reflect single, and not double responses as presented in the previous section.

4.5.2.1 Major value of the PPP in scoping

As discussed above in Section 4.5.2, 54% (20 of 37) of the EAPs felt that there was major value in the PPP during scoping. Three points emerged from the responses of the above-mentioned EAPs.

The first point was that I&APs provide local knowledge which aids in aspects such as specialist study identification, sensitive areas, important areas or features, impact identification and that it guides designs and alternatives. One of the responding EAPs added that local knowledge also aids in addressing the shortcomings of specialist studies (EAP 2). EAP 4 extrapolates upon this by stating that, *“specialist input is also often limited to single-season surveys due to time constraints (the legal application process) and budgetary constraints. Even where a study can be scheduled to include seasonal surveys, the local communities in an area often have knowledge of outlier events that the EIA process should also consider (drought periods, floods, extreme windy conditions sometimes only experienced once per year), but that could cause additional impacts to arise from a project, which impacts must be pro-actively managed”* (sic). EAP 20 also adds that *“project budgets are always limited, which means specialists going to site will have a limited time for their assessment. Local people can provide borehole locations, information on flora and faunal activity, etc.”*

The second point stems from contributions provided by EAPs who were of the opinion that the major value in the PPP was that I&APs can assist in terms of providing project alternatives that the EAP or client may have not previously thought of. An example is provided by one of the EAPs in the case of an open cast versus underground mine (EAP 3). It is important to mention that there were no other EAPs who provided examples for alternatives.

The third point that was mentioned by EAPs who were of the opinion that that there was major value in PPP during scoping was that I&APs can present areas of concern about a project at an early stage. EAP 25 best describes this by stating that *“public participation is often very much about perceptions and not necessarily real and proven impacts. It involves emotion and often hidden agendas. These are not influenced by facts. They do however, need to be taken seriously and considered in project planning. The earlier in the process this information is received, the more effectively it can be incorporated into project planning where appropriate”*.

EAP 28 concurs with EAP 25 by saying that *“Often issues are raised that can change the scope and scale of the investigations required e.g. I &APs familiar with the area can raise early concerns about specific fauna / cultural issues etc. If the EAP doesn’t find out about these issues from other sources, it can mean delays later when additional specialists have to be appointed late in the process”*.

4.5.2.2 Moderate value of the PPP in scoping

Although a moderate value was selected by 38% (14 of 37) of the participating EAPs, the elaborations to the selected value were to a large degree similar to those provided by EAPs who were of the opinion that the PPP was of major value in scoping. It was only 5% (2 of 37) of the EAPs whose responses were aligned to a moderate value of PPP in scoping. These responses included how I&APs sometimes get confused when approached about a project with incomplete assessments. This finding is similar to that of a study by Snell and Cowell (2006) and Wood *et al.* (2006) discussed earlier in Section 2.3.3 in Chapter 2 who mention that the confusion can also result in project delays. Despite the reported confusion, 13.5% (5 of 37) of the participating EAPs indicated that the value of the PPP in scoping was moderate due to one of the advantages of the PPP in scoping being that I&APs can aid with information such as the identification of either new or additional specialist studies. EAP 13 indicated that some I&APs may decide to support or reject a proposed development application or development proposal during the scoping phase without taking account of other information that will be available during the EIA phase.

4.5.2.3 Little value of the PPP in scoping

The 11% (4 of 37) of EAPs who indicated that there is little value of PPP in EIA scoping stated that it is important that adequate information is provided to I&APs to allow for informed decision-making (EAPs 11; 30 and 31). *“Often it is difficult to supply adequate response to I&APs concerns without all the relevant specialist information”* (EAP 31). EAP 39 supports this by mentioning that *“I&AP’s must be properly and comprehensively informed, in order that they can make informed decisions and inputs”*.

In the experience of EAP 11, the reason behind their perception of little value of PPP in EIA scoping was due to the lack of I&APs *“environmental information about the area”* despite the expectation that adjacent land owners and land users would be familiar with the study area. EAP 11 adds that *“besides checking the tick box of undertaking public participation it has held no value”*.

4.6 Section E: General scoping process

The fifth and last section of the discussion covers Questions E1 and E2 of the questionnaire. These two questions pertain to the EAPs perceptions on the value of a distinct scoping

process, as well as their suggestions regarding the overall improvement of the South African scoping process. The questions asked aimed to address Research Objective 2 while also contributing to Objective 3. Based on the above, the following subsections will present the findings of the abovementioned questions.

4.6.1 Value of a distinct scoping process (Question E1)

In response to Question E1 pertaining to the value of a distinct scoping process as part of the EIA in comparison to scoping in a BA where the scoping is integrated with the assessment phase, it is important to note that one EAP selected two options instead of one, citing their indecisiveness in selecting one option. For this reason and specific to this question, the total number of participants was deemed to be 38 and not 37 to correspond with the total number of participants. Sixty-one percent (23 of 38) of the EAP participants indicated 'A: Yes' that there is value in a distinct scoping process. The remainder 21% (8 of 38) of the EAP participants indicated that there is 'B: *Sometimes value*', and 18% (7 of 38) indicated that there is 'C: *No value*' in a distinct scoping process (see Figure 4-17).

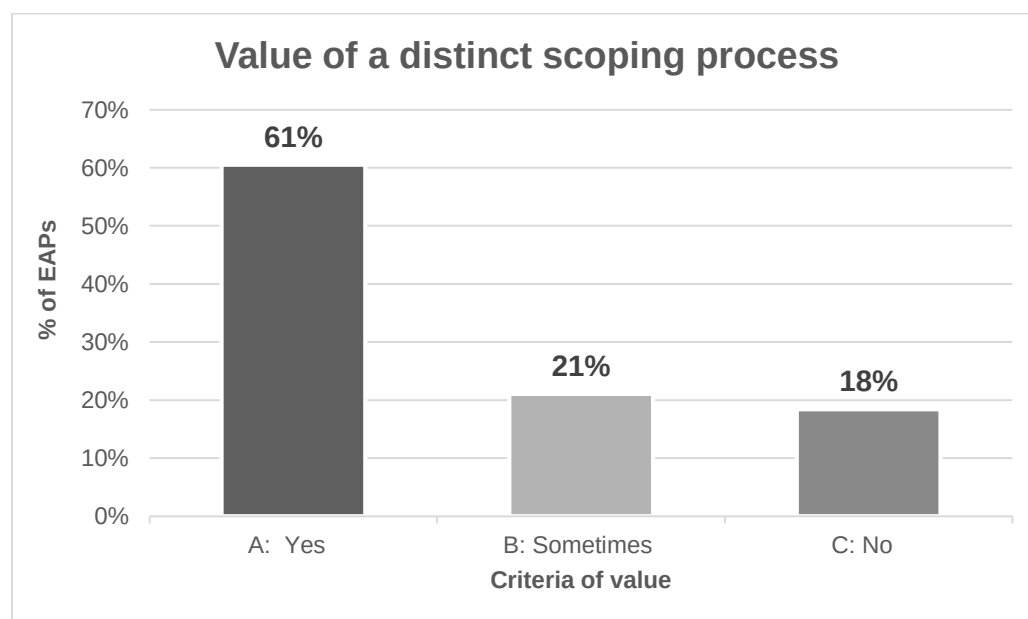


Figure 4-17: EAP perceptions about the value of a distinct scoping process (Question E1).

It is important to note that the EAP who selected two options in response to the value of scoping opted for 'B: *Sometimes*' having value and also 'C: *No value*'. This EAP's response

was “*I think it is a 50/50. Sometimes during a Scoping phase you might obtain information about the environment that helps the specialists, as well as the EAP, for when they complete their studies for the EIA phase. But a lot of the time it is just a paper exercise and a check box before completing the EIA, as all the impacts assessed in the scoping are just elaborated on in the EIA. So it is a 50/50, it just lengthens the time frames to have an activity approved a lot of the time*” (EAP 11). This statement indicates this EAPs’ indecisiveness in providing only one answer. Consequently, this response was captured under both options.

Based on these findings, it is clear that South African EAPs have varying views about the values of a distinct scoping process although a majority (62%) of the participating EAPs strongly felt that there was indeed value.

4.6.1.1 Definite value in distinct scoping

The majority of the participating EAPs (62%; 23 of 37) who indicated that a distinct scoping process is important provided five key reasons for their opinions. The first reason was that a distinct scoping process is highly beneficial for large, complex and controversial projects with high impacts and high risks. According to EAP 20, “*in larger mining projects, the scope of the project changes regularly as mine planning changes. The more time one has for an application, the better in this instance*”. EAP 22 added that “*scoping, especially dealing with more complex or larger scale projects is most important. The lack of formal scoping during basic assessments prove to sometimes (sic) lead to certain aspects being missed during the assessment. Same only gets recognised during the circulation of the draft BAR for comments. This causes some problems, due to the strict timeframes linked to the processes*”. The second reason provided by some EAPs (e.g., EAPs 2; 8 and 18) was that the distinct scoping process allows for early identification and engagement with I&APs thus possibly preventing potential opposition to the project by obtaining I&AP buy-in and, in turn, saving time and costs. The third reason given by EAPs (e.g., EAPs 18 and 34), was that the PPP in the scoping phase aids in the sharing of local knowledge and also aids in the identification of specialist studies. The fourth reason presented was that PPP caters for information gathering to allow for informed decision-making as part of the precautionary principle (EAP 14). The fifth and last reason shared by the EAPs was that the distinct scoping process is important because it caters for the identification and avoidance of potentially significant impacts and risks, alternatives and fatal flaws (EAPs 14 and 17). One EAP added that scoping is currently a requirement of international funders in order to establish environmental fatal flaws prior to the undertaking of an ESIA/EIA (EAP 17).

In summary, and based on the words of EAP 19 who also indicated that a distinct scoping process is important, it is *“only when you do scoping can you really understand the complexity of the project”*.

4.6.1.2 Some value in distinct scoping

The 22% (8 of 37) of the EAPs who indicated that distinct scoping only has value ‘sometimes’ provided three main reasons. The first reason given was that the distinct scoping process is dependent on the project nature, scale and complexity as the scoping phase is more beneficial for complex projects or those in sensitive areas. According to EAP 7, *“the Scoping Phase can be important in identifying issues that would not otherwise have been picked up without first distributing a report to I&APs and authorities and getting feedback. Some activities (i.e. the clearance of 20ha of veg) shouldn’t necessarily need a Scoping as a Veg (sic) assessment would have been done regardless but a big mining project, is more likely to have issues which need to be addressed in a 2 phased approach”*. The second reason presented was that a distinct scoping process allows the project team to re-examine the design/layout/processes of a project before the commencement of the EIA phase. The third and last reason given by EAPs was that the scoping process can aid in the acquisition of information that assists the EAP and the specialists, especially during the EIA phase.

4.6.1.3 No value in distinct scoping

Eighteen percent (7 of 37) of the participating EAPs indicated that a distinct scoping process has no value. The responses from the EAPs were categorised into four reasons which will be discussed below.

The first reason given was that the requirements for the Scoping & EIA reports and the Basic Assessment Report (BAR) are, to a large extent, similar.

The second reason provided was that scoping is not a once-off exercise, but can continue even into the operational phase for some projects. EAP 4 stated that *“in practice, the scoping process is procedurally ‘separate’ from the EIA phase, but only insofar as the contents of the scoping report and public participation process during the scoping phase are dictated by legislation. The activities of scoping (impact identification, defining the baseline environment etc.) continue throughout the process anyway”*.

The third reason communicated by EAPs who felt that there was no value in a distinct scoping process was that the distinctive scoping process delays the project and results in repetitions between the scoping report and the EIA report. One EAP (No. 31) indicated that the use of the screening tool as a means to identify studies has reduced the need for the scoping process. Another EAP (No. 13) stated that the scoping and EIA process was shorter under the Environment Conservation Act (ECA), 1989 (Act No. 73 of 1989) as *“a short Plan of Study for Scoping was submitted to the Authorising Authority. Parties through accepting this Plan of Study agreed to the scoping approach, after which a Scoping assessment (combined Scoping and EIA) was submitted for final decision”*.

The fourth reason shared was from one EAP who felt that the current scoping process is simply for *“ticking a box that documents have been submitted”* as the timeframes allocated for the process are inadequate and are largely taken up by the 30 day public review period. They added that information that can assist with any decision-making is only available in the EIA (EAP 35).

4.6.2 Suggestions for the improvement of the South African EIA scoping process (Question E2)

The last question of the questionnaire (Question E2) was about EAPs' suggestions on how the South African EIA scoping process could be improved. The results yielded 17 categories of suggestions based on the highest score of 22% (8 of 37) to the lowest score of 3% (1 of 37). These categories were identified through a thematic analysis that is discussed in greater detail in Section 3.3 in Chapter 3 which presents the Research Methodology. The themes and in turn the criteria are presented in Table 4-2 and Figure 4-18 respectively.

Table 4-2 shows the various themes identified under Question E2. These include EAP qualifications and experience, public participation and the undertaking of a scoping process similar to that of Environment Conservation Act (ECA) Regulations. It must be noted that the theme 'other' was identified for responses that could not be classified under any theme. This theme has not been included in Table 4-2 but is discussed in Section 4.6.2. In addition to this, where EAPs indicated that they did not have any comments in response to Question E2, this theme was not included in the table.

Table 4-2: Themes and phrases identified from responses to Question E2 of the questionnaire.

Themes identified from responses to Question E2	Phrases identified from responses to Question E2
EAP qualifications and experience	"not technically qualified" "experience of the EAP"
Improvement of timeframes	"length of time", "timeframes linked to scoping should also be adjusted", "fast tracking the approval", "faster approvals by government", "regulated timeframes"
CA competency for guidance	"competence from the authorities", "better qualified case officers", "competent officials in the department"
Public Participation	"canvass views from keys stakeholders", "comments received from all parties", "conduct sufficient public consultation"
Avoidance of tools that think for EAPs	"tools" to do the thinking for us"
Authority comments on scoping report	"more effort to comment on the ["draft"] scoping reports"
Reliable GIS information and EAPs knowledge of GIS usage	"stronger emphasis on reliable GIS information can greatly improve the scoping process", "EAPs today still are not familiar with the technology"
Scoping process similar to that of ECA Regulations	"approach used to be adopted in the 'old' EIA regulations", "very much like pre-2006 EIA regulations" "as per the old ECA legislation and regulations"
Implementation and auditing	"issues are associated to implementation and not the assessment itself". "very good legislation but it is not policed as it should be"
Stricter impact verification	"stricter impact verification when conducting impact assessment and risk assessment"
Removal of distinct scoping process	"submission of a final Scoping /EIA (combined) report", "scrape it".
Identification of feasibility and potential fatal flaws	"identification of potential "fatal flaws", "feasible and environmentally sound"
Simplified scoping process	"providing an 'out' at the end of this stage", "non -assessment identification of issues", "requirements of a scoping report shall be limited to project description and possibly a list of potential impacts and not a detailed impact assessment."
Fewer prescriptive triggers for scoping	"triggers should be less prescriptive and based on individual project risk"
No suggested improvements	"nothing that I believe should change or be improved", "I do not really have issues with the current processes", "no suggestions"

The categories on suggestions to improve the South African EIA scoping process as a result of the identification of themes are presented in Figure 4-18. The top five categories in terms of scores were those between 22% (8 of 37) and 8% (3 of 37). These pertained to: 'improvement of time frames' (22%; 8 of 37) as the highest category; 'improved public participation process' (PPP) with a 16% (6 of 37) score as the second highest category and

'CA competency' with a score of 14% (5 of 37) score as the third highest. The fourth highest category with a score of 11% (4 of 37) was shared by two categories which were suggestions about how the current 'scoping under NEMA to be similar to scoping under ECA' as well as how there needs to be 'implementation and auditing'. The last of the fifth highest categories with a score of 8% (3 of 37) and shared by four categories were EAP qualifications and experience, simplified scoping process, other suggestions and no suggested improvements.

The other categories that did not fall within the above-mentioned top five categories are those with a score of 5% and 3%. The categories which scored 5% (3 of 37) were 'removal of a distinct scoping process', the 'identification of feasibility and potential fatal flaws', and 'no comments'. The categories with a score of 3% (1 of 37) were allocated to suggestions regarding 'avoidance of tools that think for EAPs', 'authority comments on scoping report', 'reliable GIS information and EAPs knowledge of GIS usage', 'stricter impact verification' and 'fewer prescriptive triggers for scoping'. These categories also emerged from a thematic analysis.

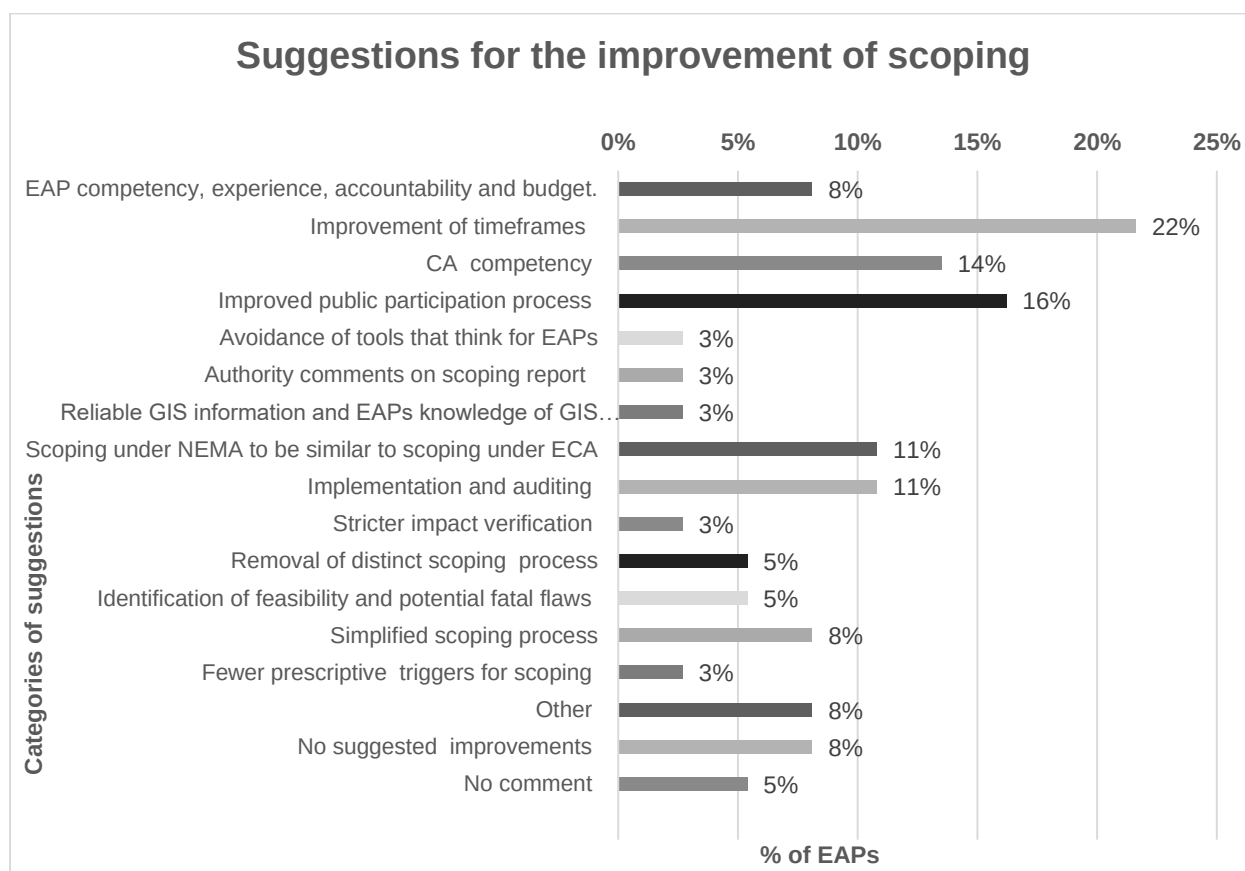


Figure 4-18: Suggestions of EAP on the improvement of scoping (Question E2).

A discussion about each of the findings will be presented based on the top five categories and other suggestions that are not in the top five categories.

4.6.2.1 Top five suggestions based on scores

The top five suggestions presented in this section are those with a score ranging from 22% to 8%. These scores were based on the thematic analysis of the responses of EAPs to the open-ended Question E1 which pertained to suggestions on how the South African scoping process can be improved.

4.6.2.1.1 Improvement of time frames

The 22% (8 of 37) of EAPs who suggested improvement of time frames felt that the currently-legislated period (approximately 87 days from the time of the submission of the application form for environmental authorisation until the decision of the Competent Authority(CA) on whether or not to accept the scoping report), limits the effectiveness of scoping.

The first suggested improvement with regards to time frames was that the delay in the CA's decisions on the scoping reports despite the legislated time frames must be addressed. The consequence of this as indicated by one of the EAPs (No. 33) was that they often proceed with the EIA phase of the project inclusive of the commissioning of specialist studies in the absence of CA feedback. This will also, in turn, result in the delay of the EIA phase. One EAP raised a concern that there are no *“repercussions or accountability”* on the part of some CAs who delay decisions as per the legislated time frames (EAP 4).

The second suggestion made by EAPs concerning time frames was that the current time frames allocated for scoping must be eliminated as they limit scoping effectiveness and the preparation of a final response incorporating comments received from the draft scoping report. EAP 18 stated that *“I do ESIA across Africa and SA is the ONLY country with these timeframes. All they do is put pressure on the EAP and developer – this does not help the process or the quality of the EIA”*.

The last suggested improvement was for authorities to exercise flexibility and allow for the submission of a scoping report without an application number to cater for any amendments to the proposal, to avoid withdrawals of applications (EAP 28).

In summary and based on the opinion of EAP 31, *“if the scoping were included in the EIA report, it would dramatically assist with the length of time EIA projects take. More emphasis can be placed on the draft EIA report”*. The necessity for adequate time for scoping has also been discussed in literature by sources such as Middle and Middle (2010) and the Environment Institute of Australia and New Zealand (undated).

4.6.2.1.2 Improved public participation process

The necessity to improve the PPP in scoping was discussed by 16% (6 of 37) of EAPs. The suggestions presented by EAPs will be discussed here.

The first suggestion from one of the EAPs was that the final scoping report, along with other final reports compiled within the EIA system, should be made available to I&APs to examine how their comments were addressed (EAP 2).

The second suggestion is that there should be a legislative requirement for the compilation and translation of non-technical summaries of scoping reports as a means *“to ensure applicants conduct sufficient public consultation”* (EAP 20). While not directly providing a suggestion similar to that made by EAP 20, EAP 27 mentioned that PPP in scoping can be improved by a *“better understanding by stakeholders as a lay man on the EIA process and value of scoping”* (sic).

The third suggestion was that while the EAP can still undertake scoping inclusive of its PPP, the EIA phase or BA, where applicable, should be undertaken *“by the decision maker, allowing for a transparent and independent process”* (EAP 8).

The fourth suggestion made by EAP 29 under PPP was that there needs to be greater emphasis on the role and importance of I&APs by the EAP. The CA must also be active in PPP as only EAPs, and in some cases the specialist, make contact with I&AP; it would be beneficial if I&APs were afforded an opportunity to engage with the CA through open days, focus group meetings, and so on as these are independent parties. EAP 29 further suggested that an independent facilitator, not paid by the developer and with an understanding of the EIA system, can be appointed to undertake PPP and collect comments on behalf of the EAP who can then respond to them. EAP 29 did not however suggest which party would pay the aforementioned independent facilitator.

Lastly, the fifth suggestion, which could also be deemed a concern, was that there needs to be a receipt of comments on the scoping report from various I&APs as this is currently lacking

in the PPP yet the receipt of the comments have proved valuable in the undertaking of historical projects (EAP 17).

4.6.2.1.3 Competent Authority competency

Fourteen percent (5 of 37) of the participating EAPs provided suggestions regarding CA competency and the provision of guidance as one of the means for the improvement of the South African scoping process. These suggestions were focused on whether or not a CA can make good judgements based on a case-by-case approach, and not simply on legislative requirements. The EAPs stated the ability to make the judgements would however require CA competency and that the CA would have to make judgement on three key aspects. The first could be fewer prescriptive triggers for scoping as discussed in Section 4.6.2.2.2. The second could be for the CA to be able to judge the effectiveness of I&AP consultations and whether or not the PPP undertaken was adequate to ensure the involvement of I&APs. The last aspect could be that the CA would have to make judgements on the quality and/or thoroughness of documents submitted to the CA. One EAP stated that *“the government officials that review the documents often lack experience and insight and rely on checkboxes instead of applying their minds. Officials that review the documents should also have stringent qualification criteria as is placed on the EAP”* (EAP 21). In addition to the above, another EAP 2 added that Final Scoping Reports are approved even though there were shortcomings with the Draft Scoping Report such as in some cases where I&APs were not identified or their comments were only incorporated in the Final Scoping Report.

4.6.2.1.4 Scoping under NEMA to be similar to scoping under ECA

Eleven percent (4 of 37) of the participating EAPs raised comments which made reference to the Environment Conservation Act (ECA), 1989 (Act No.73 of 1989) Regulations (Department of Environmental Affairs and Tourism, 1997a; Department of Environmental Affairs and Tourism, 1997b). Four EAPs were of the opinion that the current scoping process could be amended so that it is similar to the process in the aforementioned regulations in which at the conclusion of the scoping process there was a possibility for the issuing of an environmental authorisation and the subsequent EIA process would be undertaken only when necessary (EAPs 1, 6, 13 and 30).

It is important to note that the EAPs who made reference to the ECA Regulations were those with experience of 16 years or more as per the information presented in Section 4.2.4 and who most likely undertook scoping under these regulations.

4.6.2.1.5 Implementation and Auditing

Eleven percent (4 of 37) of the participating EAPs indicated that while the South African scoping process is thorough, it is in the implementation phase of the project that there are challenges as the auditing of compliance is lacking. Some EAPs added that companies must be held accountable as issues arise in implementation and not assessment (EAPs 32 and 37). Another EAP added that there needs to be uniformity in the auditing of industries as some are over-regulated and others are not regulated (EAP 27). EAP 11 stated that *“as it stands the Scoping and EIA phase in South Africa is very thorough. What is legally required in the report is very thorough. The short falls (sic) come with the implementation of it from people at a mine or a factory etc., as well as the Departments that are to audit compliance”*.

As discussed earlier in Section 1.1.1 in Chapter 1 one of the key objectives of scoping is to identify impacts that must be further discussed in the EIA phase (UNEP, 2002; Jalava *et al.*, 2010; Department of Environmental Affairs, 2018; IAIA, 2018). In a study by Wood (1999) the importance of auditing impacts predicted during scoping was emphasised and was highlighted as one of the ways by which impact prediction can be improved. Further to the above, Wood *et al.*, (2006:223) having compiled a list of “features that could be seen to constitute the ideal nature and principles of scoping in EIA” as collated from various earlier literature states that one of these would be where impacts identified in scoping are audited through various project phases.

4.6.2.1.6 EAP competency, experience, budget and accountability

Eight percent (3 of 37) of EAPs felt that although the current scoping process is good, its correct implementation is however based on EAP competency as well as experience. With reference to EAPASA which was discussed in greater detail in Section 4.2, EAP 4 shared that part of the improvement of scoping was to ensure that EAPs are registered and accountable for any oversights by stating that *“We’ve definitely taken a step in the right direction, with EAPASA and the requirement for EAPs to be registered. The delay in legislative developments (which would make it compulsory for EAPs to be registered with EAPASA) is disappointing.*

There are too many people in SA that call themselves ‘EAPs’ and practice as EAPs while not technically qualified and without the required experience and oversight, and very little if any accountability if the said ‘EAP’ misses something. EAPASA will hopefully change that. In addition to the above, one EAP (No. 21) also discussed the “*budget of the EAP*”. It is unclear if this refers to the project budget or the contractual value of the scoping and EIA process.

In defining competence in professionals, inanimate objects, etc., Mulder (2011:12) defines the term as the ability “to perform effectively”. Mulder (2011) further adds that professional registration is one of the means through which competence in a field of study can be checked. Based on the findings of this study on scoping effectiveness, this linkage between competence of EAP professionals, their professional registration and attaining effective scoping was also recognised by the participants in the study. Furthermore and according to IEMA (2011), effective scoping increases the confidence of stakeholders in the EAPs competence.

Regarding accountability, and while discussed under the field of Nursing, Rubio-Navarro *et al.* (2019) mentions how the concepts of ethics, values and good decision-making, are key to accountability. Ethics as part of professional accountability is also mentioned by Sheate (2012).

4.6.2.1.7 Simplified scoping process and report

Eight percent (3 of 37) of the participating EAPs felt that the scoping process and report could be simplified as the current process results in numerous duplications between the scoping report and the EIA report. The EAPs felt that that the scoping report should be limited to project description, identification of key impact, issues, and concerns as well alternatives, and should not include the assessment of the impacts as per the current scoping process (EAPs 1; 15 and 36). EAP 1 was of the opinion that “*scoping should not be smudged into a ‘sort of EIA’ itself, which is currently the case – in many ways the current scoping is a bit like a watered down EIA*”. EAP 15, while not explicitly mentioning the ECA regulations as discussed in subsection 4.5.2.1.4, alluded to these by saying that there needs to be a “*return to a non-assessment identification of issues scoping to feed into the EIA... Yes, identification of issues during scoping to asses during the assessment phase*”. The suggestion of EAPs to simplify the scoping report due to the comprehensive nature of the legislative requirements for scoping was noted and raised as a concern in literature by authors such as Mbhele (2009:25) Sandham *et al.* (2005:52) discussed under section 2.2.

4.6.2.1.8 Other

Another eight percent (3 of 37) of EAPs provided comments that could not be placed under any of the other categories that were identified by the researcher. These were: (i) *“the EIA process has become very cumbersome/technical, even for small projects”* and should not be so (EAP 7); (ii) there needs to be improved communication between authorities and EAPs particularly regarding expectations about the scoping process (EAP 5), and (iii) in addition to key impacts, scoping should set the limitations of the assessment (EAP 9).

4.6.2.1.9 No suggested improvements

Despite the suggestions provided by other EAPs with regards to the improvement of the South African scoping process, some EAPs (8%; 3 of 37) felt that the process did not need any improvements provided it is undertaken accordingly. In addition to these and instead of providing the suggestions to scoping, one EAP (No. 23) raised concerns about how other environmental management aspects such as CA templates and the Water Use License process needs improvement.

4.6.2.2 **Other suggestions that are not in the top five categories based on score**

The suggestions presented under this heading are those which was discussed by 5% (2 of 37) and 3% (1 of 37) of the participating EAPs.

4.6.2.2.1 Removal of distinct scoping process

Five percent (2 of 37) of the participants suggested the elimination of a distinct scoping process and the submission of a single report in which scoping is integrated with the assessment phase. EAP 13 suggested a process that would involve the following to reach authority decision:

- Submission of an application form together with the report generated by the DEFF screening tool as well as draft plan of study for scoping or EIA; and
- Subsequent to the acceptance of the above, a comprehensive process inclusive of the PPP.

In support of EAP 13 regarding the suggestion on the removal of the distinct scoping process, EAP 35 said *“scrape it. Rather implement pre-application meetings (similar process of Department of Water and Sanitation) – in that meeting the EAP must present the project and the department must thereafter instruct which legislation and specialist reports must be submitted”*.

4.6.2.2.2 Identify feasibility, desirability, alternatives and potential fatal flaws

Another five percent (2 of 37) of the EAPs demonstrated that scoping should be used for the identification of feasibility, needs and desirability, alternatives as well as potential fatal flaws (EAPs 14 and 37). It is important to note that a discussion on desirability as well as alternatives is already a requirement of the scoping process as set out in the EIA NEMA Regulations. Concerning feasibility and fatal flaws, these are not explicitly stated as a requirement for the scoping report (Department of Environmental Affairs, 2018). While these EAPs made these suggestions, they however did not suggest how these aspects could be incorporated into the scoping process so that they are specifically discussed in the scoping report.

The suggestions presented under this heading are those provided by 3% (1 of 37) of the participating EAPs. A total of four (4) of these suggestions were provided by each of the EAPs whose comments contributed to a score of 3% i.e. 1 out of 37 EAPs. The first was that there needs to be an *“avoidance of tools that ‘think’ for EAPs”* (EAP 4). This concern raised by one of the EAPs was that instruments such as the National Screening Tool (<https://screening.environment.gov.za/screeningtool/#/pages/welcome>) bears resemblance to a ‘tick-box’ approach and ‘thinks’ for the EAP (EAP 4).

The second suggestion made by one of the EAPs was that the authorities need to make greater effort to comment on the draft scoping report must be made by authorities as per the *“process”* (sic) (EAP 22). It is assumed that the ‘process’ that the EAP mentions refers to is legislation.

The third suggestion was the availability of reliable GIS information and EAPs’ knowledge of GIS usage (EAP 4). *“Stricter impact verification”* necessary for impact assessment and risk assessment was identified as the fourth suggestion for the improvement of scoping in South Africa (EAP 12).

The final suggestion was that “*triggers for scoping need to be less prescriptive and these triggers*” (EAP 25) should be based on specific project risk but necessitates authorities with the competence to make the necessary judgements.

4.7 Criteria against which to evaluate the effectiveness of scoping

Based on the overall research findings and in order to achieve Research Objective 3 which is to develop criteria against which to evaluate the effectiveness of scoping, the proposed criteria are shown in Table 4-3 below. These criteria are grouped according to the participating EAPs’ feedback under each section of the questionnaire and the accompanying discussions presented in Chapter 4. The criteria are limited to those that can be easily verified or realised through legislative changes or emphasis on the current legislative requirements that can affect scoping effectiveness. Without disregarding responses on questions such as E2 on the most important criteria that I&APs must fulfil to contribute to effective scoping, responses pertaining to aspects such as the nature of comments from I&APs (e.g., I &APs’ provision of objective and not subjective comments, I&APs display of honesty and possession of correct motives) and the extent of I&AP engagement (e.g., I&APs review of information provided by the EAP and I&APs sharing the information they have) have been excluded from the criteria as these cannot be enforced legally due to each person’s right to participate in a manner that suits them even if this does not benefit the scoping process. An example of this was a suggestion that I&APs should offer subjective instead of objective comments, review information provided to them, display honesty, and have correct motives-during the PPP.

Table 4-3: Criteria to address Research Objective 3.

Section of Questionnaire	Criteria against which to evaluate the effectiveness of scoping
1. Background of the EAP	- Lead EAPs compiling the scoping report must either be registered with EAPASA or eligible to register with EAPASA. - The Lead EAP must have a minimum of three years working experience. - The Lead EAP must have compiled at least three scoping reports.
2. Impact identification	The scoping report must include the summary of impact identification methods utilised and the reasons thereof.
3. EIA scoping effectiveness	The scoping report must include statements indicating the application of the <i>procedural, substantive, transactive, and normative effectiveness</i> criteria.

Section of Questionnaire	Criteria against which to evaluate the effectiveness of scoping
4. Public participation	• Proof of the EAP's attempts for active engagement of I&APs must be provided. • Summary of a draft scoping report must be compiled and translated into at least one local language in addition to English.
5. General scoping process	• Reasonable timeframes for the scoping process must be allowed to ensure the effectiveness of the process. • CA to adhere to timeframes in the provision of comments for both the draft and final versions of scoping reports. • CA efforts to provide comments on scoping. • EIA phase to commence only after comments from the CA on final scoping report have been received. • The final scoping report must be provided to all I&APs and not only the CA.

4.8 Conclusion

Chapter 4 has presented the data analysis as well as a discussion based on the input of EAPs on the effectiveness of the scoping process. The discussions, according to the five sections presented in the questionnaire, have revealed that the effectiveness of scoping could be improved in various ways such as the improvement of timeframes to cater for adequate scoping, comments of the CA on scoping reports, and active engagement of I&APs regardless of the timing of the scoping process when some information is unavailable.

In the identification of impacts and focusing on the top three methods, it was established that all participants utilise professional experience and judgement above all other methods. This is then followed by input from I&APs and input from authorities in the third highest category. Furthermore, it emerged that while a large number of EAPs apply different methods for impact identification based on sector, location or other project factors, specialist studies is the method utilised by a large majority of EAPs during the scoping phase in order to identify impacts that will be addressed in the EIA phase.

With regards to the four categories of effectiveness, the results of this study indicate that the *procedural effectiveness* criterion is the one largely always considered by EAPs. This finding is in line with literature which indicates that this category of effectiveness is also the most widely assessed.

Under public participation as the fourth subject of the questionnaire and specific to the criteria that I&APs must fulfil, the top three categories were firstly 'active engagement and information review and sharing', 'the understanding of the proposed development was second' and in third

place was the 'objective, factual and unemotional contribution' of I&APs together with the suggestion that I&APs must be 'directly interested and affected' by the proposed development. Concerning the undertaking of public participation during scoping when some information about the project is unavailable, the majority of EAPs felt that while this had limitations, it was largely useful as it provided numerous benefits to the client and the project team inclusive of the EAP. These benefits include aspects such as the provision of local knowledge, the contributions to the shortcomings of once-off specialists and the early involvement of I&APs to obtain their support on the proposed development.

Concerning the last subject of the study as set out in the questionnaire and concerning the general scoping process, the majority of EAPs indicated that there was value in a distinct scoping process as part of the EIA in comparison to scoping in a BA where scoping is integrated with the assessment phase. Under the various suggestions on how South African scoping can be improved, the top three suggestions were firstly the improvement of timeframes for scoping, secondly the improvement of the PPP in scoping, and thirdly EAPs' need for CA officials to have the competency to identify scoping reports that meet minimum requirements.

Regarding the development of criteria against which to evaluate the effectiveness of scoping in line with Research Objective 3 of this research study, these were developed based on the responses of EAPs and aligned to literature. The criteria were however only limited to aspects that can be addressed through legislative changes.

In conclusion, the findings of this chapter have not only attained all three Research Objectives that were set out in Chapter 1, but have also provided a voice to the South African EAPs on the scoping process in terms of its strengths as well as its shortcomings. The suggestions made by EAPs could be useful to authorities and legislators as role players in ensuring the effectiveness of scoping. In the next chapter, the conclusions of the study and the recommendations will be covered.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

Scoping is one of the earliest steps in the Environmental Impact Assessment (EIA) process; it is preceded by screening and succeeded by the impact assessment or impact analysis phase (UNEP, 2002; Fischer and Philip-Jones, 2008). Scoping is aimed, mainly, at determining the key potential environmental impacts from a proposed development and which must be addressed during the EIA phase. Scoping can nonetheless persist throughout the EIA process as new impacts, issues and other matters are identified (Sadler, 1996; UNEP, 2002; Fischer and Philip-Jones, 2008; IEMA, 2011). Against this background, the aim of this study was to determine the perceptions of South African Environmental Assessment Practitioner (EAP) consultants of the effectiveness of EIA scoping. In order to meet this aim, three Research Objectives were set:

- 1) To determine the role and importance of scoping in the EIA process;
- 2) To determine the perceptions of South African EAP consultants towards effective scoping; and
- 3) To develop criteria against which to evaluate the effectiveness of scoping.

Effectiveness is defined by Sadler (1996:37) as “whether something works as intended and meets the purpose(s) for which it was designed”. It was important to obtain the views of EAPs as they are one of the parties who have the knowledge, skills and experience in the scoping process (Snell and Cowell, 2006; Hansen and Wood, 2016, Kågström, 2016). This study is significant as EAP consultant perceptions, specifically on the effectiveness of scoping in EIA for a South African context, has not been researched until now.

Chapter 1 of this dissertation introduced the research study by discussing the importance of an effective scoping phase as a means to address the criticisms against the broader EIA process and how EAP consultants can contribute towards this identified means. Chapter 2 presented the literature review covering aspects such as EIA effectiveness categories and the methods for the identification of impacts for assessment. Chapter 3 covered the research methodology followed for this study to attain the set aims of effective scoping and this research’s objectives. Chapter 4 presented the analysis of the findings and the discussion thereof. Based on the above, the purpose of this concluding chapter is to summarise the study findings, to discuss the conclusions, to summarise the contributions to indicate how the objectives were achieved, and lastly to provide recommendations for future research in scoping practice.

5.2 Summary of main findings and conclusions

From Chapter 1 on the introduction, the literature review discussed under Chapter 2 as well as the results of the empirical study covered under Chapter 4, the three Research Objectives were met. This will be discussed below.

Research Objective 1 was to determine the role and importance of scoping in the EIA process. In the introduction in Chapter 1's introduction and in the literature review in Chapter 2, it emerged that scoping serves as a 'funnel' to identify and focus issues and impacts that will need to be discussed in the EIA phase as a means to save money and time on a project (Mulvihill, 2003:40; Jalava *et al.*, 2010; IAIA, 2018). Furthermore, scoping also serves other purposes such as defining the terms of reference for specialists and presenting impact assessment methods (Sadler, 1996; UNEP, 2002; Hansen and Wood, 2006; Snell and Cowell, 2006; Badr, 2009; Jalava *et al.*, 2010; Department of Environmental Affairs, 2018; IAIA, 2018). In Chapter 4, covering data analysis and discussion, EAP consultants were of the opinion that while key information such as specialist findings is unavailable during the scoping phase, the majority of EAPs felt that scoping held major value as one of the means of not only introducing the project to I&APs but also obtaining their views, information on local knowledge, suggestions for alternatives and support for the project. Moreover, the EAP consultants were of the opinion that while the scoping process is important, it must be improved through various means such as the extension of timeframes for scoping, amendments in the public participation process (PPP) requirements undertaken for scoping as well as EAP and Competent Authority (CA) competency. Based on the above discussion, it is evident that the first Research Objective was met.

Research Objective 2 was to determine the perceptions of South African EAP consultants on effective scoping. In order to determine these perceptions a mixed methods research approach comprising the integration of the quantitative and qualitative research methods was adopted for this research study; this approach is presented in Chapter 3. A total sample of 37 South African EAP consultants took part in this study through a self-administered survey questionnaire comprising of five sections and 17 open- and closed-ended questions. In addressing Research Objective 3, four key findings of the study emerged from the responses provided by EAPs in Sections B to E of the questionnaire.

First, as impact identification is one of the key purposes behind the undertaking of scoping (UNEP, 2002; Hansen and Wood, 2006; Fischer and Phylip-Jones, 2008; Jalava *et al.*, 2010;

IAIA, 2018), professional experience and judgement is the method utilised by all EAPs in impact identification. Further to this, the results indicated that while specialist studies are meant to be undertaken during the EIA Phase as per the Department of Environmental Affairs, (2018), a significant portion of EAPs commission the undertaking of specialist studies during the scoping phase to aid in impact identification. In addition to this, a majority of EAPs indicated that they utilise different methods for impact identification based on specific project details. Second, and concerning the four categories of effectiveness, the results of this study indicate that the *procedural* criterion is the one largely *always* considered by EAPs and is also most assessed. These findings correspond with the literature presented in Chapter 2 in Section 2.4 (Loomis and Dziedzic, 2018; Runhaar *et al.*, 2019). Third, and pertaining to PPP in the scoping process as one of the earliest stages in stakeholder engagement within the wider EIA process (UNEP, 2002; IEMA, 2011), the majority of EAPs were of the opinion that active engagement and information review and sharing was of key priority to successful PPP in scoping. Further to this, while PPP during scoping is undertaken when some project information is unavailable, EAPs indicated that this was nevertheless a useful exercise as it provided not only I&APs support on the proposed development, but also aided in providing important information such as local knowledge. The fourth finding was with regards to the value of a distinct scoping process. While some EAPs felt that the current distinct scoping process should be done away with, the majority felt that it should be retained but amended through various means with the most common suggested measure being the extension of timeframes for scoping to ensure its effectiveness. In summary, while the majority of South African EAPs recognised the value of scoping, they felt that the effectiveness of scoping could be improved through various means such as the improvement of timeframes, the improvement of public participation, EAP consultant competency, CA competency and a simplified scoping process. Based on the above discussion, it is evident that Research Objective 2 was met.

Research Objective 3 was to develop criteria against which to evaluate the effectiveness of scoping. In Chapter 4, the criteria were developed around the five sections of the questionnaire administered to EAP consultants and were based on the feedback from EAPs - which was also linked to relevant literature as covered in Chapter 2. The criteria were limited to those that could be easily tested or realised through legislative changes or through emphasis on the current legislative requirements that can affect scoping effectiveness. The criteria excluded aspects that required changes in interested and affected parties' (I&APs) conduct as these cannot be legally enforced. The criteria that can be realised through amendments to legislation include the need for the Lead EAP consultant and the EAP official holding primary responsibility for the review of a scoping report to fulfil criteria such as Environmental

Assessment Practitioners Association of South Africa (EAPASA) registration or eligibility for registration with EAPASA and the compilation or review of a minimum of three scoping reports, respectively. Other criteria pertained to the outlining of impact identification methods as well as an indication of the application of the four categories of effectiveness - all of which are covered in detail in Chapter 2. Under public participation, the criteria included the need for the compilation and translation of the scoping report summary as well as the need for EAPs to prove their efforts at the active engagement of I&APs. Regarding the general scoping process, the criteria suggested included, but were not limited to, the need for reasonable timeframes for undertaking the scoping process, CAs should make efforts to provide comments on the draft and final scoping reports and provide these on time as per legislative requirements, and that the final scoping report must be provided to all I&APs and not only the CA. Based on the above discussion, it is clear that Research Objective 3 to develop criteria against which to evaluate the effectiveness of scoping was achieved.

5.3 Contributions and recommendations for future research and practice

This study is significant because it gave South African EAP consultants a voice regarding the various aspects of scoping, including how *they* perceive the process can be improved in order to be effective. Some of the suggestions made could be incorporated into legislative changes, particularly the NEMA EIA regulations, which, if implemented, can lead to the scoping process realising its potential as covered in both local and international literature.

The three areas of recommendations for future scoping practice in South Africa are:

- The final scoping report (along with other Final Reports compiled within the EIA process) should be made available to all I&APs and not only the CA. This will not only allow I&APs to check how their comments were addressed or incorporated into the scoping report, but will also increase their knowledge about the EIA process and reporting mechanisms while allowing them access to the same document submitted to CAs should they wish to make queries or appeals on any decisions made;
- Desktop specialist studies should be undertaken within the scoping phase to aid in the identification of site sensitivities and impacts based on the current EAP practice as discussed in Section 4.3.1 in Chapter 4, and also because impacts and sensitivities are already requirements of a scoping report as set out in the current EIA Regulations (Department of Environmental Affairs, 2018). The list of the proposed specialist studies should be included in the Application for Environmental Authorisation which should be amended to make allowance for this. The inclusion of the list of specialist studies will

tie in with the current requirement for the submission of the National Screening Tool which also covers recommended specialist studies; and

- While the scoping report can include findings of desktop specialist studies, the scoping report requirements must be simplified and not mimic the EIA report as discussed by Sandham *et al.* (2005) and Mbhele (2009). As per the suggestions of EAPs 1, 17, and 37, only key information such as project description, areas of concern and a list of potential impacts and alternatives should be covered. The detailed impact assessment should be excluded from scoping and need only be covered in the EIA Report.

The following are recommended areas of future research as identified during the undertaking of this study:

- As the current study was focused on EAP consultants, this study could be expanded to include EAP officials who review scoping and other reports undertaken within the broader environmental assessment scope;
- Taking into consideration the findings that scoping is undertaken for various sectors, future studies could explore EAPs' perceptions (either EAP consultants or EAP officials) on scoping in a specific sector;
- Future studies on scoping effectiveness could focus on one element of the scoping process (e.g., public participation, authority consultation, content of scoping report) ; and
- Future scoping effectiveness studies can focus on one of the four categories of effectiveness, namely: procedural, substantive, transactive or normative.

In conclusion, taking into consideration the criticisms of the EIA process regarding the required time and money (Bond and Morrison-Saunders, 2013; Pope *et al.*, 2013; Morrison-Saunders *et al.*, 2015; Roos *et al.*, 2020), Morrison-Saunders *et al.* (2014) suggest that the enhancement of scoping is one of the ways that EIA effectiveness can be improved. IAIA (2018) further adds that an effective and efficient assessment process is a result of good scoping. Canter and Ross (2014:21) support this notion by stating that “good scoping is essential for effective impact assessment”. In the words of Sadler (1996:113) “scoping is the foundation for effective EIA”. It is in this scoping that EAP consultants play a great role and in turn formulate views about the process (Morrison-Saunders and Bailey; 2009; Kågström and Richardson, 2015; Duarte *et al.*, 2017). It was against the above that the aim of this study was to determine the perceptions of South African EAP consultants on the effectiveness of EIA scoping. The implementation of the recommendations for future practice can help to improve scoping

effectiveness. Moreover, changes made to the scoping process will help future EAPs to address the criticisms of EIA when undertaking their work.

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ANNEXURE A: SURVEY QUESTIONNAIRE



Institution: North-West University

Campus: Potchefstroom

Field of Study: Master of Environmental Management

Mini-dissertation title: Perceptions on the effectiveness of EIA scoping in South Africa

Student Name: Ntsebo Mkhize

Email Address: nmofoka6@gmail.com

Contact number: 072 550 9669

Supervisor: Dr. L. Kruger (20768222@nwu.ac.za)

Ethics number: NWU - 01315 – 20 - A9

Dear participant,

My name is Ntsebo Mkhize. I am a Masters student in Environmental Management at the North-West University. My mini-dissertation focuses on the perceptions of Environmental Assessment Practitioner (EAP) Consultants on the effectiveness of Environmental Impact Assessment (EIA) scoping in South Africa. The objectives of this study are:

- 1) To determine the role and importance of scoping in the EIA process;
- 2) To develop criteria against which to evaluate the effectiveness of scoping; and
- 3) To determine the perceptions of South African EAP consultants on the effectiveness of EIA scoping.

Data obtained from EAP consultants such as yourself will not only aid in reaching the objectives of the study, but will contribute to EIA research in South Africa. Participation in the study will take place on a voluntary basis. Furthermore, the anonymity, privacy and confidentiality of participants are guaranteed.

This structured questionnaire consists of 15 questions which are organised around five (5) research topics. The estimated time required to complete this survey is no more than 30 minutes. Please send the completed questionnaire to nmofoka6@mail.com by latest 20th July 2020.

Thank you in advance for your participation and valuable contribution to this study.

Kind Regards

Ntsebo Mkhize

QUESTIONNAIRE ON THE PERCEPTIONS OF EAP CONSULTANTS ON THE EFFECTIVENESS OF EIA SCOPING IN SOUTH AFRICA

Instructions:

- Please use a **X** to indicate your selection
- Please elaborate where necessary

SECTION A: BACKGROUND OF EAP CONSULTANT

A1 What is your highest level of qualification?

<i>A. Certificate</i>	<i>B. BSc/ BA</i>	<i>C. MSc/ MA</i>	<i>D. PhD</i>	<i>E. Other</i>

If your response is (E) Other, kindly elaborate on your qualification details:

--

A2 Are you registered with any of the below professional registration bodies?

A. <i>Environmental Assessment Practitioners Association of South Africa (EAPASA)</i>	B. <i>South African Council for Scientific Natural Professions (SACNASP)</i>	C. <i>Other</i>	D. <i>None</i>

If your answer is C (Other), kindly provide the name/s of the professional registration body/ies:

--

A3 Are you a member of any environmental voluntary organisation e.g. International Association for Impact Assessment South Africa (IAIAsa), or Environmental Law Association (ELA)?

A. <i>Yes</i>	B. <i>No</i>

If your answer is A (Yes), kindly provide the name/s of the organisation/s in full as well as the acronym where applicable:

--

A4 How many years of working experience do you have in EIA?

A. 1-5 years	B. 6-10 years	C. 11-15 years	D. 16 years and above

A5 What is the number of Basic Assessment (BA) reports you have prepared in the last 10 years?

A. 1-5 reports	B. 6-10 reports	C. 10 reports and above

A6 What is the number of scoping and EIA reports you have prepared in the last 10 years?

A. 1-5 reports	B. 6-10 reports	C. 10 reports and above

A7 In which sectors have you undertaken scoping and EIAs? Select more than one where applicable.

A. Electricity (generation, transmission, etc.),	B. Water (storage, bulk supply etc.)	C. Sewerage (pipes, wastewater treatment facilities, etc.)	D. Buildings (housing, offices, institutions, etc.)	E. Roads and transportation	F. Other

If your answer is F (Other), kindly provide the name/s of sector/s:

--

SECTION B: IMPACT IDENTIFICATION

B1 Which methods do you use to identify impacts to be addressed in the EIA phase?

A. Professional experience and judgement	B. Input from other EAP consultants	C. Input from Authorities	D. Checklists	E. Input from Interested and Affected parties	F. Consultation of Reports on similar projects	G. Other

If your answer is G (Other), kindly elaborate

--

B2 Do you apply different methods for impact identification for different projects based on a sector, (e.g. energy vs. housing), location (e.g. area with high environmental sensitivity vs. area with low environmental sensitivity) or other factors? Kindly elaborate on your answer:

SECTION C: EIA SCOPING EFFECTIVENESS

Background

In the 1996 '*International Study of the Effectiveness of Environmental Assessment*' compiled by Barry Sadler, effectiveness is defined as "whether something works as intended and meets the purpose(s) for which it was designed". Effectiveness in EIA covers all steps inclusive of scoping. The categories of EIA effectiveness as covered in recent literature are as follows:

- *Procedural*: the degree to which the EIA corresponds with set procedures, provisions, practices, principles, etc. based on legislation and other measures;
- *Substantive*: the degree to which the EIA meets its aims, goals, objectives, etc.;
- *Transactive*: the degree to which the EIA meets its aims, goals, objectives, etc. within the least time and cost; and
- *Normative*: the degree to which the purposes of legislation, policies, etc. are attained in EIA e.g. the achievement of sustainable development

C1 To what extent have you considered *Procedural effectiveness* (the degree to which the EIA corresponds with set procedures, provisions, practices, principles, etc. based on legislation and other measures) when undertaking scoping?

A. Always	B. Frequently	C. Occasionally	D. Seldom	E. Never

C2 To what extent have you considered *Substantive effectiveness* (the degree to which the EIA meets its aims, goals, objectives, etc.) when undertaking scoping?

A. Always	B. Frequently	C. Occasionally	D. Seldom	E. Never

C3 To what extent have you considered *Transactive effectiveness* (the degree to which the EIA meets its aims, goals, objectives within the least time and cost) when undertaking scoping?

A. Always	B. Frequently	C. Occasionally	D. Seldom	E. Never

C4 To what extent have you considered *Normative effectiveness* (the degree to which the purposes of legislation, policies, etc. are attained e.g. the achievement of sustainable development)) when undertaking scoping?

<i>A. Always</i>	<i>B. Frequently</i>	<i>C. Occasionally</i>	<i>D. Seldom</i>	<i>E. Never</i>

SECTION D: PUBLIC PARTICIPATION

D1 In your opinion what is/are one most important criterion/criteria that interested and affected parties must meet in order to contribute to effective scoping?

--

D2 To what extent do you believe there is any value in the public participation process during the scoping phase when only conceptual information is available and other important information such as Specialist findings are absent?

<i>A. Major value</i>	<i>B. Moderate value</i>	<i>C. Little value</i>	<i>D. No value</i>

Kindly elaborate on your response:

--

SECTION E: GENERAL SCOPING PROCESS

E1 In your opinion as an EAP, is there any value in a distinct scoping process as part of the EIA in comparison to scoping in a BA where the scoping is integrated with the assessment phase?

A. Yes	B. Sometimes	C. No

Kindly elaborate on your response:

--

E2 In your opinion, how can the South African EIA scoping process be improved?

--

ANNEXURE B: ETHICS APPROVAL LETTER OF STUDY



Private Bag X1290, Potchefstroom
South Africa 2520
85534

Tel: 018 299-1111/2222

Fax: 018 299-4910

Web: <http://www.nwu.ac.za>

85534

Senate Committee for Research Ethics

Tel: 018 299-4849

Email: nkosinathi.machine@nwu.ac.za

ETHICS APPROVAL LETTER OF STUDY

Based on approval by the **Faculty of Natural and Agricultural Sciences Ethics Committee (FNASREC)**, the Faculty of Natural and Agricultural Sciences Ethics Committee hereby **approves** your study as indicated below. This implies that the North-West University Senate Committee for Research Ethics (NWU-SCRE) grants its permission that, provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: Perceptions on the effectiveness of EIA scoping in South Africa																														
Study Leader/Supervisor: Dr L Kruger																														
Student: N Mkhize																														
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N	W	U	-	0	1	3	1	5	-	2	0	-	A	9																
Institution			Study Number			Year			Status																					
Status: S – Submission; R – Re-Submission; P – Provisional Authorisation; A – Authorisation																														
Application type: Single	Risk Category: Minimal																													
Commencement date: 01/02/2020																														
Expiry date: 01/04/2021																														
Approval of the study is initially provided for a year, after which continuation of the study is dependent on receipt and review of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation.																														

Special in process conditions of the research for approval (if applicable):

- The following documentation are archived by FNASREC and should be complete and kept up to date:
 - Research proposal
 - Signed approval from the scientific committee indicating the proposed risk category
- All researchers involved in the study should submit signed NWU code of conduct statements annually.
- All researchers of low risk studies should submit proof of relevant ethics training every two years.
- All researchers that take part in activities that pose a safety and security threat to the researchers or the environment should submit a risk assessment form annually.
- All research involving human interaction should follow best ethical practise and keep documents as proof. This includes informed consent, questionnaires, incorporation of risk-benefit, and responsible data management.
- Any research at governmental or private institutions, permission must still be obtained from relevant authorities and provided to the FNASREC. Ethics approval is required BEFORE approval can be obtained from these authorities.

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, the following general terms and conditions will apply:

- The study leader/supervisor (principle investigator)/researcher must report in the prescribed format to the FNASREC:
 - annually (or as otherwise requested) on the monitoring of the study, whereby a letter of continuation will be provided, and upon completion of the study; and
 - without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.
- The approval applies strictly to the proposal as stipulated in the application form. Should any amendments to the proposal be deemed necessary during the course of the study, the study leader/researcher must apply for approval of these amendments at the FNASREC, prior to implementation. Should there be any deviations from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.
- Annually a number of studies may be randomly selected for an external audit.
- The date of approval indicates the first date that the study may be started.
- In the interest of ethical responsibility, the NWU-SCRE and FNASREC reserves the right to:
 - request access to any information or data at any time during the course or after completion of the study;
 - to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process;
 - withdraw or postpone approval if:
 - * any unethical principles or practices of the study are revealed or suspected;
 - * it becomes apparent that any relevant information was withheld from the FNASREC or that information has been false or misrepresented;
 - * submission of the annual (or otherwise stipulated) monitoring report, the required amendments, or reporting of adverse events or incidents was not done in a timely manner and accurately; and / or
 - * new institutional rules, national legislation or international conventions deem it necessary.
- FNAS-REC can be contacted for further information or any report templates via Roelof.Burger@nwu.ac.za 018 299 4269

The FNASREC would like to remain at your service as scientist and researcher, and wishes you well with your study. Please do not hesitate to contact the FNASREC or the NWU-SCRE for any further enquiries or requests for assistance.

Yours sincerely,



Prof Roelof Burger
Chairperson Faculty of Natural and Agricultural Sciences Ethics Committee (FNASREC)

ANNEXURE C: EAPASA COMMUNICATION

