

The contribution of Disaster Risk Assessment to improved Social Impact Assessment in South Africa

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Jeremiah 29:11: *“For I know the plans I have for you, declares the Lord, plans to prosper you and not to harm you, plans to give you hope and a future”* (Bible, 2011).

ABSTRACT

People are at the heart of sustainable development and entitled to an uncompromised sustainable future with a balanced life in harmony with a protected environment, economic development and social well-being. Global political commitments promised a brighter future to advance sustainable development for future generations and laid the basis for Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) globally. Moreover, the adoption of global strategies increased awareness of the vulnerabilities of people and proclaimed the future of Disaster Risk Reduction (DRR).

SIA internationally evolved as an integrated component within the broader context of EIA. South Africa has a similar EIA-bound scenario and SIA forms part of EIA as a social specialist report that informs EIA development planning. Despite considerable improvements in SIA after five EIA regimes, SIA in South Africa is firmly embedded in EIA and not considered as an assessment in its own right. One of SIA's unique attributes is that it assists with the resolution of social conflicts, and the effects of proposed interventions on people's vulnerabilities and social well-being. DRR shares similar characteristics and focuses on the strategic levels of Disaster Risk Management (DRM), where Disaster Risk Assessment (DRA) is a tool for the assessment of potential risks and impacts that developments might have on people. South Africa was one of the first countries in Southern Africa to legislate DRM, thereby embedding DRA firmly as part of disaster management planning. Due to the transdisciplinary nature of SIA and DRA they share many commonalities, however in South Africa they function as two distinct fields of theory and practice with little overlap.

The poor quality of SIA reports has been under the magnifying glass, contributing to SIA's subsidiary status. A shortage of skills to conduct risk assessments and a lack of flexible methodological guidance might have increased SIA's inadequate performance. While SIA in South Africa is an established field of practice the need for comprehensive, flexible formative methodological guidance prevails. A potential avenue to strengthen the shortfalls of SIA is the emerging international trend of integrated impact assessments, e.g. integrating SIA and DRA. SIA can play a vital role in the understanding of the interaction between future developments and the risk they pose to vulnerable communities in striving to promote a sustainable future. However, the potential SIA-DRA integration and the contribution of DRA to improved SIA in South Africa is poorly understood. Understanding the basis for their future collaboration to improved SIA status and practice in South Africa is worth further exploration. Therefore, the aim of this thesis is to investigate the contribution of DRA to improved SIA in South Africa. This study follows an exploratory mixed-methods research design. The research methods for data collection include in-depth literature reviews and document studies, and one-on-one interviews with SIA and DRA

specialists including self-administered questionnaires. The essence of the research results is captured in four article manuscripts that form Chapters 2, 3, 4 and 5 of this thesis.

Chapter 2 (Article Manuscript 1) highlights the theoretical discourse of integrating SIA and DRA and demonstrates their differences as well as their complementarity to each other through their shared focus, people-centred, multi-stakeholder, and transdisciplinary approach, and promising opportunities for potential integration. Based on the evidence this chapter revealed considerable scope for potential integration to improve SIA, despite their distinct differences. This lead the way to Chapter 3 (Article Manuscript 2) that critically compared the legislative and statutory provisions of SIA and DRA in South Africa to search for potential opportunities to meaningful SIA and DRA integration. The results from the comparison reveal that the dominance of the biophysical paradigm over the social paradigm persists in the legislative requirements concerning SIA, which might be a contributing factor to SIAs subordinate status. Furthermore, in the legislative provisions concerning DRA the social paradigm has a prominent role at the forefront of DRR. The findings highlight SIA and DRA's shared motives, and suggest that despite their regulatory segregation, integration can be worthwhile.

Chapter 4 (Article Manuscript 3) investigated four current discourses in South African SIA and DRA practice that echo international trends: (1) the collaboration of *specialists' shared expertise* should be encouraged; (2) the *hindrances* that specialists experience reflect broad international trends; (3) the need for strengthened rigorous *methodological guidance* coupled with formal training is emphasised, and special attention is drawn to a lack of guidance for Social Baseline Surveys as an essential component of SIA planning; and (4) *integrated assessments* are supported by the practitioner communities due to the benefits it might hold for both practices. The results from this manuscript underscore the need for specialists to strive for best practice and encourage the SIA-DRA integration to optimize SIA. Based on this evidence Chapter 5 (Article Manuscript 4) aimed to investigate and compare South African SIA and DRA methodologies in the goal to optimize SIA. A content analysis demonstrated alignments between SIA and DRA guidance documents and corroborated the lack of rigorous Social Baseline Survey guidance. Therefore, this chapter proposes an integrated Social and Disaster Risk Assessment (SDRA) approach to effectively guide inexperienced specialists to comprehensively identify and assess social issues, and thereby assist in improving the quality of SIA reports.

This study has shown that SIA can benefit from the integration of aspects of DRA across regulatory commonalities, shared theoretical and practical discourses, and new combined methodologies, and thereby offer opportunities for improved SIA practice and status in South Africa, which could also contribute more effectively to social sustainability and – welfare. This is

in line with international trends, therefore going forward the potential value that the contribution of DRA can make to enrich SIA practice should be encouraged.

Key words: Social Impact Assessment (SIA); Disaster Risk Assessment (DRA); integration; sustainable development; contribution; South Africa.

PREFACE

This thesis is presented in an article format with some chapters (Chapters 2–5) written as article manuscripts, and prepared in accordance with Section 5 of the General Academic Rules of the North-West University (NWU), the NWU's Manual for Master's and Doctoral Studies (Section 6.9), and the NWU's Quality Manual of the Faculty of Natural and Agricultural Sciences (Section 6.11.3) (NWU, 2016; NWU, 2018a; NWU, 2018b). There is no formal prescription for the number of articles for the thesis format, however only article manuscripts that directly flowed forth from this doctoral degree were used for the purpose of this doctoral thesis. Additionally, it is required that at least one article manuscript presented in this thesis must have been submitted and approved for publication by an accredited journal on the day the thesis is submitted for examination (NWU, 2018b:48).

This thesis is presented as a scholarly integrated unit in accordance with the specifications included in the NWU's General Academic Rules (Section 5.10) and the NWU's Manual for Master's and Doctoral Studies (Section 6). At certain points in the article manuscripts, references are made to previous chapters, instead of the article reference to avoid unnecessary repetition and assist in the coherence and flow of the chapters. This thesis consists of four (4) article manuscripts, of which two (2) article manuscripts have been submitted to accredited journals, and both manuscripts have already been published. A full chapter division is provided below. A summary of the content of each chapter is given later in Chapter 1.

Chapter 1: Introduction and orientation to SIA and DRA

Chapter one serves as the introductory chapter to this study. It outlines relevant literature to contextualise the research problem. This chapter further includes the research questions and objectives, the research paradigm, a comprehensive overview of the research methodology, and a summary of the chapters' contents.

Chapter 2: *SIA and DRA integration: understanding the discourse* (Article Manuscript 1).

This chapter forms the first of four article manuscripts and aims to address Research Objective 1, i.e. to investigate the current academic and theoretical discourses within the fields of Social Impact Assessment (SIA) and Disaster Risk Assessment (DRA) by means of a literature review. The integration of the two fields in a South African context is also explored.

Chapter 3: *Improved SIA through DRA integration: lessons from a South African legislative comparison* (Article Manuscript 2 — Published in the journal 'Impact Assessment and Project Appraisal' (IAPA) (see Annexures A and B)).

This chapter addresses the second research objective, which is to examine and critically compare the legislation, policies, guidelines and other statutory provisions pertaining to SIA and DRA in South Africa in search for commonalities. This chapter also explores the possible future integration of these two research fields.

Chapter 4: *Optimizing SIA: discourses in South African SIA and DRA practice* (Article Manuscript 3 — Published in the South African Geographical Journal (SAGJ) (see Annexures C and D)).

The fourth chapter of this study addresses Research Objective 3, i.e. to investigate the current discourses regarding SIA and DRA in practice and to explore the contribution of DRA to improved SIA in South African SIA practice.

Chapter 5: *Towards integrated Social and Disaster Risk Assessment: a South Africa methodological comparison* (Article Manuscript 4).

This chapter comprises the last of the four article manuscripts. It addresses Research Objectives 4 and 5. This chapter provides a critique of the similarities and gaps between SIA and DRA methodologies, comparing it to best international practice principles. The integration of the two fields and the contribution of DRA to improved SIA to guide good practice SIA in South Africa, is also investigated.

Chapter 6: Conclusions and way forward

This chapter summarises and concludes the study, and make recommendations for future research and practice regarding SIA and DRA in South Africa.

Bibliography:

Chapter one and six's references are combined into a consolidated bibliography at the end of the thesis. Each chapter contains its own reference list, in accordance with standard manuscript style. The Harvard referencing style was followed in accordance with the NWU's Referencing Guide (NWU, 2012). However, the referencing style and editorial format of Article Manuscript 2 and 3 have been prepared in accordance with the guidelines and requirements of the IAPA (Annexure B) and SAGJ (Annexure D).

Annexures:

Contains all the annexures and additional material used in this study.

The student is the main author on all four (4) article manuscripts and was supported by a promotor and co-promotor that have primarily provided supervision and guidance in accordance with Section 5 of the NWU's General Academic Rules, Section 4 of the NWU's Manual for Master's and Doctoral Studies, and Section 6.11 of NWU's Quality Manual of the Faculty of Natural and Agricultural Sciences (NWU, 2016; NWU, 2018a; NWU, 2018b). Prof. L.A. Sandham and Prof. D. van Niekerk in their capacity as promotor and co-promotor of this thesis are therefore the co-authors of all four article manuscripts (Annexure E).

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	i
ABSTRACT	iii
PREFACE	vi
LIST OF TABLES	xiii
LIST OF FIGURES	xiv
ACRONYMS	xv
CHAPTER 1: INTRODUCTION AND ORIENTATION TO SIA AND DRA	1
1.1 Introduction	1
1.2 Social Impact Assessment (SIA) and Disaster Risk Reduction (DRR)	3
1.3 Problem Statement	6
1.4 Research Questions	8
1.5 Research Aim and Objectives	8
1.6 Central Theoretical Paradigm	9
1.7 Research Methodology	11
1.7.1 Literature Review	11
1.7.2 Empirical Investigation	12
1.8 Chapters Summary	13
CHAPTER 2: SIA AND DRA INTEGRATION: UNDERSTANDING THE DISCOURSE (ARTICLE MANUSCRIPT 1)	15
Abstract	16
2.1 Introduction	16
2.2 SIA international historical development	18
2.2.1 SIA in South Africa	20
2.3 International Historical Trend of Disaster Risk Management	21
2.3.1 Disaster Risk Management in South Africa	23
2.4 Exploring the discourse: integrating SIA and DRA	25
2.4.1 Focus	26

2.4.2	Approach	27
2.4.3	Regulation	28
2.5	Conclusion	29
	References	30
CHAPTER 3: IMPROVED SIA THROUGH DRA INTEGRATION: LESSONS FROM A SOUTH AFRICAN LEGISLATIVE COMPARISON (ARTICLE MANUSCRIPT 2)		37
	Abstract	38
3.1	Introduction	38
3.2	SIA legislation and statutory provisions	41
3.2.1	Build-up to NEMA	42
3.2.2	National Environmental Management Act No. 107 of 1998	42
3.2.3	The National Heritage Resources Act No. 25 of 1999 (NHRA)	44
3.2.4	The National Water Act No. 36 of 1998 (NWA)	44
3.2.5	The Mineral and Petroleum Resources Development Act of 2002 (MPRDA)	45
3.2.6	Promotion of Administrative Justice Act No. 3 of 2000 (PAJA)	45
3.2.7	National Environmental Management: Air Quality Act No. 39 of 2004 and the National Environmental Management Waste Act No. 59 of 2008	46
3.3	DRM legislation and statutory provisions	46
3.3.1	Disaster Management Act No. 57 of 2002	47
3.3.2	National Disaster Management Framework of 2005	48
3.3.3	Disaster Management Amendment Act No. 16 of 2015	50
3.4	Exploring commonalities	50
3.4.1	SIA exclusion vs. DRA inclusion	52
3.4.2	Shared motives	53
3.5	Conclusion	54
	Acknowledgements	56
	References	57
CHAPTER 4: OPTIMIZING SIA: DISCOURSES IN SOUTH AFRICAN SIA AND DRA PRACTICE (ARTICLE MANUSCRIPT 3)		63

Abstract	64
4.1 Introduction	64
4.2 Materials and Methods	66
4.3 Findings and discussions	68
4.3.1 Discourse 1: Specialist's experience	68
4.3.2 Discourse 2: Hindrances in practice	70
4.3.3 Discourse 3: Methodological guidance	73
4.3.4 Discourse 4: Integrated Assessments	77
4.4 International practical discourses	79
4.4.1 Specialists' expertise (Discourse 1)	79
4.4.2 Hindrances in practice (Discourse 2)	80
4.4.3 Methodological guidance (Discourse 3)	81
4.4.4 Integrated Assessments (Discourse 4)	82
4.5 Conclusion	82
Acknowledgements	83
References	84
CHAPTER 5: TOWARDS INTEGRATED SOCIAL AND DISASTER RISK ASSESSMENT: A SOUTH AFRICAN METHODOLOGICAL COMPARISON (ARTICLE MANUSCRIPT 4)	91
Abstract	92
5.1 Introduction	92
5.2 Research Methodology	94
5.3 South African SIA and DRA methodological overview	95
5.3.1 SIA methodological guidance	95
5.3.1.1 South African SIA guidance	95
5.3.1.2 IAIA International SIA guidance	97
5.3.2 DRA methodology and techniques	98
5.4 SIA and DRA methodological content analysis	100
5.4.1 Integrated Social and Disaster Risk Assessment	102
5.5 International best practice guidance	105

5.6	Conclusion	107
	References	108
	CHAPTER 6: CONCLUSIONS AND WAY FORWARD	113
6.1	Introduction	113
6.1.1	Chapter 2: <i>SIA and DRA integration: Understanding the discourse</i> (Article Manuscript 1)	113
6.1.2	Chapter 3: <i>Improved SIA through DRA integration: Lessons from a South African legislative comparison</i> (Article Manuscript 2)	114
6.1.3	Chapter 4: <i>Optimizing SIA: discourses in South African SIA and DRA practice</i> (Article Manuscript 3)	115
6.1.4	Chapter 5: <i>Towards integrated Social and Disaster Risk Assessment: A South African methodological comparison</i> (Article Manuscript 4)	116
6.2	Contributions and way forward	117
6.2.1	Contributions	118
6.2.2	Recommendations	118
	BIBLIOGRAPHY	120
	ANNEXURES	128

LIST OF TABLES

Table 3-1: The NDMF's key performance areas (KPA's) and Enablers.

Table 3-2: Summary of legislative commonalities.

Table 4-1: SIA and DRA questionnaires.

Table 5-1: SIA and DRA methodological content analysis.

Table 5-2: Social Assessment Variables.

LIST OF FIGURES

- Figure 1-1: Hierarchical relationship between DRR, DRM and DRA.
- Figure 1-2: Relationship between EM, DRR and sustainable development.
- Figure 1-3: Sustainable Livelihoods Framework (SLF).
- Figure 2-1: Historical timeline of Social Impact Assessment (SIA).
- Figure 2-2: Historical timeline of Disaster Risk Management (DRM).
- Figure 2-3: Integration of SIA and DRA.
- Figure 3-1: KPA 3's levels of DRM planning.
- Figure 4-1a: How have you gained experience on how to conduct SIAs/ DRAs? (SQ7; DQ6).
- Figure 4-1b: How much formal training have you had? (SQ5; DQ5).
- Figure 4-2a: How familiar are you with the guidance documents for SIA and DRA, respectively? (SQ10; DQ9).
- Figure 4-2b: How valuable are the SIA/ DRA guidance documents in assisting you to produce quality reports? (SQ11; DQ10).
- Figure 4-2c: To what extent can the practice of SIA/ DRA benefit from more flexible methodological guidance and techniques? (SQ15; DQ13).
- Figure 5-1: Example of Social and Disaster Risk Assessment (SDRA) Analysis Technique.

ACRONYMS

ACDS	African Centre for Disaster Studies
ASA	American Sociological Association
BA	Basic Assessment
CBDRM	Community-Based Disaster Risk Management
CEQ	Council on Environmental Quality
CoGTA	Cooperative Governance and Traditional Affairs
DEA	Department of Environmental Affairs
DEAT	Department of Environmental Affairs and Tourism
DFID	Department for International Development
DM	Disaster Management
DMA	Disaster Management Act
DMAA	Disaster Management Amendment Act
DMISA	Disaster Management Institute of Southern Africa
DMP	Disaster Management Plan
DRA	Disaster Risk Assessment
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
EARP	Environmental Assessment and Review Process
ECA	Environment Conservation Act

EIA	Environmental Impact Assessment
EIB	European Investment Bank
EIS	Environmental Impact Statement
EM	Environmental Management
FEMA	Federal Emergency Management Agency
GAR19	Global Assessment Report of Disaster Risk Reduction of 2019
GIS	Geographical Information System
GRI	Global Reporting Initiative
HAT	Hazard Assessment Tool
HFA	Hyogo Framework for Action
IA	Impact Assessment
IAIA	International Association for Impact Assessment
IAP	Interested and Affected Party
IAPA	Impact Assessment and Project Appraisal
IDNDR	International Decade for Natural Disaster Reduction
IDP	Integrated Development Plan
IFC	International Finance Corporation
IMC	Inter-Ministrial Committee
ISDR	International Strategy for Disaster Reduction
ISO	International Standards Organisation
KPA	Key Performance Area
LA21	Local Agenda 21
MDG	Millennium Development Goal

MPRDA	Mineral and Petroleum Resources Development Act
NDMC	National Disaster Management Centre
NDMF	National Disaster Management Framework
NEMA	National Environmental Management Act
NEMAQA	National Environmental Management: Air Quality Act
NEMWA	National Environmental Management Waste Act
NEPA	National Environmental Policy Act
NGO	Non-governmental Organisation
NHRA	National Heritage Resources Act
NOAA	National Oceanic and Atmospheric Administration
NWA	National Water Act
NWU	North-West University
PAJA	Promotion of Administrative Justice Act
PP	Public Participation
RSA	Republic of South Africa
RSIA	Risk and Social Impact Assessment
SAGJ	South African Geographical Journal
SDG	Sustainable Development Goal
SDRA	Social and Disaster Risk Assessment
SFDRR	Sendai Framework for Disaster Risk Reduction
SIA	Social Impact Assessment
SIAR	Social Impact Assessment Report
SLA	Sustainable Livelihoods Approach

SLF	Sustainable Livelihoods Framework
SLP	Social and Labour Plan
SSA	Social Soundness Analysis
ToR	Terms of Reference
UN	United Nations
UNDP	United Nations Development Programme
UNDRR	United Nations Office for Disaster Risk Reduction
UNEP	United National Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISDR	United Nations International Strategy for Disaster Reduction
US	United States
USA	United States of America
USAID	United States Agency for International Development
WCED	World Commission on Environment and Development

CHAPTER 1: INTRODUCTION AND ORIENTATION TO SIA AND DRA

1.1 Introduction

The mainstream focus on the topic of sustainable development commenced more than 40 years ago at the United Nations Conference on Human Environment, held in Stockholm in 1972, where the global community had met for discussions on global development needs and to consider the state of the global environment (Gardiner, 2002). It was only 20 years later at the United Nations Conference on Environment and Development in Rio de Janeiro (1992) that history was made with the release of Agenda 21 (also known as the Rio Declaration principles). Agenda 21 included 27 principles that have addressed the pressing global environmental and societal problems. It has prepared Governments around the world for these problems by assisting local authorities in its implementation to ensure a sustainable future for the next generation (UN, 1992). Various definitions for 'sustainable development' exist (Barrow, 2006). It is due to these variations in definitions that the concept is often perceived as a paradigm shift. However, it should be emphasised that sustainable development is often complex in nature and not easy to achieve (Barrow, 2006). Therefore, the definition of 'sustainable development' used for the purpose of this study is the definition included in Chapter 2 of the Brundtland Report of 1987 that it *"is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"* (WCED, 1987:41).

A decade after the Rio Declaration, the World Summit on Sustainable Development (also referred to as Rio' Earth Summit+10) took place in Johannesburg, South Africa. Here the concept of 'sustainable development' was again embraced to address ongoing developmental, environmental and social concerns (UN, 2002). Another 10 years later in 2012, the United Nations Conference on Sustainable Development (also referred to as Rio' Earth Summit+20) was held in Rio de Janeiro, Brazil (UN, 2012a). This conference reaffirmed the need for sustainable development through the outcome document titled 'The future we want'. In this document the 27 Rio principles are supported and reaffirmed that *"We recognize that people are at the centre of sustainable development and, in this regard, we strive for a world that is just, equitable and inclusive, and we commit to work together to promote sustained and inclusive economic growth, social development and environmental protection and thereby to benefit all"* (UN, 2012b:1). This reflects that environmental protection, social welfare, and economic development and growth remain the three main pillars that balance current needs and a sustainable future (Aucamp, 2015; Barrow, 2006). Additionally, the political commitment to *"accelerate the achievement of the*

internationally agreed development goals, including the Millennium Development Goals” were reaffirmed (UN, 2012a:2).

In the year 2000 the Millennium Development Goals (MDGs) were developed at the Millennium Summit held at the United Nations headquarters in New York City (USA), where global leaders agreed in partnership to address issues like poverty, education and gender inequalities (Millennium Project, 2006; UNDP, 2016a; United Nations Economic Commission for Africa, 2015). The MDGs consist of eight (8) goals that countries aspired to achieve by the year 2015 (see summary of the MDGs in Annexure F). Goal seven (7) of the MDGs particularly aims to will have ensured environmental sustainability by the year 2015 (Millennium Project, 2006; United Nations Economic Commission for Africa, 2015). After 15 years of the implementation of the MDGs, the United Nations (UN) have reported on the status and outcome of the MDGs where the successes and shortfalls of many countries in reaching their goals were closely examined (UN, 2015). The report revealed that the achievement of the MDGs was incomplete and needs to continue in the new development era (post-2015) (UN, 2015). Similar to the outcome revealed in the UN report, the MDGs Country Report of 2015 compiled by Statistics South Africa, reported that South Africa has progressed towards achieving the MDGs, however the country still has a long way to go (RSA, 2015b). This reflects the achievement of the country, as well as the challenges and obstacles that still need to be faced in the next 15 years moving towards the post-2015 development agenda guided by the Sustainable Development Goals (SDGs). The report has also revealed that even though there were still some shortfalls moving towards the SDGs, that the MDGs would be incorporated into the newly developed SDGs and would remain part of the development agenda in South Africa as well as globally.

In September 2015 at the United Nations Summit held in New York City (USA), world leaders gathered emphasising the global need for sustainable development (UNDP, 2016a; UNDP, 2016b). This time around countries committed themselves to achieve 17 SDGs by the year 2030 (see summary of the SDGs in Annexure F). The newly developed SDGs should however not be viewed in silos, but rather as integrated, transformative and universal goals (UNDP, 2016a; UNDP, 2016b). Sustainable Development Goal (SDG) 11 focuses on sustainable cities and resilient communities and can be perceived as an umbrella goal covering all the goals to develop, manage and maintain in a sustainable manner (UNDP, 2016c). This goal should be considered a priority amongst country leaders to safeguard our fast developing world and protecting vulnerable communities. Although this international commitment by global leaders to achieve these development goals that were set for the post-2015 development agenda is still in progress, the question is whether the SDGs will make a difference in the post-2015 era for future generations, or will it only be a ‘wish list’ that countries aspire to attain.

The three Rio conventions mentioned earlier emphasised the renewal of global political commitments to advance sustainable development. Here the Rio declaration principles made history globally by ensuring a future for Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA), in the broader context of Environmental Management (EM). Principle 17 laid the basis for EIA, by requiring its undertaking for national decision making purposes where proposed developments might cause an impact on the environment (UNESCO, 1992:4). Furthermore, Principle one (1) of the declaration affirmed SIA globally by stating — *“Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature”* (UNESCO, 1992:1). Moreover, Principle 18 of the declaration has also raised awareness for Disaster Risk Reduction (DRR) by including disasters and potential hazards which might have adverse effects on the environment (UNESCO, 1992:4). Additionally, with the adoption of the Yokohama Strategy in the year 1994 policymakers and governments globally have recognised people’s vulnerabilities to disaster risk, and proclaimed the future of DRR by placing people at the forefront of concern (IDNDR, 1994).

1.2 Social Impact Assessment (SIA) and Disaster Risk Reduction (DRR)

Internationally the history of SIA dates back to the 1970s and is well researched (Aucamp, 2015; Barrow, 2000; Becker, 1997; Burdge, 2004; Du Pisani & Sandham, 2006; Esteves *et al.*, 2012; Hildebrandt, 2012; Vanclay, 2006; 2015; Vanclay *et al.*, 2015; Momtaz, 2005). Since then various definitions of SIA have been recorded by the likes of Becker (1997), Esteves & Vanclay (2009), the Interorganizational Committee on Guidelines and Principles for Social Impact Assessment (1995) and Momtaz (2005). However, the formalised definition of SIA as published in the International Principles for SIA includes *“the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions”* (IAIA, 2003:5). Furthermore, its main purpose is to *“bring about a more sustainable and equitable biophysical and human environment”* (IAIA, 2003:5).

In South Africa, SIA forms part of EIA as a specialist report that informs the EIA report. The history of EIA and SIA in South Africa, similar to the international history of SIA, also dates back to mid-1970s and is well documented (Aucamp, 2015; Aucamp *et al.*, 2011; 2018; Barbour, 2007; Du Pisani & Sandham, 2006; Hildebrandt & Sandham, 2014; Kidd & Retief, 2009; Kidd *et al.*, 2018; Wood, 1999). The first era of the legal mandate of EIA in South Africa became mandatory in September 1997 with the promulgation of the EIA regulations in terms of the Environment Conservation Act of 1989 (ECA) (RSA, 1989). The second era of mandatory EIA commenced in

April 2006 with the promulgation of newly defined regulations in terms of the National Environmental Management Act of 1998 (NEMA) (RSA, 1998). The NEMA included a very broad definition of the 'environment' to include humans and their surrounding environment: "*the surroundings within which humans exist and that are made up of...(iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing*" (RSA, 1998). This definition embeds SIA firmly in EIA. After five EIA regimes (1997, 2006, 2010, 2014 and 2017) SIA in South Africa is fully integrated into the EIA process as a specialist report, and is not considered or practised as an assessment in its own right, ascribing the reason for this integration to the broad definition of the 'environment' included in the NEMA (Aucamp *et al.*, 2011; Du Pisani & Sandham, 2006; Hildebrandt & Sandham, 2014; Kruger & Sandham, 2018). It is further reasoned that in a developing country like South Africa, environmental issues and social development should not be operating in silos (Du Pisani & Sandham, 2006).

One of the special characteristics of SIA is that it can assist in the understanding of conflict, and the effect of proposed actions on communities' livelihoods and their wellbeing (Barrow, 2010; Esteves & Vanclay, 2009). Disaster Risk Reduction (DRR) share similar characteristics. DRR is referred to as "*the practice of reducing disaster risk through systematic efforts*" of assessing, analysing and managing communities' vulnerabilities, their societal needs and exposure to hazards and impacts on their livelihoods and the environment (UNISDR, 2009:10–11). Disaster Risk Management (DRM) is referred to by Van Niekerk (2011:13–14) as "*the systematic process of using administrative directives, organisations, and operational skills and capacities in order to lessen the adverse impacts of hazards and their possibility of disaster*". DRM's purpose is to reduce the adverse effects of proposed activities through measures like Disaster Risk Assessment (DRA), which is the "*process to determine the nature and extent of such risk, by analysing hazards and evaluating existing conditions of vulnerability*" that could potentially be harmful to vulnerable communities (UNDP, 2010). The relationship between DRR, DRM and DRA is illustrated in Figure 1-1 below. These three concepts are often confused. DRR is primarily focused on the strategic level of management, DRM however is the "*tactical and operational implementation*" of DRR, whereas DRA is one of the tools that could be utilised for the assessment of risks and potential impacts (Van Niekerk, 2011:13–14).

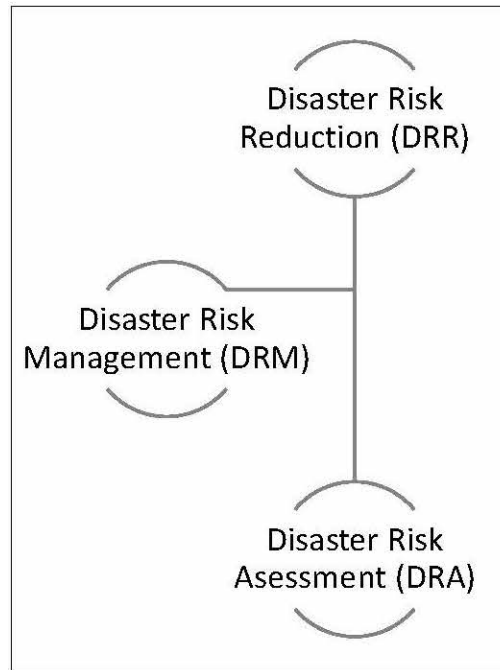


Figure 1-1: Hierarchical relationship between DRR, DRM and DRA (Own contribution).

The international historical evolution of DRM dates back to the early 1950s and is well researched (Gall *et al.*, 2015; IDNDR, 1994; ISDR, 2005; Ranke, 2016; Schipper & Pelling, 2006; Scolobig *et al.*, 2015; Smith, 2013; UN, 1998; UNISDR, 2015). South Africa was one of the first countries in Southern Africa to legislate DRM. The Disaster Management Act No. 57 of 2002 (DMA) was promulgated in January 2003 to address and manage potential disaster risks in South Africa (RSA, 2002). This was followed by the National Disaster Management Framework of 2005 (NDMF) and the Disaster Management Amendment Act No. 16 of 2015 (DMAA), which have explicitly included DRA as a legislative requirement for all levels of government (RSA, 2005; RSA, 2015a).

To address the potential consequences of proposed interventions, peoples' vulnerabilities should be at the centre of concern and need to be considered in a holistic manner through accumulated knowledge of various fields like EM and DRR (Wisner *et al.*, 2012b). Over decades of aiming to achieve sustainability and development goals there is one commonality that is still evident, which is that sustainability, DRR and EM are interlinked and cannot function without each other (see Figure 1-2).

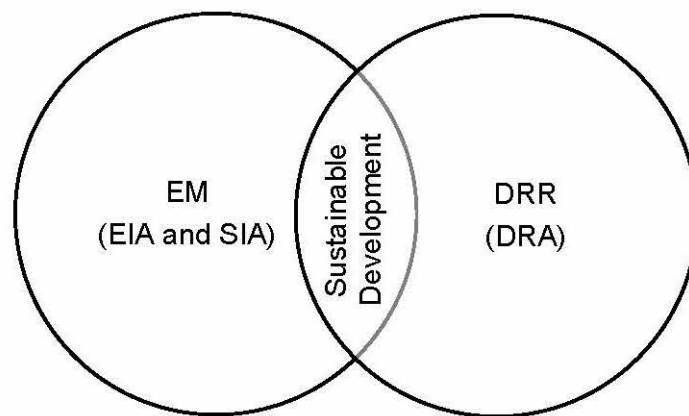


Figure 1-2: Relationship between EM, DRR and sustainable development (Own contribution).

Due to their unique multi- and transdisciplinary characteristics, it has been demonstrated in the past that it is best to “*tackle them simultaneously*” (Wisner *et al.*, 2012a:16). Yet, the collaboration between SIA and DRA for improved sustainable development outcomes is poorly understood and researched.

1.3 Problem Statement

The quality of SIA reports in South Africa has been examined by the likes of Du Pisani (2005), and Hildebrandt and Sandham (2014). Hildebrandt and Sandham (2014) explored the “*lesser sibling*” status of SIA in South Africa by the means of a report quality review from 1997 to 2010. The results revealed poor quality SIA reports, with the weakest areas being the identification and evaluation of key impacts, and the identification of alternatives and mitigation measures. A lack of methodological guidance in SIA might have exacerbated the weak performance in SIA report quality (Hildebrandt & Sandham, 2014). Moreover, a shortage of skills for conducting and reviewing SIA, and the lack of understanding of the need for SIA by authorities, project proponents and practitioners, also contributed to SIA receiving less than needed attention (Hildebrandt & Sandham, 2014). Yet, despite sufficient methodological guidance in South African SIA practice, these two review areas have consistently reported poor performances due to their technical demands.

South African SIA practice has also been researched in recent years (2011–2017) by various academics and practitioners (Aucamp *et al.*, 2011; Baines & Taylor, 2011; Becker, 1997:142–

173; Kemp, 2011; Kruger & Sandham, 2018). Although SIA in South Africa is an established field in terms of regulation and practice, many gaps have been identified of which the need for sufficient, flexible SIA methodological guidance prevails (Aucamp *et al.*, 2011; Baines & Taylor, 2011; Hildebrandt & Sandham, 2014; Kemp, 2011; Kruger & Sandham, 2018). The only formal guidelines specifically available to South African SIA professionals are the 'Guidelines for involving Social Assessment Specialists in the EIA process' (Barbour, 2007) (prepared for the Department of Environmental Affairs and Development Planning for the Western Cape Province), and the more generic SIA 'Guidance for assessing and managing the social impacts of projects' prepared for the International Association for Impact Assessment (IAIA) (Vanclay *et al.*, 2015). The need for adequate methodological guidance in South African SIA practice subsequently places increased focus on good practice considerations by professionals and on the holistic concept of sustainable social development (Hildebrandt & Sandham, 2014).

The overall objective of any development process is to enhance communities' quality of life and ensure a sustainable future (Usman *et al.*, 2013). However, development projects might cause various impacts on the natural environment and the societal resilience of communities, contributing also to increased disaster risks (Usman *et al.*, 2013). Moreover, the understanding of the interaction between development projects and disaster risk is vital to ensure that the proposed gains from development projects are met in a sustainable manner. Therefore, by understanding and predicting disaster risks or possible future hazardous impacts posed by development projects, and anticipating the impact thereof on vulnerable communities, can reduce not only disaster risks but also mitigate adverse social impacts. Key performance area 2 (KPA2) in the National Disaster Management Framework (NDMF) of 2005 (RSA, 2005:36–38) explicitly mentions the need to identify high risk developments of national significance, and instances where environmental, social and economic indicators suggest risks that are likely to impact the livelihoods of vulnerable communities. Subsequently, this inclusion in DRM legislative provisions, emphasise the need for DRA, which in turn informs sustainable development planning. SIA can be regarded as a tool to aid in the understanding of conflict and sustainability issues and assist in the integration of various disciplines whose aim is to reduce risk and achieve sustainable development (Barrow, 2010; Hildebrandt, 2012; Esteves & Vanclay, 2009). However, the contribution of SIA towards DRR is poorly understood and underutilised. Although SIA cannot be regarded as a risk assessment by itself, it can however play a vital role in the understanding of disaster risks and the socio-economic outcome of development projects to reduce vulnerability and increase community resilience (Usman *et al.*, 2013).

The role and the integration of SIA (as an integral component of EIA) and Disaster Risk Assessment (DRA) (in the context of Disaster Risk Management (DRM)) have recaptured

researchers' attention in recent years (2011–2016) (Cottrell & King, 2011; Domínguez-Gómez, 2016; Imperiale & Vanclay, 2016; Mahmoudi *et al.*, 2013; Usman *et al.*, 2013). Usman *et al.* (2013) explored the integration of DRM and SIA, highlighting that the identification, understanding and assessment of risks and hazards are integral features of the SIA process. The integration of SIA and DRA is poorly understood, although both strive to achieve similar objectives, i.e. to reduce vulnerability and potential disaster risks, improve community resilience and to achieve sustainable social development outcomes (Usman *et al.*, 2013). Wisner *et al.* (2012a:16) emphasise the interlinkages between sustainability, DRR and EM. In South Africa however, the integration between SIA (as an integral component of EIA) and DRA, as well as the contribution that DRA can make towards improved SIA practice, is unknown and has not been researched.

1.4 Research Questions

In order to address the gap in research on the contribution of DRA to improved SIA in South Africa, the following research questions are posed:

1. What are the current academic and theoretical discourses in Social Impact Assessment (SIA) and Disaster Risk Assessment (DRA)?
2. What is the state of the legislation and policy on SIA and DRA in South Africa?
3. What are the current discourses regarding SIA and DRA in practice?
4. What are the similarities and gaps in SIA and DRA methodologies?
5. What contribution can DRA make towards improved SIA methodology to guide good practice SIA in South Africa?

1.5 Research Aim and Objectives

The main aim of this study is to investigate the contribution of DRA to improved SIA in South Africa. The following research objectives are set:

1. To investigate the current academic and theoretical discourses in Social Impact Assessment (SIA) and Disaster Risk Assessment (DRA).
2. To examine and critically compare current South African legislation and policy concerning SIA and DRA.
3. To investigate the current discourses regarding SIA and DRA in practice.
4. To investigate the similarities and gaps in SIA and DRA methodologies.

5. To investigate the contribution of DRA to improved SIA methodology to guide good practice in South African SIA.

1.6 Central Theoretical Paradigm

Research paradigms refer to a researcher's point of view or frame of reference of a study. Its purpose is mainly to organise observations and a researcher's reasoning and provide guidance to researchers in searching for answers to solve their research problems (Delport *et al.*, 2011:297–298). Simply stated, research paradigms can be considered as sets of spectacles through which a researcher is viewing a study. The central theoretical paradigm for the purpose of this study is two-fold. The first central theoretical paradigm that this study follows is the Sustainable Livelihoods Framework (SLF) (Figure 1-3). The SLF is considered as a people-centred framework (DFID, 1999). It begins with a “*developmental standpoint*” taking into consideration all the potential vulnerabilities to communities, hence placing their livelihoods at the centre of concern (Twigg, 2001). The SLF is not a linear framework, but rather a dynamic, participatory approach for stakeholders to engage with potential risks to, and impacts on communities' livelihoods that threaten their sustainability and resilience. It is a flexible framework and should thus be adapted to specific needs and contexts.

In short, Figure 1-3 illustrates that this theoretical framework contemplates the vulnerability context in which people live, as well as their livelihood assets (capabilities) that they hold. It then takes into consideration how transforming structures and processes (i.e. private sector, government, policies, legislation, culture and institutions) could potentially generate livelihood strategies to ultimately achieve sustainable livelihood outcomes, like reduced vulnerability, sustainable resources and increase well-being and resilience. The arrows in the figure however are only a reflection of the various dynamic relationships, interactions and influences, and do not reflect direct causalities (DFID, 1999).

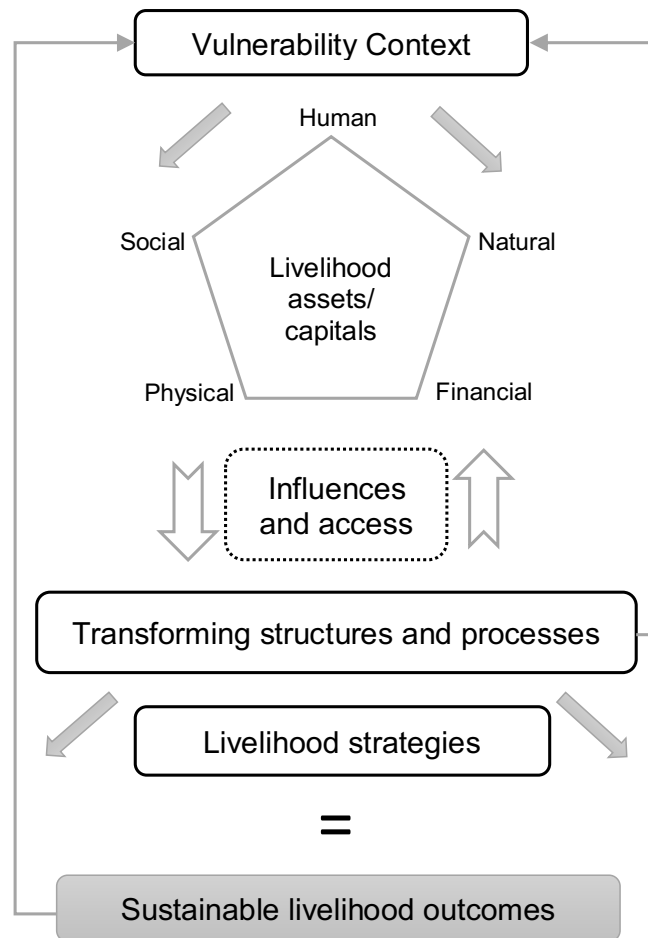


Figure 1-3: Sustainable Livelihoods Framework (SLF) (adapted from DFID, 1999).

The second frame of reference comprises of more recent thinking included in the 2019 Global Assessment Report of Disaster Risk Reduction, also referred to as GAR19. The GAR19 follows four years after the release of the Sendai Framework for Disaster Risk Reduction 2015–2030 (SFDRR), mainly reporting on the progress of the SFDRR, SDGs and early lessons of the global risk landscape (UNDRR, 2019). GAR19 emphasises that the management of complexity, like risk, should not be divided into departments. Therefore, integrated risk assessment is one of the key focuses that GAR19 reports on. The second research paradigm that guides the reasoning of this thesis is: *“The lens of contextual enquiry and trans-contextual research is one that brings together disciplines... By incentivizing transdisciplinary, integrated, multi-sectoral research..., risk assessment and decision-making efficiency can be improved, duplication of efforts reduced, and connected collective action facilitated”* (UNDRR, 2019:v).

In the context of SIA and DRA, both of the abovementioned paradigms are good theoretical frameworks which reinforce the message to holistically consider and reduce communities’

vulnerabilities and the resources on which they depend, to improve the identification of potential risks and impacts that proposed interventions might pose, to enhance community resilience and achieve sustainable development outcomes for future generations (Coakes & Sadler, 2011).

1.7 Research Methodology

The discussion of the research methodology is divided into two subsections, i.e. literature review and the empirical investigation. An overview of the methodology is given here, however more comprehensive discussions of the research methodology is included in each respective chapter.

1.7.1 Literature Review

A literature review refers to the existing body of knowledge to assist in the contextualisation and formulation of one's own research and to learn from experiences and research conducted by peers and scholars (Delpont *et al.*, 2011:302). The function of a literature review serves the purpose of:

- Demonstrating that the researcher is knowledgeable about the field of research under study;
- Demonstrating that the researcher has the ability to identify research gaps;
- Refining and redefining posed research questions; and
- Demonstrating the underlying assumptions derived from research questions (Delpont *et al.*, 2011:302).

A literature review was conducted using a wide range of appropriate sources, including various books, journal articles, theses and dissertations and other existing web sources. The NWU's Quality Manual of the Faculty of Natural and Agricultural Sciences (Section 6.11.3) provides guidance regarding the presentation of a literature review if a thesis is presented in an article format. It is permitted that such a literature review may also be included in the form of review articles (NWU, 2018b).

An in-depth literature review was conducted to attain research Objectives 1 and 2. The investigation of current academic and theoretical discourses in SIA and DRA (Research Objective 1) is presented as a review article which is included as Chapter 2 (Article Manuscript 1) of this thesis. To attain research Objective 2, i.e. to examine and critically compare current South African

legislation and policy concerning SIA and DRA, a review of South African legislation, policies and other statutory provisions pertaining to DRA and SIA was also conducted. This is presented in Chapter 3 of this thesis as Article Manuscript 2.

1.7.2 Empirical Investigation

This study has used a *mixed methods research approach*. A mixed method research approach refers to a combination of qualitative and quantitative data at a certain stage during the research process, to gain a more comprehensive understanding of the problem under investigation, therefore providing great value to a study (Ivankova *et al.*, 2007:269–270). There are four different types of mixed method research designs, i.e. Exploratory-, Explanatory-, Triangulation- and Embedded mixed methods design (Delpont & Fouché, 2011:440–443; Ivankova *et al.*, 2007:272–275). This study has used the *exploratory mixed methods research design*, which is a two-phase design where a researcher firstly explores a phenomenon in depth (qualitative data) and uses the results of the first phase to guide the second phase (quantitative data) (Delpont & Fouché, 2011:441). The qualitative research conducted in Chapters 2 and 3 (Article Manuscripts 1 and 2) has therefore guided the second phase to further explore the SIA-DRA integration in Chapters 4 and 5 of this thesis (Article Manuscripts 3 and 4).

Chapter 4 includes the third Article Manuscript aiming to address research Objective 3, i.e. to investigate the current discourses regarding SIA and DRA practice. This was attained through the utilisation of questionnaires and interviews. The NWU guidances and rules were followed as indicated earlier in the Preface, and the research methods was approved by an NWU scientific committee which granted this study ethical clearance. Additionally, the questionnaires were accompanied by a cover letter, covering the ethical considerations of this study which included: voluntary participation and informed consent, the right to withdraw from the study at any point in time, ensuring confidentiality of the findings and the anonymity of participants. A DRA and SIA questionnaire has been compiled, and interviews were held (telephonically or over Skype) with a sample of 14 SIA and 10 DRA experts. Some experts from this sample group opted to self-administer the questionnaires due to their unavailability for an interview. The relatively small sample size was not a limitation to this study, because the data still provides useful perspectives from both the SIA and DRA expert sample groups. For the purpose of discussing the findings of this chapter a thematic analysis was followed, where four practical discourses have been discussed: specialists' experience; hindrances in practice; methodological guidance; and integrated assessments. To ensure the unbiased analysis of data, Le Compte's (2000) 'tacit' and 'formative' theory was followed, ensuring the validity and reliability of the data. For data analysis

purposes and to protect participants' identities, the responses from the sample groups were coded.

Chapter 5 (the fourth and final article manuscript) aims to attain research Objectives 4 and 5, i.e. to investigate the similarities and gaps in SIA and DRA methodologies and to investigate the contribution of DRA to improved SIA methodology to guide good practice in South African SIA. This chapter followed a qualitative research approach, making use of documents as a qualitative data collection technique. A document review was conducted on the current South African SIA and DRA guidance documents to gain an in-depth understanding of the content (Strydom & Delport, 2011; Nieuwenhuis, 2012). This was followed by a content analysis of the documents, which is a systematic qualitative data analysis approach to identify and summarize content in order to answer the research objectives that have been set earlier (Nieuwenhuis, 2012).

1.8 Chapters Summary

A chapter division has been provided earlier in the Preface of this thesis, however here a summary of the respective chapters will be given to set the scene for what can be expected in this thesis.

This thesis starts with an introductory chapter (*Chapter 1: Introduction and orientation to SIA and DRA*), which orientates the reader on the relevant literature and further serves to contextualise the research problem. Chapter 1 provides the research questions, aim and objectives. It further describes the central theoretical paradigms that this study follows. Lastly, an overview of the research methodology is provided.

Following the introductory chapter are the four article manuscripts that form the core of this thesis. Chapter 2: *SIA and DRA integration: understanding the discourse* (Article Manuscript 1) aims to investigate the theoretical discourses pertaining to SIA and DRA by means of an in-depth literature review. Chapter 3: *Improved SIA through DRA integration: lessons from a South African legislative comparison* (Article Manuscript 2) critically examines and compares SIA and DRA legislative and statutory provisions to search for gaps and commonalities that could support the potential integration of the two segregated fields. Chapters 4 and 5 form part of the empirical investigation. Chapter 4: *Optimizing SIA: discourses in South African SIA and DRA practice* (Article Manuscript 3) has investigated the current discourses in SIA and DRA practice by means of a mixed methods research approach. Here, four practical discourses were focused on for analysis, namely: specialists' experience; hindrances in practice; methodological guidance; and integrated assessments. Chapter 5: *Towards integrated Social and Disaster Risk Assessment: a South African methodological* (the last of four article manuscripts) has investigated and compared

SIA and DRA methodologies in South Africa in search for gaps and opportunities to determine their potential integration, as well as DRA's contribution to guide good SIA practice in South Africa.

The concluding chapter (*Chapter 6: Conclusions and way forward*), summarizes the study and includes the recommendations towards the way forward for SIA and DRA research and practice in South Africa.

CHAPTER 2: SIA AND DRA INTEGRATION: UNDERSTANDING THE DISCOURSE

ARTICLE MANUSCRIPT 1

Research Objective 1: To investigate the current academic and theoretical discourses in Social Impact Assessment (SIA) and Disaster Risk Assessment (DRA).

Abstract

Environmental change holds many social risks, exposing vulnerable communities and influencing community resilience. Social Impact Assessment (SIA) is an assessment tool that addresses social change and aims to ensure a sustainable future. An investigation of the quality of SIAs has emphasised SIA's subsidiary status and isolation from other impact assessment fields in South Africa and internationally. Disaster Risk Assessment (DRA) is identified as an assessment tool for improving SIA practice. Both SIA and DRA can assist in addressing risks and increase community resilience, but because of their distinct differences in theory and practice, they are seldom integrated. The integration of SIA with DRA is an emerging trend not yet reported on in South Africa, and therefore the aim of this paper is to investigate the current discourse of integrating SIA and DRA through a literature review. Firstly, the historical development of SIA and DRA has demonstrated that they are two separate, but adjoining fields of theory and practice. Secondly, three areas of potential integration of SIA and DRA were observed i.e. *focus*, *approach* and *regulation*. This paper suggests that SIA can positively benefit from this integration for improved SIA practice. Therefore, SIA and DRA's cross-fertilization should be encouraged in the quest for social sustainable development outcomes, improved social well-being and ensuring community resilience.

Keywords: Social Impact Assessment (SIA); Disaster Risk Assessment (DRA); discourses; integration; resilience; sustainable development.

2.1 Introduction

Social Impact Assessment (SIA) is defined in the International Principles for Social Impact Assessment as "*the process of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions and any social change process invoked by those interventions*", of which the main aim is to ensure a sustainable environment for present and future generations (IAIA, 2003:5). SIA practitioners further encapsulate SIA as the "*voice of the people*", "*people impacts, the impacts of and on people*", and state that SIA assists in better decision making for more sustainable outcomes, for the environment and most importantly for people (IAIA, 2015). Similarly, Disaster Risk Assessment (DRA) shares this people-centred approach with SIA.

Risk Assessment refers to the methodology which determines “*the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability*”, which might hold potential negative impacts on vulnerable communities, their environment, access to services and the livelihoods on which they depend (UNISDR, 2009:26), whereas DRA is an assessment tool to appreciate the nature of risks in order to reduce vulnerable communities’ exposure to risks and their impacts (Forbes-Biggs, 2011). “*Risks are ubiquitous and there is no life without a risk*”, thereby risk can never be zero, it can only be small in the best of cases (Ranke, 2016:25–26). Due to many global environmental changes and the risks that they pose, there is increased uncertainty whether the global community will still be able to rely on the natural resources that they depend to sustain their already vulnerable livelihoods (Schipper & Pelling, 2006). Vulnerability refers to the circumstances and sensitivity of individuals and/or communities towards hazardous impacts, whereas resilience is the “*ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard*” (UNISDR, 2017). It is therefore essential to plan for risks to reduce communities’ vulnerabilities and strengthen their resilience towards the damaging effects of hazards. This is supported by the Sendai Framework for Disaster Risk Reduction of 2015–2030 (SFDRR) which reiterates the urgency of nations’ commitment to build community resilience globally in the context of sustainable development (UNISDR, 2015). Based on people’s vulnerabilities it is therefore their decision to choose between different risks and decide how they are going to deal with it in order to improve their resilience against these risks and the impacts it may have on them. Although SIA is not a risk assessment in itself, it is a mechanism that can assist decision-makers, project developers and communities to understand risks and their potential impacts.

Globally, the “orphan” or subsidiary status of SIA in the environmental assessment process has been emphasised (Burdge, 2002; Kruger & Sandham, 2018; Kruger *et al.*, 2020b). The status of SIA in South Africa was explored by Hildebrandt and Sandham (2014) through a SIA report quality review. Evidence suggests that despite shortcomings, SIA should be optimized for improved practice and social well-being, to promote social sustainable development outcomes (Aucamp & Woodborne, 2019; Bond *et al.*, 2012; João *et al.*, 2011), and bring about a change in the mind-set of key stakeholders (Hildebrandt & Sandham, 2014). A promising avenue to optimize SIA and to bring about the required mindset, is the integration of SIA with other fields of practice, an emerging trend internationally, which is why this discourse analysis is necessary. One of the identified overlapping fields with SIA for possible cross-fertilization, is DRA (Dreyer *et al.*, 2010; Mahmoudi *et al.*, 2013). Risk Assessment can help communities to cope with risk and uncertainty in SIA (Becker, 2001). Moreover, SIA tools and methodology are often applied in disaster studies and are able to reduce risks and improve community resilience (Esteves *et al.*, 2012; Usman *et al.*, 2013). SIA can be considered as a mechanism to comprehend complex social issues to

reduce exposure to risks, enhance resilience and achieve sustainable development, and therefore the integration of DRA with improved SIA should be encouraged.

Therefore, the aim of this paper is to investigate the current theoretical discourse of SIA and DRA integration to improve SIA practice. An in-depth literature review was conducted to explore the possible integration of SIA (integral to the Environmental Management (EM) process) and DRA (in the context of Disaster Risk Management (DRM)) globally and also more specifically for South Africa. However, the historical trends of each field of study are investigated first to gain a better understanding of the theoretical and practical development of the two fields.

2.2 SIA international historical development

Detailed historical overviews can be found in Vanclay (2014a), but for the purpose of this paper only the key periods in SIA history will be highlighted. The international historical development of SIA dates back to the late 1960s with the promulgation of the National Environmental Policy Act (NEPA) in 1969, and is well recorded (Figure 2-1) (Aucamp, 2015; Barrow, 2000; Becker, 1997; Burdge, 2004; Du Pisani & Sandham, 2006; Esteves *et al.* 2012; Finsterbusch, 1995; Freudenburg, 1986; Hildebrandt, 2012; Momtaz, 2005; Vanclay, 2006; Vanclay *et al.*, 2015). NEPA has called for the integrated use of natural and social sciences in the preparation of Environmental Impact Statements (EISs) (Barrow, 2000). In February 1970 the Bureau of land management in the U.S. has submitted a six page EIS statement to the Department of Interior Building regarding the proposed development of an 80-mile Trans-Alaskan oil pipeline. The impacts of the proposed development on the Indigenous Inuit people were questioned. In 1973, the term 'Social Impact Assessment' was first used as a result of these discussions. This was the first case of SIA and initiated the inclusion of SIA in impact assessments globally, thereby SIA has originated alongside Environmental Impact Assessment (EIA) (Aucamp, 2015; Barrow, 2000; Esteves *et al.*, 2012; Finsterbusch, 1995; Hildebrandt, 2012; Momtaz, 2005; Vanclay, 2006).

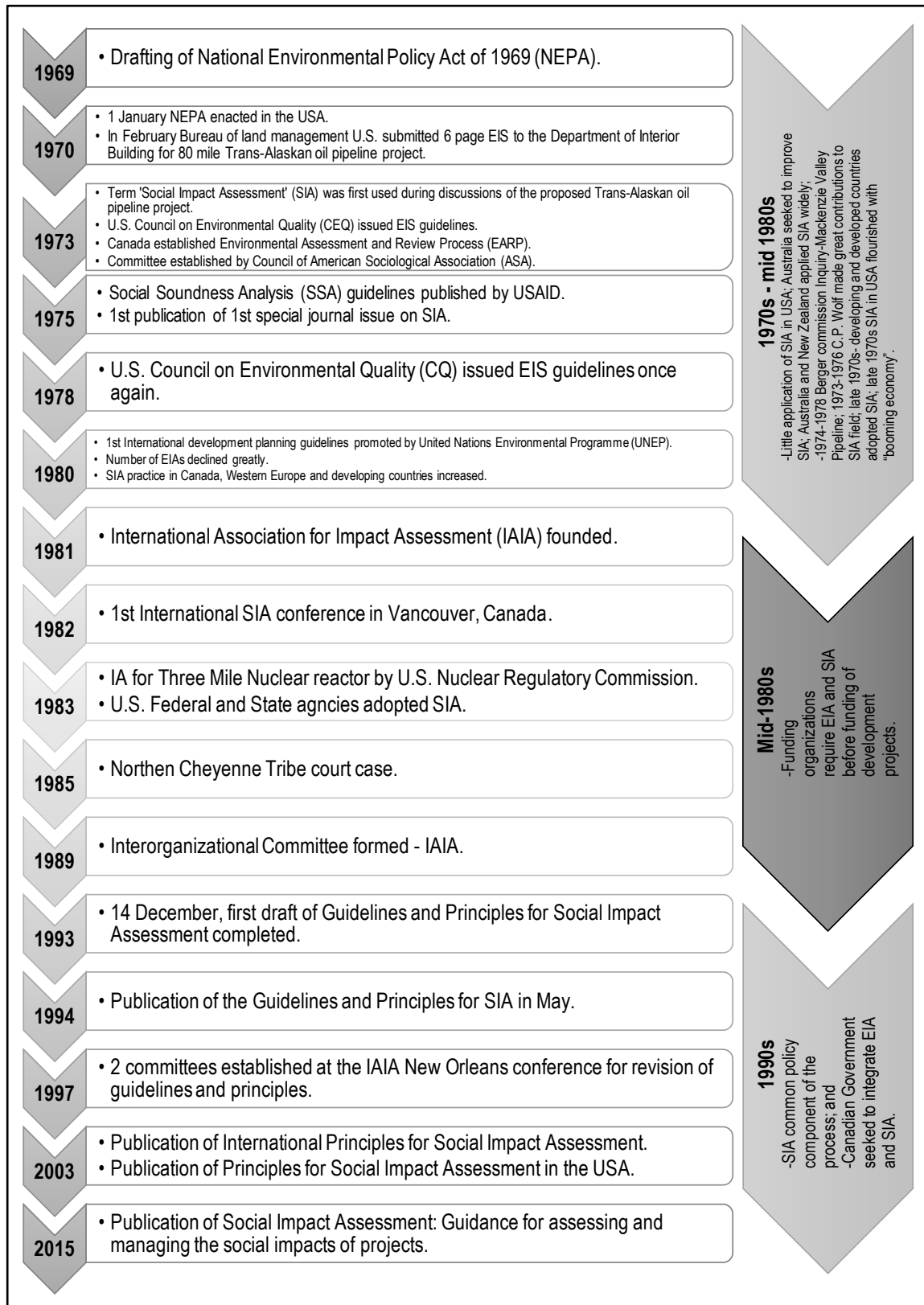


Figure 2-1: Historical timeline of Social Impact Assessment (SIA) (Own Contribution).

The year 1981 was a pivotal period for SIA globally with the establishment of the International Association for Impact Assessment (IAIA), which has created an international platform for researchers, academics and practitioners with interest in the field of impact assessment (Barrow, 2000). IAIA has further stimulated and organised SIA research and practice. In 2003 after years of revisions on the guidelines and principles for SIA, two separate documents were published by IAIA, i.e. the 'International Principles for Social Impact Assessment' and the 'Principles and Guidelines for Social Impact Assessment in the USA' (Vanclay, 2006). The publication of these two documents can be considered as a milestone in the history of SIA globally by setting the minimum standards for SIA best practice around the globe. Moreover, within 10 years, many developed and developing countries had adopted these guiding documents (Aucamp, 2015; Hildebrandt, 2012; Vanclay, 2014a). Finally, in 2015 the 'Social Impact Assessment: Guidance for assessing and managing the social impacts of projects' was published by Vanclay *et al.*, (2015), and after more than 40 years of SIA history, SIA is regarded as a discourse, practice- and research field in its own right (Esteves *et al.*, 2012), although frequently still practised as part of EIA.

2.2.1 SIA in South Africa

Similar to the international history, the historical development of EIA and SIA in South Africa also dates back to the mid-1970s when EIA was practised on a non-mandatory or voluntary basis (Kidd *et al.*, 2018). The historical evolution of Environmental Assessment (EA) in South Africa is well recorded (Kidd *et al.*, 2018), and therefore only a few pivotal periods are worth highlighting here.

One of the key moments in the history of South Africa took place on the 27th of April 1994 when South Africa became a democratic country. This included many changes for South Africans, including the introduction of a new constitutional legal order. In December 1996 the Constitution was adopted which has included a Bill of Rights for South Africans for the very first time. This included human environmental rights in Chapter 2, Section 24¹ of the Constitution of the Republic of South Africa (DEAT, 1997; RSA, 1996; Oosthuizen *et al.*, 2018).

¹ "Everyone has the right-

- a) To an environment that is not harmful to their health or well-being; and
- b) To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:
 - i. Prevent pollution and ecological degradation;
 - ii. Promote conservation; and

The details of South African environmental legislation have already been thoroughly provided and will be discussed later in Chapter 3 (Aucamp *et al.*, 2018; Kruger *et al.*, 2020a), however, it is safe to note that there have been four regulatory regimes, i.e. 1998, 2006, 2010 and 2014/17. Throughout these regimes, SIA in South Africa has evolved as a social specialist report that is integral to the EIA process, and not as a separate assessment in its own right. SIA in South Africa is therefore practiced as a project planning tool in the EIA process, driven largely by best practice principles (Kidd *et al.*, 2018; Kruger & Sandham, 2018; Kruger *et al.*, 2020a; Oosthuizen *et al.*, 2018).

Unlike SIA, DRM has a far longer and more complicated history. Therefore, for the purpose of this paper to understand the discourse of integrating SIA and DRA, an overview of the historical development of DRM follows.

2.3 International Historical Trend of Disaster Risk Management

Similar to the SIA part, this section also provides only an abbreviated summary of DRM's historical trend (Figure 2-2). The historical evolution of DRM is long and complicated, dating back to the years prior to the 1950s when disasters were seen as 'acts of God' — punishments to humans for their misbehaviour. This has encouraged the acceptance of disasters as an unmanageable, external phenomenon.

Before the mid-twentieth century there has been a limited understanding of the interrelationship between people and their environment; in the years following the 1950s, organised attempts have been conducted to reduce exposure to risks and disasters, which resulted in the development of four hazard paradigms, i.e. the *Engineering* (<1950), *Behavioural* (1950–1970), *Development* (1970–1990) and *Complexity Paradigm* (1990–present) (Smith, 2013). A long history of disasters as unmanageable events have resulted in the scientific forecast of weather events, coupled with strengthened infrastructure to reduce disaster risk and humans' exposure to risks, i.e. the Engineering Paradigm. The Behavioural Paradigm is known as the "*human ecology*" period with strong emphasis on a sustainable balance between the environment and human needs. The Development Paradigm has sought to create more awareness on communities' vulnerability to disaster risks, leading to the Complexity Paradigm that focuses more on societal issues like vulnerability and disaster risk, and seek to understand the complex interrelationship between

iii. *Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development" (RSA, 1996).*

human and natural systems, thereby only by the mid-1990s more emphasis was placed on people-centred approaches (Scolobig *et al.*, 2015).

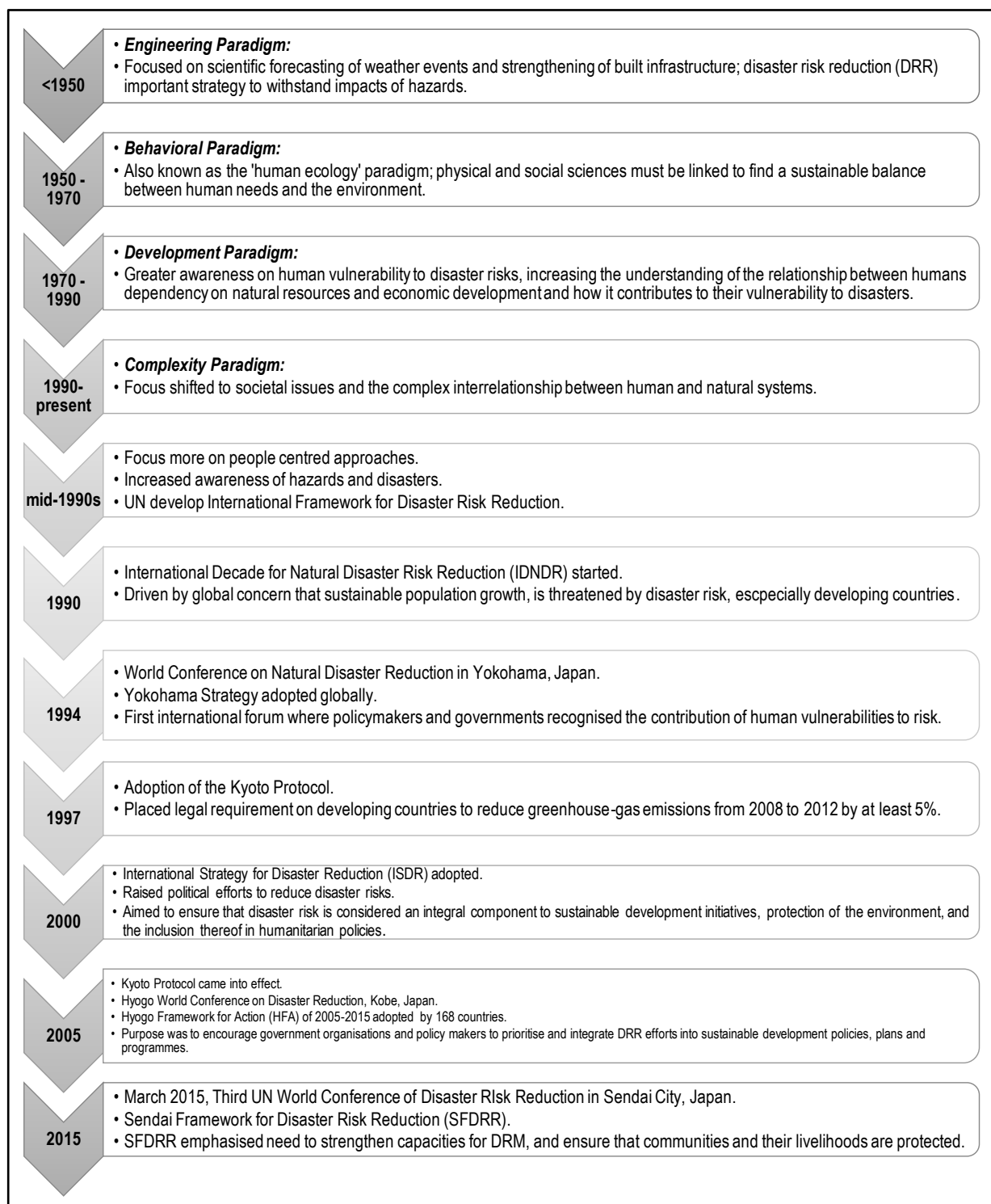


Figure 2-2: Historical timeline of Disaster Risk Management (DRM) (Gall *et al.*, 2015; IDNDR, 1994; ISDR, 2005; Ranke, 2016; Schipper & Pelling, 2006; Scolobig *et al.*, 2015; Smith, 2013; UN, 1998; UNISDR, 2015).

As policy-makers have become aware of the globalization of hazards and disasters, in 1990 the United Nations (UN) initiated the International Decade for Natural Disaster Reduction (IDNDR) with the desire to create an international framework for Disaster Risk Reduction (DRR). Finally, in March 2015 the Third UN World Conference of Disaster Risk Reduction was held in Sendai City, Japan, where UN member states adopted the Sendai Framework for Disaster Risk Reduction of 2015–2030 (SFDRR) (UNISDR, 2015). The SFDRR has emphasised the need to strengthen capacities for DRM and to ensure that communities and their livelihoods are protected (Scott & Few, 2016; UNISDR, 2015). The SFDRR is the first agreement in the post-2015 development agenda, and has seven targets and four priorities for action (UNISDR, 2015). The main targets are to reduce disaster risk globally by the year 2030 and to ensure that communities would be more resilient. The four priorities for action include: (1) the understanding of disaster risks; (2) strengthening disaster risk governance at all spheres of government; (3) strengthening disaster response for effective recovery, rehabilitation and reconstruction; and (4) investing in DRR for resilience. The SFDRR is still in use and relevant for various government departments and policy makers globally. Shifting from a global historical trend, the following section provides the historical development of DRM in South Africa.

2.3.1 Disaster Risk Management in South Africa

Similar to the international trend, DRM in South Africa has a long convoluted historical development path. DRR efforts in South Africa have never explicitly received the same attention or policy stature and financial commitment compared to countries in Latin America and Asia (Holloway, 2003), which is a clear reflection of the political priorities in Africa. However, in line with the international trend, since the establishment of the International Decade for Natural Disaster Reduction (IDNDR) in 1990, the South African focus has shifted from re-active to pro-active approaches to DRR. In the past South Africans have perceived disasters as inevitable, unavoidable and unpredictable events from nature. Their narrow view of these ‘acts of nature’ resulted in their re-active approach to deal with disasters (i.e. response and recovery) (Van Niekerk, 2006; Van Riet, 2009; Vermaak & Van Niekerk, 2004; Khangale, 2016). The historical development of DRM in South Africa is three-fold (Khangale, 2016), i.e. the first phase (1939–1945) comprised the Second World War, whereas the second phase (after 1945) comprised the post-war period up to 1994. These two phases are well documented (Khangale, 2016; Van Niekerk, 2006; Vermaak & Van Niekerk, 2004). However, the third phase, which is considered as the post-apartheid era of DRM in South Africa (1994–present), and also falls within the *Complexity Paradigm* mentioned earlier, is relevant here and discussed in more detail below.

As stated earlier in this paper April 1994 has promised a brighter future for South Africans. However, two months later in June 1994, the Cape Flats in the Western Cape Province of South Africa experienced severe flooding. This milestone historical event has emphasised South Africa's inability to cope with severe events (Van Niekerk, 2006; Vermaak & Van Niekerk, 2004). It is from this historical event onward that South Africa's five stage historical evolution of DRM policy started (Khangale, 2016):

The *Policy-reorientation stage (1994–1997)* has started with the establishment of a formal structure for DRM in 1995, with the Department of Constitutional Development as the focal point for DRM in South Africa. In the year 1996 the National Disaster Management Committee was established, whose main function was to manage and coordinate the disaster management policy process. However, due to no improvements having been made by the committee regarding policy development, there was no more need for this committee in 1997. Following the demise of the committee, the Cabinet has approved the formation of the Inter-Ministrial Committee (IMC) for Disaster Management in 1998, whose main responsibility was to draft a legislative policy for DRM in South Africa. The second stage — *the legislative process (1998–2003)* — commenced when the IMC tabled a Green Paper on Disaster Management for all spheres of government in South Africa, which was published in February 1998. This was considered as the first step towards a formal disaster management policy for South Africa (Vermaak & Van Niekerk, 2004). Following the release of the Green Paper, the White Paper on Disaster Management was published in 1999. The National Disaster Management Centre (NDMC) has also been operational since this time, to ensure improved coordination and communication between different government departments at all spheres of government. Finally, after many years of development of a DRM policy, the Disaster Management Act No. 57 of 2002 (DMA) was promulgated on 15 January 2003. This moment in history was considered as a paradigm shift for South Africa and one of South Africa's most valuable legislative provisions (Van Niekerk, 2006).

The third stage is considered the *implementation of a framework (2005)*, when the National Disaster Management Framework of 2005 (NDMF) came into effect. The period from 2005 to 2015 is considered as the *implementation stage*, and the period from 2015 onwards as the *amendments stage*. In this final stage of the evolution of a DRM policy in South Africa the DMA was revised and the Disaster Management Amendment Act No. 16 of 2015 (DMAA) came into effect in 2015. Disaster Risk Assessments (DRAs) were explicitly included for the first time in DRM legislation, whereby DRA became a legislative requirement in South Africa for the different spheres of Government in the planning phase of disaster risk plans. After the Hyogo Framework for Action (HFA) of 2005 to 2015, South Africa has started to consider DRM as 'everyone's business' (Louw & Van Wyk, 2011). Therefore, from 2015 onwards active participation and the

responsibility of multi-sectoral role-players was emphasised at all spheres of government by the DMAA, to reduce disaster risk for more resilient communities.

The details pertaining to the legislative and statutory provisions for DRM in South Africa are well recorded and will be presented later in Chapter 3. However, for the purpose of this Chapter an exploration of the discourse of integration between SIA and DRA follows.

2.4 Exploring the discourse: integrating SIA and DRA

The historical trends of SIA and DRA provide clear evidence that these two well-established fields of practice have evolved in isolation from each other, both internationally and in South Africa. Earlier it was stated that SIA forms part of EIA, whereas DRA is integral to disaster risk planning, but over the years SIA has received much critique, one of which is that SIA is a stand-alone assessment and too isolated from other impact assessment fields, and that SIA overlaps with other types of impact assessments by means of their theoretical basis, expertise and applied techniques, but cross-fertilization with other assessment practices are often overlooked (Barrow, 2000; Dreyer *et al.*, 2010; Mahmoudi *et al.*, 2013).

DRA has been identified as one of the many fields that overlap with SIA, because SIA reports should be formulated in a “*risk management language*” for decision-makers, project proponents and policy developers to relate to and better comprehend SIA (Kemp, 2011). Without this integration for improved SIA it would be difficult for SIAs to comprehend, plan and manage future developments and risks in the midst of reaching the sustainable development goals (SDGs) (Barrow, 2000). However, the integration and the cross-fertilization of SIA with other fields of impact and risk assessments have been contested. The integration of SIA with other forms of assessments has been under the magnifying glass by many scholars including Barrow (2000), Becker (1997), Cottrell and King (2011), Dendena and Corsi (2015), Domínguez-Gómez (2016), Freudenburg (1986), Gall *et al.* (2015), Mahmoudi *et al.* (2013), Morrison-Saunders *et al.* (2014), Slootweg *et al.* (2001), Usman *et al.* (2013), and Vanclay (2014b). These studies argue the advances of integrating SIA with other impact assessment fields — integration enhances a multi- and transdisciplinary approach to impact assessment, thereby improve the reliability and validity of SIA — and that the strengths of one impact assessment field can off-set the weaknesses of another, while acknowledging that one impact assessment field should not be superior to any other. Additionally, more comprehensive SIA assessment processes, which increase community resilience and promote sustainable development, are argued, but this is only achievable if SIA is more strategic and holistic in its approach. Therefore, impact assessment practices should be

integrated and practices should rather focus on impacts that matter, which could effectively address sustainable development in impact assessment and be complimentary to each other. To do so impact assessment practices should align, however 'silo-based expertise' in impact assessment practices will be inevitable (Morrison-Saunders *et al.*, 2014). Vanclay (2014b) has strongly critiqued Morrison-Saunders *et al.* (2014) and suggested that impact assessment should rather be better coordinated than integrated, and that effective, efficient, comprehensive impact assessment is needed.

The integration of DRA for improved SIA is a relatively new concept, and in South African it is a new trend, which is why this discourse analysis is necessary (Barrow, 2000; Becker, 1997; Benson & Twigg, 2007; Cottrell & King, 2011; Domínguez-Gómez, 2016; Durning, 2014; Gall *et al.*, 2015; Imperiale & Vanclay, 2016; Mahmoudi *et al.*, 2013; Ranke, 2016; Usman *et al.*, 2013). A review of relevant literature has revealed three themes for the possible integration of SIA and DRA, i.e. *Focus*, *Approach* and *Regulation* (Figure 2-3).

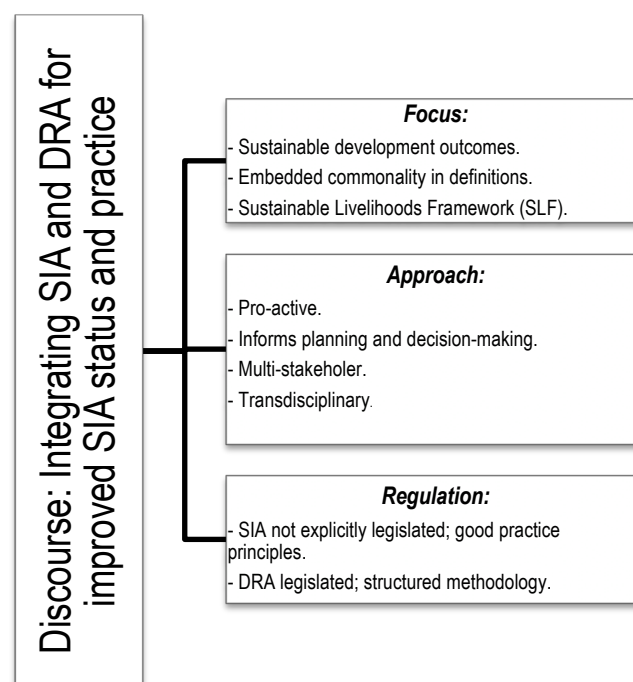


Figure 2-3: Integration of SIA and DRA (Own Contribution).

2.4.1 Focus

The first theme that has emerged to support the potential integration of SIA and DRA is their commonality in terms of their *focus*. The main focus of both SIA and DRA is to aid in the achievement of sustainable development outcomes during impact assessment (Aucamp *et al.*,

2011; Aucamp & Lombard, 2017; Baines & Taylor, 2011; Barrow, 2000; Esteves & Vanclay, 2009; Louw & Van Wyk, 2011; Mahmoudi *et al.*, 2013; Usman *et al.*, 2013; Vanclay & Esteves, 2011; Vanclay, 2014b; Vanclay *et al.*, 2015; Van Riet, 2009). Aucamp *et al.* (2011) argues that the three pillars that encapsulate sustainable development should be relied on to find a sustainable balance between present and future needs which include environmental protection, and social- and economic development. However, Mahmoudi *et al.* (2013) posits that sustainable development will be hard to achieve without the integration of SIA and DRA, hence resulting in less effective SIAs. SIA and DRA share a focal commonality embedded in their definitions, i.e. people are at the forefront of planned interventions. Mahmoudi *et al.* (2013) argues that there has been an increased focus on integrative approaches in impact assessment in the pursuit of sustainable development efforts, which is supported by Baines and Taylor (2011) and Vanclay and Esteves (2011). It is evident from the definition of SIA in the International Principles for SIA that the main focus of SIA is also embedded in sustainable development, which is the overarching goal for both SIA and DRA (IAIA, 2003; Vanclay, 2014b), and it is therefore suggested that SIA and DRA can play a vital role in (1) the understanding of risks of planned development interventions; (2) the consequences that these risks might hold; (3) provide measures to assist vulnerable communities in becoming more resilient and to benefit from sustainable development projects; and also, (4) to advise project developers and decision makers to make better informed decisions in reaching sustainable development efforts (Barrow, 2000; Mahmoudi *et al.*, 2013; Usman *et al.*, 2013).

Another *focal* commonality shared by SIA and DRA is embedded in the Sustainable Livelihoods Approach, better known as the *Sustainable Livelihoods Framework* (SLF) (Coakes & Sadler, 2011; Esteves & Vanclay, 2009). The SLF is a people-centred approach that identifies the different livelihood assets within a community to determine the status of a community's resilience and sustainability against risks and threats (DFID, 1999). The orientation of SIA in the prediction and mitigation of impacts should change to the facilitation of positive development outcomes within a sustainable development framework, which is in line with the International principles for SIA as well as with the SLF (Esteves & Vanclay, 2009).

With the main focus of SIA and DRA being identified as people within sustainable development, the discussion moves to the second theme to justify the integration of SIA and DRA.

2.4.2 Approach

The second communal theme lies in the *approaches* to SIA and DRA. Becker (1997) states that another commonality between SIA and DRA lies within the phases taken in SIA by referring to

their *approaches* or methodology. The approach to SIA is pro-active, because it functions mostly within the scoping or planning phase of the EIA process (Aucamp *et al.*, 2011; Barrow, 2000; Esteves & Vanclay, 2009; Esteves *et al.*, 2017; Hildebrandt & Sandham, 2014; Mahmoudi *et al.*, 2013; O’Faircheallaigh, 2009). This view of pro-active SIA is supported by Barrow (2000), which has motivated that it would support DRA and assist in sustainable development efforts. Similar to SIA, DRA is pro-active in its approach and an integral component of disaster risk planning processes (Louw & Van Wyk, 2011; Mahmoudi *et al.*, 2013; Van Riet, 2009; Vermaak & Van Niekerk, 2004). It is therefore argued that the integration of SIA and DRA can also be used to improve the planning process of proposed developments (Cottrell & King, 2011).

Another commonality of *approach* shared by SIA and DRA is their multi-stakeholder and trans-disciplinary approach (Mahmoudi *et al.*, 2013). Like SIA, DRA also makes use of indigenous local knowledge, field research, consultation with key stakeholders across various disciplines or fields of research and practice, referred to as the “*ground truthing*” of research findings (Van Riet, 2009). A multi-stakeholder and trans-disciplinary approach will enhance the perspectives and skills that practitioners have to offer. While discrepancies and incompetence do occur as a result of untrained practitioners’ activities, the interdisciplinary benefits of an integrated SIA-DRA approach can go a long way to address such practices (Kruger & Sandham, 2018; Van Riet, 2009; Vermaak & Van Niekerk, 2004). However, despite the frustrations and problems experienced in both fields, the cross-fertilizations of their *approaches* are promising and should be encouraged (Freudenburg, 1984; Kruger *et al.*, 2020b).

2.4.3 Regulation

The last theme for potential integration is *regulation*. The purpose of this theme is not to repeat what the SIA and DRA legislative and statutory provisions constitute, which is later presented in Chapter 3, but rather to highlight areas for possible integration in terms of *regulation*. In a recent study of the SIA and DRA legislative and statutory provisions in a South African context (see Chapter 3), commonalities in terms of the exclusion of the consideration of ‘social impacts’ and a shared focus in *regulations* were observed (Kruger *et al.*, 2020a). Sections 2, 23, 28 and 30 of the National Environmental Management Act of 1998 (NEMA) overlap with the DRR regulatory requirements as set out in the Disaster Management Act of 2002 (DMA) justifying the integration of impact assessments like SIA and DRA (Khangale, 2016). Furthermore, both SIA and DRA are mandatory — SIA as part of EIA requirements in terms of the NEMA, and DRA under the DMA — and both strive to achieve positive sustainable development outcomes through a resilience lens, but in terms of regulation, to do so effectively and efficiently, still needs considerable

development, which is a main thrust of this study and such suggestions also appear in Chapter 3 to 6 (Imperiale & Vanclay 2016; Kruger *et al.*, 2020a).

2.5 Conclusion

Social Impact Assessment (SIA) has been identified as a tool that can reduce vulnerabilities to risks and enhance community resilience, but as an integrated component of Environmental Impact Assessment (EIA) is exposed as being too detached from other impact assessment fields, thereby having an adverse effect on SIA effectiveness, while Disaster Risk Assessment (DRA) has been identified as a field that could globally positively contribute to improved SIA efficacy. This paper has through a literature review investigated the current discourse of integrating DRA for improved SIA. An investigation of the historical trends of SIA and DRA has provided evidence that they are two distinct fields of theory and practice, but as revealed in the discourse of integrating SIA and DRA, are complimentary to each other as articulated in three areas of potential integration i.e. *focus*, *approach* and *regulation*. SIA and DRA place people at the forefront of sustainable development, which is embedded in their definitions, and forms the first theme for integration, i.e. shared focus. They both have (1) pro-active; (2) multi-stakeholder; and (3) transdisciplinary approaches and are part of the planning processes of proposed interventions. Both fields are also mandatory in terms of regulation, but integration in terms of their regulation requires further investigation.

This study has shown that the international theoretical discourse of SIA-DRA integration for improved SIA practice, can assist in enhancing communities' resilience, improve social well-being and effectively assist in enhancing social sustainable development efforts of impact assessments. Therefore, for future research and practice the integration of DRA with SIA should be pro-actively sought after by the SIA and DRA communities.

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CHAPTER 3: IMPROVED SIA THROUGH DRA INTEGRATION: LESSONS FROM A SOUTH AFRICAN LEGISLATIVE COMPARISON

ARTICLE MANUSCRIPT 2

Research Objective 2: To examine and critically compare current South African legislation and policy concerning SIA and DRA.

Published in Impact Assessment and Project Appraisal (IAPA) (Annexures A and B).

Abstract

Social Impact Assessment (SIA) and Disaster Risk Assessment (DRA) are two distinct fields, with broadly similar aims relating to sustainable communities, but usually regulated by differing regulatory systems. In South Africa, SIA is an integral but often neglected component of Environmental Impact Assessment (EIA), while DRA informs Disaster Risk Management (DRM). The potential integration of SIA and DRA is a new trend internationally. This study examines South African EIA and DRM legislative and statutory provisions, searching for commonalities that could support potential integration between SIA and DRA — a phenomenon not yet reported on in South African literature or elsewhere. The EIA legislation was found to have a strong biophysical focus with limited provision for social issues, whereas DRM legislation more explicitly places people at the forefront of risk reduction. Despite the observed differences, commonalities were observed in SIA and DRA's shared purpose to reduce risks, increase community resilience and achieve sustainable development. These findings suggest areas which offer opportunities for meaningful collaboration between SIA and DRA, leading to improved SIA status and practice in South Africa and valuable lessons for other countries with a SIA-DRA dichotomy.

Keywords: Social Impact Assessment (SIA); Disaster Risk Assessment (DRA); legislation; integration; South Africa.

3.1 Introduction

June 1992 marked a pivotal year globally for Environmental Management (EM) with the release of the 27 Rio Declaration principles at the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil. The purpose of the Rio principles was to address pressing global problems and to ensure a sustainable future for all humankind (Aucamp 2015; UN 1992; Wisner et al. 2012). Principles 1² and 17³ paved the way for Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) by placing human beings at the forefront of development and to ensure that the needs of present and future generations are met in a sustainable manner (Aucamp 2015; Barrow 2006; Gardiner 2002; Hildebrandt & Sandham 2014;

² "Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature" (UNESCO, 1992:1).

³ "Environmental Impact Assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority" (UNESCO, 1992:4).

UN 1992; UNESCO 1992; Wisner et al. 2012). The 2015 Sustainable Development Goals (SDGs) reiterate that vulnerable communities need to be protected and that development must be sustainably managed and maintained (UNDP 2016). Aucamp et al. (2018) assert that a sustainable future and present needs are dependent on the interaction and balance between a protected environment and social- and economic development. It is therefore the purpose of an EIA to manage and influence human behaviour and to ensure that sustainable outcomes are met (Aucamp et al. 2018).

EIA refers to a process where potential biophysical and social impacts of proposed developments are identified, predicted, evaluated and mitigated prior to decision making (IAIA 1999). Moreover, EIA is perceived in many countries as a governance instrument that plays a significant role in raising environmental awareness and also incorporate environmental values into decision-making of proposed interventions (Arts et al. 2012). It is evident from the understanding of this definition that the social dimension is integral to the EIA process. SIA is defined as: *“the process of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions and any social change process invoked by those interventions”* (IAIA 2003:5). This shows that EIA and SIA have an overarching purpose in impact assessment (Kruger & Sandham 2018). Since the inception of the National Environmental Policy Act (NEPA) in 1969, SIA internationally evolved as an integrated component within the broader context of EIA. It is argued that internationally SIA is in effect ‘superior’ to EIA, because EIA developed and remained a regulatory tool in many countries, whereas SIA is largely driven by good practice, thereby it is now considered as a discourse in its own right (Vanclay 2014; 2019). However, Esteves et al. (2012) stated that despite numerous calls for SIA to become separate from EIA as an assessment in its own right, the domination of the biophysical component of the EIA process still prevails, which contributes to unbalanced EIA.

South Africa has a similar EIA scenario, where SIA forms an integral component of the EIA process by means of a specialist report that informs the EIA (Kruger & Sandham 2018). The effectiveness of SIA as well as the quality of SIA reports in South Africa have been investigated by the likes of Du Pisani and Sandham (2006), Hildebrandt (2012) and Hildebrandt and Sandham (2014). Globally the subsidiary status of SIA in the EIA process has also been under investigation and scrutinising the practice of SIA (Aucamp et al. 2011; Baines & Taylor 2011; Becker 1997:142–173; Bowd et al. 2015; Burdige 2002; 2003; Chadwick 2002; Du Pisani & Sandham 2006; Glasson & Heaney 1993; Hildebrandt & Sandham 2014; Kemp 2011; Kruger & Sandham 2018; Sandham et al. 2005; Suopajärvi, 2013). Hildebrandt and Sandham (2014) explored the quality of Social Impact Assessment Reports (SIARs) in South Africa after two legislative regimes (Environmental Conservation Act (ECA) and National Environmental Management Act (NEMA)), which revealed

a modest improvement in the quality of SIARs in South Africa, despite the many gaps that were identified in practice. Additionally, SIA practitioners' perspectives on the neglected status of South African SIA identified some of the problems experienced in South African SIA practice, which included the *"inadequacy of SIA frameworks and guidelines to address the uniqueness of different social environments"* and the *"poor enforcement of implementation"* of SIA (Kruger & Sandham 2018). It is therefore suggested that for SIA in South Africa to move towards sustainable SIA and for improved SIA practice, regulatory frameworks need to be improved and SIA should become a legal binding requirement, i.e. SIA should not only be driven by best practice, but also by compliance (Aucamp et al. 2011; Hildebrandt & Sandham 2014; Kruger & Sandham 2018).

Usman et al. (2013) explain that the purpose of development projects is to enhance quality of life and to ensure a sustainable future for the next generation. To enhance the proposed gains of development projects, disaster risks need to be identified and assessed prior to developments to anticipate the impact thereof on the environment and on vulnerable communities. SIA can play a vital role to reduce risks and increase community resilience. Thereby, development planning requires (of) both SIA and Disaster Risk Management (DRM) to reduce the potential disaster risks and severe social impacts developments might hold.

Following global agreements on disaster risk reduction (DRR), i.e. the Yokohama Strategy (1994), International Strategy for Disaster Reduction (ISDR) (2000), and the Hyogo Framework for Action (HFA) (2005–2015), came the Sendai Framework for Disaster Risk Reduction (SFDRR), which was adopted by UN member states in 2015 to globally reduce risks and vulnerabilities, and to find ways to build nations' resilience. According to the UNISDR (2015) the SFDRR is the first agreement in the post-2015 development agenda that is mainly aimed to globally reduce disaster risks by the year 2030 and to ensure that communities will be more sustainable and resilient. Therefore, the SFDRR sets five priorities and seven targets for action for governments and policy makers worldwide in reaching its aim. The priority for actions includes that countries should develop legislation, policies and institutional frameworks for DRR to manage risks with a strong institutional basis to implement; that disaster risks need to be identified, assessed and monitored in all spheres of government; and that risks that are related to changing environmental, social and economic conditions be addressed prior to development planning (UNISDR 2015).

In January 2003 South Africa was one of the first countries in Southern Africa to legislate DRM with the promulgation of the Disaster Management Act No. 57 of 2002 (DMA) (Van Niekerk 2014; RSA 2002a). The National Disaster Management Framework of 2005 (NDMF) emphasises the need to identify and assess high risk developments that potentially might hold for environmental, social and economic impacts on vulnerable communities (Key Performance Area 2) (RSA 2005). However, DRM and EIA are two distinct fields internationally, and in South Africa, where the

jurisdiction falls under different government departments, which are also mandated by separate legislation under: The National Department of Cooperative Governance and Traditional Affairs (CoGTA) and the National Department of Environmental Affairs (DEA) respectively (RSA 1998a; RSA 2002a). Wisner et al. (2012) has attempted to justify the integration of DRM, EM and sustainable development due to their transdisciplinary nature. Impact assessment practices should align for efficiency and the wider drive towards sustainability (Morrison-Saunders et al. 2014), but Vanclay (2014) strongly criticised Morrison-Saunders et al. (2014) and suggested that impact assessment rather be better coordinated than integrated, and emphasised the need for effective, efficient, comprehensive impact assessment. This attempt followed earlier calls for the integration of SIA and Disaster Risk Assessment (DRA), which have been investigated internationally albeit on a limited scale (Becker 1997; Benson & Twigg 2007; Cottrell & King 2011; Domínguez-Gómez 2016; Imperiale & Vanclay 2016; Mahmoudi et al. 2013; Tajima et al. 2014; Usman et al. 2013).

However, this new international trend in the field of EM has not been researched in South Africa. Therefore, it is the aim of this paper to examine and compare current South African SIA and DRA legislation and statutory provisions for commonalities that could potentially offer opportunities for future integration⁴ of SIA and DRA.

3.2 SIA legislation and statutory provisions

Globally SIA developed alongside EIA, following the promulgation of the United States' National Environmental Policy Act (NEPA) in 1969 (Barrow 2000; Finsterbusch 1995; Freudenburg 1986; Kruger & Sandham 2018; Momtaz 2005). In most countries SIA is embedded in EIA legislative structures including key global initiatives such as Local Agenda 21 (LA21), the Global Reporting Initiative (GRI), the Equator Principles and the Socio-economic Assessment Toolbox of Anglo America, aiming to facilitate the incorporation of social issues in policies and legislative structures for decision making purposes (Aucamp et al. 2018; Bice 2017; Kruger & Sandham 2018). The discussions below include overviews of relevant environmental legislation in South Africa. To contextualise the environmental legislation, a brief overview of the Constitution of the Republic of South Africa is given firstly.

⁴ The term 'integration' refers here to SIA and DRA as two separate fields with shared interests functioning as a cohesive whole, making provisions for practical cooperation between SIA and DRA, and potentially contributing to improved SIA status and practice.

3.2.1 Build-up to NEMA

The year 1994 has marked a pivotal change for all South Africans when South Africa became a democratic country, resulting in the adoption of a new constitutional legal order in 1996. The Constitution of the Republic of South Africa No. 108 of 1996 included a Bill of Rights in Chapter 2 of the Act for the first time. According to this Act the Bill of Rights is considered as the “cornerstone of democracy in South Africa”, which includes the human rights of all South Africans (RSA 1996:1245). Section 24 (a-b)⁵ of the Bill of Rights stipulates South Africans’ rights in terms of the environment — meaning that present and future generations of South Africans have the right to a protected environment that does not threaten their health and livelihoods. This provides for a sustainable future in terms of the environmental and socio-ecological development for present and future generations to be promoted and protected.

South African EIA-practice began in the early 1970s (Kidd et al. 2018; Oosthuizen et al. 2018) on a non-mandatory basis. However, along with the promulgation of the new constitutional order and the increased awareness of the people’s rights in terms of the definition of the ‘environment’ included in the Bill of Rights, EIA became mandatory in 1997 with the promulgation of EIA regulations in terms of the Environment Conservation Act No. 73 of 1989 (ECA) (RSA 1989). This marks the first era of mandatory EIA in South Africa. In ECA, the ‘environment’ was broadly defined as the “*aggregate of surrounding objects, conditions and influences that influence the life and habits of man or any other organism or collection of organisms*”, (RSA 1989:1481) with limited focus on social aspects in the Act.

3.2.2 National Environmental Management Act No. 107 of 1998

Following the first regime of mandatory EIA under ECA, the second era of mandatory EIA came into effect in April 2006 with a new set of EIA regulations in terms of the National Environmental Management Act No. 107 of 1998 (NEMA). The NEMA regulations were then amended again in 2010, 2014 and in 2017 for improved effectiveness and efficiency (Du Pisani & Sandham 2006; Hildebrandt & Sandham 2014; Kidd et al. 2018; Oosthuizen et al. 2018).

⁵ “Everyone has the right- (a) to an environment that is not harmful to their health or well-being; and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that – (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development” (RSA 1996:1251–1253).

The Preamble of NEMA stipulates the rights of the people of South Africa in accordance with Chapter 2, sub-section 24 of the Constitution (RSA 1998a: Preamble; RSA 1996), and provides three key definitions pertaining to environmental management which are relevant for the purpose of this study. First, in NEMA Section 1(xi) a very broad definition of the ‘environment’ states that it refers to people and the conditions in which they live. It includes: “(i) *the land, water and atmosphere of the earth; (ii) micro-organisms, plant and animal life; (iii) any part or combination of (i) and (ii) and the interrelationships among and between them; and (iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being*” (RSA 1998a:8). Second, the term ‘hazard’ refers to “a source of or exposure to danger”, without the specification of people. Third, ‘sustainable development’ is defined, in a way that connects people and the environment, as “*the integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations*” (RSA 1998a:8–10).

The first chapter of NEMA stipulates the National Environmental Management Principles. Sections 2(2), (3), 4(a)(vii)(viii), (b) and (i) are important in highlighting the fact that the principles for EM call for people and their needs to be prioritised, social impacts to be considered, development to take place sustainably by integrating its social, environmental and economic aspects and sustainable development to consider the application of a “*risk-averse and cautious approach*”, so as to minimise and mitigate the negative impacts on people and the environment and always to pursue the best practice option for the benefit of both people and their environment (RSA 1998a:12). Section 23 of the fifth chapter of NEMA also requires the integration of EM activities and the principles of EM provided in Section 2 of the Act. Section 23 (2)(b) and Section 24 (1) (a–c) emphasise the three spheres to be considered in impact assessments: (1) the environment, (2) socio-economic conditions, and (3) cultural heritage (RSA 1998a). According to Section 24 (3)(a) of the Act, the potential impacts identified within these three spheres must be addressed in accordance with the procedures prescribed in sub-section (7) of Section 24⁶ (RSA 1998a). Notably, SIA is nowhere explicitly specifically mentioned in the Act.

Since the inception of EIA following the promulgation of NEPA in 1969 in the USA, SIA evolved as a specific type of impact assessment within the broader framework of EIA. Globally, the interest in SIA grew as nations embedded SIA in their legislation (Hildebrandt & Sandham 2014; Kruger & Sandham 2018; Pope et al. 2013). Despite significant recognition in the social field, globally the

⁶ Section 24 (7)(a-i) provide for the procedures for the investigation, assessment and reporting of potential impacts of environmental management activities. Sub-section 7(b) emphasises the identification of potential impacts, cumulative effects and alternatives, and the assessment of the significance of potential impacts on the environment, cultural heritage and on socio-economic conditions (RSA 1998a:36).

biophysical paradigm in EIA still dominates the social paradigm (Esteves et al. 2012; Kruger & Sandham 2018). This dominant state of the biophysical component also prevails in South African EIA. The very broad definition of the 'environment' as provided in the NEMA, considers people as integral to the environment, thereby contributing to the integration of EIA and SIA in South Africa. This observation is supported by Aucamp et al. (2011), Du Pisani and Sandham (2006) and Hildebrandt and Sandham (2014), all of whom ascribe the reason and/or need for the integration of EIA and SIA in South Africa to the broad definition of the 'environment' in the NEMA. SIA in South Africa has therefore developed fully as an integral component of EIA, where SIA is produced in the form of a specialist report of EIA, or as a component of Basic Assessments (BAs) (Kruger & Sandham 2018). Additionally, the dominance of the biophysical paradigm of the environment in EIA, at the cost of the social paradigm, has also contributed to SIA's subsidiary status in comparison with EIA, resulting in an unbalanced sustainability scale internationally as well as in South Africa (Aucamp et al. 2011; Bowd et al. 2015; Burdge 2002; 2003; Chadwick 2002; Du Pisani & Sandham 2006; Glasson & Heaney 1993; Hildebrandt & Sandham 2014; Kruger & Sandham 2018; Sandham *et al.* 2005; Suopajärvi, 2013).

3.2.3 The National Heritage Resource Act No. 25 of 1999 (NHRA)

The National Heritage Resources Act No. 25 of 1999 (NHRA) is one of the first acts relevant to the environmental and social field (Aucamp et al. 2018). The NHRA empowers communities to protect and nurture their national heritage for future generations. The South African government is hereby also obliged to manage the national heritage resources in an integrated and interactive manner. Thus, the NHRA is the act that protects the national heritage and culture of all South Africans. The NHRA further includes detailed provisions for the protection and the management of the country's inherited resources. Section 5 of Chapter 1 provides the general principles for the management of heritage resources, and sub-section 7 includes the provisions that must be included in the identification, assessment and management of these resources. Here, sub-section 7(d) specifically makes provision for the NHRA's contribution to "*social and economic development*" (RSA 1999:16).

3.2.4 The National Water Act No. 36 of 1998 (NWA)

The National Water Act No. 36 of 1998 (NWA) is another relevant act pointing to social issues. Chapter 1 of the Act provides the fundamental principles and interpretation of the Act. The principles state that "*sustainability and equity are identified as central guiding principles in the*

protection, use, development, conservation, management and control of water resources” (RSA 1998b:14). These principles further recognise the basic human needs of present and future generations, including the promotion of socio-economic development regarding the use of water. The purpose of the NWA (Chapter 1, Section 2 (a-e)) affirms that everyone must have equitable access to water resources, that the results of past gender and racial discrimination be readdressed, that the efficient, sustainable and beneficial use of water resources be promoted, and lastly that social and economic development be facilitated (Aucamp et al. 2018; RSA 1998b).

3.2.5 The Mineral and Petroleum Resources Development Act of 2002 (MPRDA)

The Mineral and Petroleum Resources Development Act of 2002 (MPRDA) is another act that recognises the social upliftment of communities which are affected by mining and the need to promote local and rural development (RSA 2002b: Preamble). Chapter 2, Section 2 of the MPRDA states that, amongst others, the objectives of the Act are to:

“(e) promote economic growth and mineral and petroleum resources development in the Republic;
(f) promote employment and advance the social and economic welfare of all South Africans; and
(i) ensure that holders of mining and production rights contribute towards the socio-economic development of the areas in which they are operating” (RSA 2002b:18).

Furthermore, Section 37 of Chapter 4 endorses the EM principles as set out in Section 2 of the NEMA. Section 39 b (i–ii) states that EM applicants must investigate, assess and evaluate the impacts of proposed mining operations and prospected mining on *“(i) the environment”* and *“(ii) the socio-economic conditions of any person who might be directly affected by the prospecting or mining operation”* (RSA 2002b:44). By including these sections in the MPRDA an EIA and SIA is required by the Act. Unlike the previously mentioned related acts, this is the only environmental act explicitly requiring a social development output by means of a Social and Labour Plan (SLP) (Aucamp et al. 2018).

3.2.6 Promotion of Administrative Justice Act No. 3 of 2000 (PAJA)

The Promotion of Administrative Justice Act, No. 3 of 2000 (PAJA) gives effect to the human rights that South Africans have in terms of legal administrative action, echoing what was also stated in the South African Bill of Rights. This ensures that citizens have a right to comment on

decisions that affect them and that state organisations must provide clear explanations and evidence which their decisions are based upon, especially decisions that hold social impacts (Aucamp et al. 2018; RSA 2000a).

3.2.7 National Environmental Management: Air Quality Act No. 39 of 2004 and the National Environmental Management: Waste Act No. 59 of 2008

Lastly, the National Environmental Management: Air Quality Act, No. 39 of 2004 (RSA 2004) (NEMAQA) and the National Environmental Management: Waste Act, No. 59 of 2008 (RSA 2008) (NEMWA) are also considered relevant acts in EM. These are two specific Acts that fall under the jurisdiction of the NEMA, meaning that the principles as set out in Chapter 1 of the NEMA also apply to these two Acts (Aucamp et al. 2018).

The overview of the other relevant environmental legislation provides additional specifications to what is included in the NEMA. It shows that the social dimension in these legislative provisions are both implicit and explicit. Having dealt with the legislation and statutory provisions pertaining to SIA, the focus in the following sections will move to the legislation pertaining to matters of DRA.

3.3 DRM legislation and statutory provisions

South Africa was one of the first countries in Southern Africa to legislate disaster risk management (DRM) (Van Niekerk 2014). A milestone event that spearheaded the country's DRM legislation development was the severe flooding in the Western Cape province in 1994, culminating in the Disaster Management Act No. 57 of 2002 (DMA) and the National Disaster Management Framework of 2005 (NDMF) (Van Niekerk 2014). The promulgation of the DMA and the NDMF emphasised the decentralisation of DRM activities within all spheres of government⁷ in South Africa (Van Niekerk 2014). This is in line with the procedures and promulgation of the Local Government: Municipal Systems Act, No. 32 of 2000, which in Chapter 5 enforces Integrated Development Planning (IDP) as a legislative requirement (RSA 2000b). This has placed more responsibility on all spheres of government to find a balance between the "*social, economic and ecological pillars of sustainability*" (Van Niekerk 2006:110) and to socially and economically "*uplift*" communities (RSA 2000b). The promulgation of the DMA and the NDMF introduced a new way

⁷ South Africa consist of the following spheres of government: local, district (comprising a number of local municipalities), metropolitan (not comprising any local or district municipality), provincial (comprising a number of district municipalities), and national (comprising of nine (9) provincial municipalities).

to manage the complex societies in South Africa (Van Niekerk 2006). It is also noteworthy that the DMA and the NDMF is in line with the broader international context of the Hyogo Framework for Action (HFA) (2005–2015) and the Sendai Framework for Disaster Risk Reduction (SFDRR) in their efforts to globally reduce disaster risks and in future ensure more resilient and sustainable communities (ISDR 2005; UNISDR 2015).

3.3.1 Disaster Management Act No. 57 of 2002

The Disaster Management Act No. 57 of 2002 (DMA) makes provision for a disaster management policy that is integrated and co-ordinated focusing on *“preventing or reducing the risk of disasters, mitigating the severity of disasters, emergency preparedness, rapid and effective response to disasters and post-disaster recovery”* (RSA 2002a:2). Section 1 of the first Chapter of the DMA provides various definitions, including the detailed definition of what constitutes a ‘disaster’. The severity of conditions and the resulting impacts on people are emphasised in the DMA by referring to a ‘disaster’ as a *“progressive or sudden, widespread or localised, natural or human-caused occurrence which — (a) causes or threatens to cause — (i) death, injury or disease; (ii) damage to property, infrastructure or the environment; or (iii) disruption of the life of a community; and (b) is of a magnitude that exceeds the ability of those affected by the disaster to cope with its effects using only their own resources”* (RSA 2002a:6). The DMA focuses mainly on establishing various DRM structures, including the establishment of disaster management centres and intergovernmental structures in all spheres of government, the development of a policy framework and the procedures involving the declaration of a state of a disaster, i.e. the DMA contains South Africa’s guiding policy as to *“what”* DRM should be (Van Niekerk 2014:861).

Sections 20, 33 and 47 of the DMA include the people-centred legislation pertaining to all of Government’s prevention and mitigation provisions (RSA 2002a). Here it is indicated that national, provincial and local disaster management centres must provide guidance to national departments, organisations, private-sector bodies, communities and individuals to determine and prevent or reduce disaster risks. Such guidance takes the form of determining levels of risk, assessing the vulnerabilities of communities and individuals, increasing the resilience of communities and individuals by minimising risks and impacts, developing and implementing appropriate methods for prevention and mitigation and integrating them into development initiatives and the managing of high-risk developments. The DMA also stipulates that all spheres of government must promote and encourage risk-avoidance behaviour (RSA 2002a). Although the DMA does not specifically and formally refer to the development of DRAs, it is however insinuated through Sections 20, 25, 33, 38, 39, 47, 52 and 53 of the Act that DRAs and matters

pertaining thereto must be conducted as part of the development of disaster management plans (DMPs), thus making DRAs for planning purposes a legislative requirement for all spheres of government. Additionally, Section 7(1) of the DMA provides for the development of a national DRM policy framework that is coherent, inclusive and transparent (RSA, 2002a). Section 7(2) (d–e) stipulates that the framework should guide the development and implementation of DRM and the provisions made for in the DMA at all levels of government. This, in turn calls for co-operative governance on issues relating to DRM. Therefore, three years after the promulgation of the DMA, the National Disaster Management Framework of 2005 (NDMF) was developed.

3.3.2 National Disaster Management Framework of 2005

The NDMF emerged as the policy framework providing guidance on DRM in the country. The NDMF emphasises the disaster risk reduction (DRR) concepts of “*disaster prevention and mitigation as the core principles to guide disaster risk management in South Africa*” (RSA 2005:2). Van Niekerk (2014:861) explained the NDMF as the guiding framework on “*how*” the objectives of the DMA can be achieved. It further recognises diverse risks and prioritises developmental measures to reduce vulnerability and increase the resilience of communities and individuals (RSA 2005:2). Hereby, the NDMF goes one step further than the DMA, by setting a formal process in place for spheres of government to guide government officials and relevant stakeholders in conducting DRAs for the development of DMPs and matters pertaining thereto.

The NDMF consists of two parts comprising four key performance areas (KPAs) and three Enablers (Table 3-1). The objective of the Enablers is to guide and to ensure that the objectives are met as stipulated in the KPAs.

Table 3-1: The NDMF’s key performance areas (KPAs) and Enablers (adapted from RSA 2005).

	Description
KPA 1	Integrated institutional capacity for disaster risk management
KPA 2	Disaster risk assessment
KPA 3	Disaster risk reduction
KPA 4	Response and recovery
Enabler 1	Information management and communication
Enabler 2	Education, training, public awareness and research
Enabler 3	Funding arrangements for disaster risk management

The purpose of this section is to identify the sections in the NDMF relevant to DRA, and for this reason only KPA 2 (disaster risk assessment) and KPA 3 (disaster risk reduction) are relevant for they respectively address the need for DRA, which in turn informs DMP. The NDMF (RSA 2005:25) describes KPA 2's objective as establishing *"a uniform approach to assessing and monitoring disaster risks that will inform disaster risk management planning and disaster risk reduction"* efforts, and further stipulates the requirements for implementing and monitoring DRA by different spheres of government. KPA 2 introduces the process of conducting DRA, DRA methodology and the way in which DRA informs the DRM planning process. It further describes the requirements for updating and monitoring disaster risk information, exploring measures to effectively monitor risk assessments and ensure quality DRAs, as well as to inform and guide KPA 3 (RSA 2005:25–38). The importance of effective DRR and DRM efforts is highlighted in the DMA (Sections 20, 33 and 47), constituting the need for DRA. By formally legislating DRA in the Act, it enforces the different levels of government towards efforts in guiding effective DRR in the country.

Sections 25, 38 and 52 of the DMA provides for the development and implementation of disaster risk management plans and disaster risk programmes. The objective of KPA 3 is to ensure that integrated disaster risk management plans and disaster risk reduction programmes are developed and implemented (RSA 2005:39). It provides the requirements for effective disaster risk management planning within all spheres of government ensuring that the main disaster risk reduction principles of prevention and mitigation, as set out in the DMA, are incorporated for future disaster risk planning initiatives. KPA 3 thus differentiates between three levels of DRM plans (see Figure 3-1) (RSA 2005:41–42).

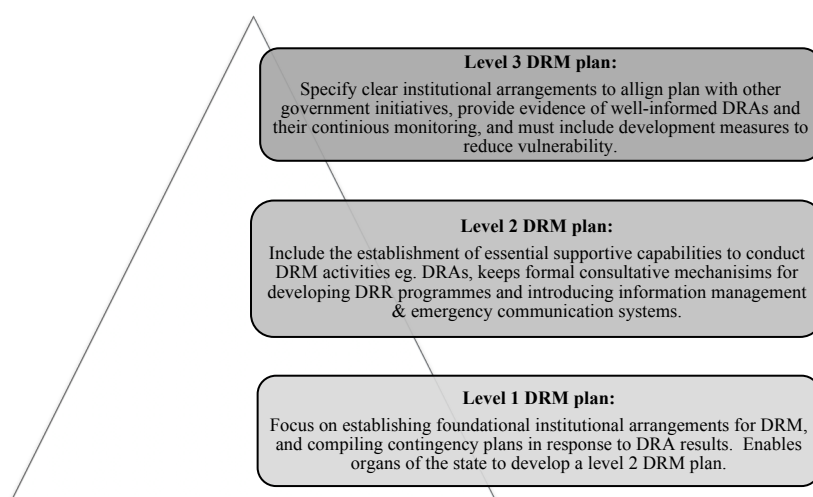


Figure 3-1: KPA 3's levels of DRM planning (adapted from RSA 2005:41–42).

3.3.3 Disaster Management Amendment Act No. 16 of 2015

In 2013 the DMA was reviewed through the Disaster Management Amendment Act No. 16 of 2015 (DMAA) (RSA 2015), to make substitutions and additions to the DMA. Some of the key additions included: the insertion of further definitions to elaborate on the contents of DRM plans, to formally include the functions and requirements of DRAs, and also to clarify the roles of local municipalities in DRM (RSA 2015:2).

Terms newly defined in Section 1 of the DMAA included 'disaster risk reduction', 'mitigation', 'vulnerability' and 'risk assessment'. 'Disaster risk reduction' (DRR) refers to "*a policy goal or objective, and the strategic and instrumental measures employed*" aimed to foresee potential disaster risks, to reduce exposure to hazards and risks, identify vulnerable communities and improving resilience (RSA 2015:4). 'Mitigation' is the lessening of potential impacts of and to vulnerable communities and/or individuals, whereas 'vulnerability' is the condition that increases the susceptibility of communities and individuals to the impact of various risks (RSA 2015:6). 'Risk assessment' is defined as the methodology to "*determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability*" that could potentially pose a threat to harm vulnerable people and their livelihoods on which they depend (RSA 2015:6). It is noteworthy that in the amendment of the Act DRA was still not formally defined, however the inclusion of the definition of 'risk assessment' did insinuate the proposed methodology for DRA.

The needs and requirements for DRA in the DMA were therefore revised and addressed in the promulgation of the DMAA (Sections 11, 14, 15, 20 and 21). This reveals that all levels of government must be compliant with the DMA and DMAA to conduct DRAs for municipal areas, risks need to be identified and mapped and disaster risk management plans need to be developed and implemented (RSA 2015), hence also enforcing KPA 2 and KPA 3 in the NDMF.

3.4 Exploring commonalities

The integration of Environmental Management (EM) and Disaster Management (DM) policies have been explored by Tajima et al. (2014), who found that their integration could be beneficial, however some practical shortcomings were emphasised. Internationally the integration of SIA and DRA has been investigated focusing more on the possible mainstreaming of the two fields, specifically on applied methodology in practice. Becker (1997) stated that SIA in integrated studies requires the SIA community's attention and has discussed how to cope with risks and uncertainty in SIA by comparing SIA and risk assessment project phases. Benson and Twigg

(2007) have provided guidance notes for mainstreaming DRR and SIA as a tool in development planning, whereas Mahmoudi et al. (2013) has investigated the combination of SIA and social risk assessment to introduce a new consolidated integrated framework they named 'Risk and Social Impact Assessment (RSIA)', and found that SIA and risk assessment complement each other and that SIA can be significantly improved thereby. Cottrell and King (2011) in their study on disasters and climate change have found that SIA needed to be mainstreamed into emergency management practices to reduce vulnerabilities and increase community resilience. Other examples include the incorporation of disaster risk into community projects, through the utilisation of SIA — emphasising the benefit of integrating SIA and risk assessment (Usman et al. 2013). The integration of social and environmental factors in risk and impact assessments has been also explored, which suggested four conceptual issues that underpin an integrated approach in development projects for complex and dynamic sociological contexts (Domínguez-Gómez 2016). Finally, Imperiale and Vanclay (2016) have investigated how community resilience can be applied into the social world. Although all these studies have broadly focused on different elements of mainstreaming SIA and DRA, many found that the possible integration thereof might be beneficial in addressing risks and increasing community resilience.

The integration of SIA and DRA in practice and in terms of legislation is a new trend internationally, but has not yet been researched in South Africa. The potential commonalities between SIA and DRA for possible future collaboration are further explored below. A summary of the commonalities in the legislation discussed earlier, and in what respect they are complimentary are demonstrated in Table 3-2 below.

Table 3-2: Summary of legislative commonalities (Own contribution).

<u>Legislation pertaining to SIA</u>	<u>Legislation pertaining to DRA</u>	<u>Commonalities</u>
NEMA: Section 1 (xi); (xvii); (xxix)	DMA: Section 1 DMAA: Section 1 (d); (g); (k); (l).	- No formal definitions of 'social impacts' or 'social'. - SIA exclusion: social impacts implied (biophysical paradigm prominent). - DRA inclusion: human factor at centre of concern (social paradigm prominent).
NEMA: Section 2 (2–4); Section 2 (4)(l); Chapter 5; and Section 23 (a–b)	DMA: Sections 20; 33; 47 DMAA: Sections 11; 14; 15; 20; 21 NDMF: KPA 2; KPA 3	- Shared motives to reduce risk, increase community resilience; promote integrated EM and sustainable development.

3.4.1 SIA exclusion vs. DRA inclusion

SIA has been identified earlier as the process to assess the potential impacts of proposed interventions. Risk Assessment is referred to as the process of identifying and analysing potential risks and hazards which might have a potential impact (positive or negative) on vulnerable communities and their livelihoods, and to ensure more sustainable and resilient communities (UNISDR, 2009). In comparing these definitions, it is evident that the purpose of both SIA and DRA is to reduce risks and vulnerabilities and achieve sustainable development. Earlier three definitions have been highlighted in Section 1 of the NEMA, i.e. (xi) environment, (xvii) hazard and (xxix) sustainable development (RSA 1998a). The NEMA further indicates that sustainable development requires the integration of social, economic and environmental factors (RSA 1998a:2). Section 1 of the DMA provides the definition of a 'disaster' (RSA 2002a), while Section 1 of the DMAA added the definitions of (d) disaster risk reduction, (g) mitigation, (k) risk assessment and (l) vulnerability (RSA 2015). An evident commonality is that neither NEMA, or the DMA and DMAA provide a definition of the term 'social' or 'social impacts'. Thereby, in all statutory provisions descriptive details on what constitutes 'social' or 'social impacts' are excluded from the Acts. However, in the 2017 amendments to the NEMA, the definition of 'significant impact' has been added to the Act and referred to as any impact that might hold a notable effect *"on one or more aspects of the environment"* (RSA 2017). It can therefore be argued that the term 'social impacts' is implied firstly in the broad definition of the 'environment' as provided for in the NEMA and secondly by its inclusion in the definition of 'significant impact'. The DMA and DMAA also refer to the social and/or human factor within many of the definitions included in these two Acts. Words like 'communities', 'individuals', 'people' and 'livelihoods' have been extensively included throughout the Acts, hence placing humans and their rights to a protected environment as provided for in the Bill of Rights (RSA 1996) at the forefront of disaster management in South Africa.

The Environment Conservation Act, No. 73 of 1989 (ECA) has provided a very broad, albeit inclusive definition of the environment (RSA 1989). In 2006, with the promulgation of the NEMA, people were given a more prominent role, focusing on their interrelationship with the environment. However, the 'environment' is still defined broadly. In the absence of the term 'social' in the NEMA, the 'environment' is defined as the environment within which humans exist consisting of *"(iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being"* (RSA 1998a:8). This broad definition, as included in the NEMA where reasoned earlier in this paper, is also relevant here.

The NEMA further provides for environmental governance, including details pertaining to the national environmental management principles, the establishment of institutions, the procedures

for co-operative governance and provisions for fair decision-making and integrated environmental management. Although social impacts have been included in the Act, albeit on a limited scale, the inclusion of the biophysical paradigm in the Acts still prevails. Additionally, nowhere in the NEMA explicit legislative provisions have been made for SIA as a specialist report within EIA, except for the inclusion of the human factor in the definition of the environment and the limited mention of social impacts in certain sections of the Act. Nor have 'social impacts' been clarified, or a flexible checklist been provided of possible social impacts which could be considered in the EIA process. Therefore, examination of the legislative requirements suggests that compared to the biophysical components, social impacts are to a larger extent excluded from the EIA process. By contrast, analysis of the legislative provisions also showed that with the inclusion of the human factor throughout the DMA, NDMF and the DMAA, the social paradigm in DRA plays a more prominent role.

Du Pisani and Sandham (2006) reason that in a developing country such as South Africa environmental issues and the need for socio-economic development cannot be separated, hence contributing to the justification for integrating SIA and DRA due to their shared purpose as a commonality. Usman et al. (2013) corroborate and suggest that the integration of SIA and DRA will assist in the reduction of disaster risk, and improve community resilience, thereby also contributing to sustainable development for future generations.

3.4.2 Shared motives

In Chapter 1 of the NEMA the principles for National Environmental Management are provided. It is evident from the examination of the NEMA in the sections above that some of the principles relate directly to the field of DRR. Section 2 (2–4) of the NEMA emphasises that development should take place in a sustainable manner, but also that the identified risks of developments should be considered, minimised and mitigated (RSA 1998a:10). Chapter 5 further outlines the objectives of integrated environmental management and Section 23 (a–b) adds that the integration of the principles in Section 2 needs to be promoted. Risks need to be identified, predicted, evaluated and the impact thereof on the environment and socio-economic conditions needs to be determined. Mitigation measures should be identified and the enhancement of benefits promoted (RSA 1998a:34). The analysis of the legislation has revealed that the NEMA has a stronger social focus than the ECA, but a strong biodiversity focus still dominates. This emphasises the need for improved SIA status and practice in the environmental assessment process. Furthermore, Section 2 (4)(l) in the NEMA clearly stipulates that *“there must be intergovernmental coordination and harmonisation of policies, legislation and actions relating to*

the environment” (RSA 1998a:12). This contradicts Schedule 1 and 2 in the NEMA’s list of National Departments which exercise functions which may affect the environment (RSA 1998a:66–68). These lists exclude the National Department of DRM. Although there are commonalities between the two fields, this emphasises their segregation.

Sections 20, 33 and 47 of the DMA and Sections 11, 14, 15, 20 and 21 of the DMAA call for the need of DRA and that risk-avoidance behaviour should be encouraged. For this purpose, KPA 2 and KPA 3 in the NDMF include the statutory provisions pertaining to DRA in South Africa. DRA is therefore enforced through the DMA at all spheres of government in South Africa as provided for in Sections 20, 33 and 47 of the DMA. By contrast, SIA in South Africa is not explicitly legislated in terms of the NEMA, however it is inherent in EIA by means of a specialist report. Guidelines for SIA in South Africa have been developed over the years, learning from international best practice principles (Barbour, 2005; Barbour, 2007; Becker, 1997; Interorganizational Committee on Guidelines and Principles for Social Impact Assessment, 1995; Vanclay *et al.*, 2015). Although these guiding documents are available to SIA practitioners, Hildebrandt and Sandham (2014) have reported on the poor performance of SIA in the EIA process, hence referring to SIA as the ‘lesser sibling’ or ‘orphan’. One of the possible reasons for the poor performance in the quality of SIAs is the lack of flexible methodological guidance and a shortage of skills for conducting SIAs (Kruger & Sandham 2018).

Barrow (2010:293), Hildebrandt (2012:3), and Esteves and Vanclay (2009:140) suggest that SIA should be considered as a mechanism or tool in sustainability issues, and that SIA should be integrated with various disciplines which main motive is to reduce risk, increase community resilience and assist in achieving sustainable development. Aucamp *et al.* (2018) also argue for an integrated approach that recognises the interrelationship between social- and environmental systems. In this paper it is shown that DRA can be considered such a discipline. By collaborating DRA with SIA, the status and practice of SIA within the EIA process in South Africa can be strengthened by providing more efficient guidance on risk reduction, hence contributing to the resilience of vulnerable communities and individuals, and encouraging sustainable development initiatives in South Africa.

3.5 Conclusion

Internationally, the neglected status of SIA has been well investigated, demonstrating that the biophysical paradigm still prevails over the social paradigm in the environmental assessment process. South Africa shares a similar EIA-bound scenario. Additionally, poor inclusion of SIAs in

legislative frameworks and the lack of unique guidelines for South Africa's social context were emphasised. Moreover, the need for improved SIA regulatory frameworks to improve SIAs status and practice in moving toward sustainable development have been highlighted. Due to the transdisciplinary nature of DRM the integration of DRM, EM and sustainable development is encouraged, which is in broad agreement with international trends. The potential value that the integration of SIA and DRA can contribute to SIA practice should therefore be encouraged.

The findings of this paper are divided into two sub-sections for discussion purposes, i.e. SIA exclusion vs DRA inclusion; and Shared motives. The findings have revealed that the overarching purpose of SIA and DRA is to identify and reduce disaster risk that threatens vulnerable communities, whose resilience could be enhanced through the implementation of prevention and mitigation measures. Although SIA and DRA have a shared purpose, nowhere in the acts pertaining to SIA and DRA is the term 'social impacts' clarified. However, it can be argued that 'social impacts' are insinuated by the inclusion of other definitions and different wording in the acts. The NEMA and its mandatory EIA regimes provide a broad definition of the environment by including the human factor. Researchers argue that it is partly due to this reason that SIA evolved as a specialist report, albeit integral to the EIA process in a South African context. It was evident from the examination of the legislative provisions pertaining to SIA that the biophysical paradigm still prevails over the social paradigm, adding to SIAs subsidiary status. By contrast, the social paradigm features prominently in the acts pertaining to DRA and explicitly places people at the forefront of DRR.

SIA in South Africa is not explicitly legislated, but is included as a specialist report in EIA, whereas DRA is explicitly legislated and enforced on all spheres of Government. The findings have further revealed that SIA and DRA do have a shared motive to reduce risk, increase community resilience and contribute to sustainable development for future generations, despite EIA and DRM being separate fields of practice in South Africa. This paper suggests that DRA can be profitably collaborated with SIA and thereby offer opportunities for improved SIA status and practice in South Africa, which could potentially also contribute more effectively to sustainable development in accordance with the SDGs. This is in line with international trends, suggesting the integration of SIA and DRA due to the benefits it can add to addressing risks and impacts on vulnerable communities, community resilience and sustainable development.

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CHAPTER 4: OPTIMIZING SIA: DISCOURSES IN SOUTH AFRICAN SIA AND DRA PRACTICE

ARTICLE MANUSCRIPT 3

Research Objective 3: To investigate the current discourses regarding SIA and DRA in practice.

Published in the South African Geographical Journal (SAGJ) (Annexures C and D).

Abstract

Social Impact Assessment (SIA) is recognised as a valuable component of environmental management, yet it has been neglected internationally as well as in South Africa. Disaster Risk Assessment (DRA), is identified as a complimentary activity to SIA, that due to its shared focus on community wellbeing, has the potential for integration with and enhancement of SIA. The integration of SIA and DRA is a new, but poorly researched trend in South Africa, which is explored in this paper by investigating the current discourses in SIA and DRA practice using questionnaires and interviews with a sample of SIA and DRA experts. Four practical discourses were investigated i.e. specialists' career experience; obstacles to practice; methodological guidance; and integrated assessments. This was followed by a literature study that demonstrated that these discourses echo broad international trends in SIA and DRA practice. The findings suggest that the integration of SIA and DRA should be pursued to optimize SIA for improved practice to increase community resilience and to promote sustainable development outcomes.

Keywords: Social Impact Assessment (SIA); Disaster Risk Assessment (DRA); practical discourses; integration; sustainable development; South Africa.

4.1 Introduction

The quest for sustainable development often has social consequences and holds risks for the environment and for vulnerable communities. The tools best suited to deal with these consequences and risks respectively are Social Impact Assessment (SIA), which refers to "*the process of analysing, monitoring and managing the intended and unintended social consequences ... of planned interventions and any social change process invoked by those interventions*" (IAIA, 2003:5) and Disaster Risk Assessment (DRA), which is identified as a tool to understand and appreciate the nature of risk, communities' vulnerabilities, and to identify measures to reduce the risks to which communities are exposed to (Forbes-Biggs, 2011).

The aim of planned interventions is to enhance community resilience and attain sustainability for the next generation, since a sustainable future is dependent on the balance and interaction between environmental and socio-economic factors. To determine risk and communities' vulnerabilities, "*risk and vulnerability analysis*" is required (Usman et al., 2013:264), where risk is a multidisciplinary term that is often associated with "*the degree to which humans cannot cope with a particular situation*" (Van Niekerk, 2011:9). For this reason, the social contexts of these

risks play a significant role. A better understanding of the interaction between risks and future interventions is crucial in striving towards a sustainable future. Although SIA is not considered as a risk assessment *per se*, it can play a vital role in a better understanding of these interactions to increase community resilience and promote a sustainable future (Usman et al., 2013).

Following the origin of Environmental Impact Assessment (EIA) with the promulgation of the National Environmental Policy Act (NEPA) in the USA in 1969, SIA has evolved as a specialist impact assessment focused on social aspects within the broader context of EIA (Barrow, 2000; Becker, 1997; Burdge, 2002; Vanclay, 2006; Vanclay et al., 2015). In South Africa a similar EIA-bound scenario has developed, where the interrelationship between the environment (biophysical) and people (socio-economic) is fundamental to EIA practice (Aucamp et al., 2011; 2018; Du Pisani & Sandham, 2006; Hildebrandt & Sandham, 2014; Kruger & Sandham, 2018). The position of SIA in South Africa as an integral part of EIA logically follows on the requirements of the National Environmental Management Act (NEMA) of 1998, which regulates the EIA process, provides a broad definition of the 'environment' where people are considered as an integral component of the environment, and clearly states that people must be at the forefront of environmental management (RSA, 1998).

Despite considerable improvements in practice over time, SIA remains somewhat neglected in the environmental assessment process, a situation that persists in a vigorous global SIA discourse (Aucamp & Lombard, 2017; Bowd et al., 2015; Burdge, 2002; 2003; Chadwick, 2002; Du Pisani & Sandham, 2006; Dendena & Corsi, 2015; Esteves et al., 2012; Esteves & Vanclay, 2009; Fisher, 2011; Franks & Vanclay, 2013; Glasson & Heaney, 1993; Hildebrandt & Sandham, 2014; Kruger & Sandham, 2018; Nwapi, 2015; Pope et al., 2013; Sandham et al., 2005; Suopajärvi, 2013; Vanclay, 2006; 2014a; 2015; Vanclay & Esteves, 2011). Despite, or perhaps because of this neglect, SIA has been driven by best practice considerations, in contrast to the minimum compliance drive of EIA (Vanclay, 2014b:12).

The status of SIA in South Africa — as manifested in the quality of SIA reports — was explored by Hildebrandt and Sandham (2014), and the findings have confirmed the world-wide trend of SIA neglect in EIA, caused mainly by a lack of trained and skilled SIA specialists and a lack of flexible methodological guidance, thereby impeding the optimization of SIA in practice. In order to guide optimization of SIA status and practice, the perspectives amongst the SIA practitioner community of the neglected status and practice of SIA, were tested through a two-part (2012 and 2016) (Kruger & Sandham, 2018). Using inductive coding of the practitioner responses (Thomas, 2006), several themes emerged, which can be regarded as embryonic discourses, i.e. SIA in practice, Problems in SIA, Effectiveness of SIA and the Future of SIA. A review and analysis of some of these theoretical discourses is provided by Kruger et al., (2019a: Working paper).

In view of the observed neglected state of SIA practice, and the reasons revealed by the practitioner community, the question arises as to what can be done to address this issue, in the pursuit of optimizing SIA for improved practice, to increase community resilience, and ultimately promote sustainable development outcomes. One potentially useful opportunity is offered by a relatively new emerging international trend, i.e. the integration of SIA with risk assessment to optimize SIA, which has not been investigated in South Africa (Arce-Gomez et al., 2015; Domínguez-Gómez, 2016; Mahmoudi et al., 2013; Usman et al., 2013; Vanclay, 2015). The issue of integration of SIA with EIA was frequently supported throughout the responses (Kruger & Sandham, 2018), suggesting that SIA practitioners will also most likely favour integration with other disciplines. This has prompted the inclusion of a fourth discourse i.e. integrated assessments.

Therefore, the aim of this paper is to investigate current SIA and DRA practical discourses. More specific, the objectives were firstly to conduct a survey amongst the SIA and DRA practitioner community about four current discourses, and secondly to corroborate the extent to which these South African practical discourses echo international SIA and DRA literature.

4.2 Materials and Methods

This study employed a mixed method research approach with inductive and deductive analysis (Cresswell & Clark, 2018:12–13; Ivankova et al., 2007:274–275; Thomas, 2006:238). Firstly, questionnaires and interviews were used to investigate the perspectives of SIA and DRA experts⁸ regarding the current practical discourses in their respective fields.

Using the inductive approach (Thomas, 2006:238), three discourses were formulated from the themes that emerged from the SIA practitioner survey (Kruger & Sandham, 2018), and replicated for the DRA practitioner community. In order to test the emerging trend of SIA/DRA integration, a fourth discourse was added, giving the following four discourses: specialists' experience (D1); hindrances in practice (D2); methodological guidance (D3); and integrated assessments (D4). Following a deductive analysis approach which *“refers to data analyses that set out to test whether data are consistent with prior assumptions, theories, or hypotheses identified or*

⁸ In the questionnaires the term 'practitioner' was utilised, i.e. a person that is actively engaged and skilled in the specified field. However, in the discussion of the methodology and findings the sample groups are referred to as 'experts' or 'specialists', i.e. a person that is knowledgeable in the specified field. The terminology was changed after data collection for it encapsulates the sample group best. The use of the different terminology however, does not affect the validity and the reliability of the data.

constructed by an investigator" (Thomas, 2006:238), the questionnaires have been designed around these pre-defined discourses.

This required two separate structured questionnaires (referred to hereafter as the SIA and DRA questionnaires) for each target group (see Table 4-1). The SIA and DRA questionnaires consisted of 17 and 14 open- and closed-ended questions respectively. Some of the questions have been replicated in the two sets of questionnaires, because they were relevant to both sample populations. Therefore, the questions of both the questionnaires followed a sequential order and are shaped to link to a practical discourse (D1–D4) (see Table 4-1). These questions which are replicated verbatim are given only once, and the unique questions separately.

Two non-probability sampling techniques were used to identify SIA and DRA experts in South Africa, that is: key informant and snowball sampling (Delpont & Fouché, 2011:394–396). A sample of 14 SIA responses and 10 DRA responses was obtained. One-on-one interviews were held face-to-face and over Skype. Additionally, questionnaires have been distributed by email for respondents to self-administer if they indicated their unavailability for an interview. The relatively small sample size was not a limitation to the study, because the data still provide useful perspectives from both sample groups according to the concept of 'replication logic' (Yin, 2003). To ensure unbiased data analysis the 'tacit' and 'formative' theory of Le Compte (2000) was followed, hence ensuring the validity and reliability of the data. For the purpose of data analysis, the SIA and DRA experts' responses were coded, referring to the SIA experts as SIA1 – SIA14, and the DRA experts as DRA1 – DRA10.

Finally, in order to attain the second objective of this study, an analysis of international literature was conducted to corroborate the extent to which the observed practical discourses echo international discourses.

Table 4-1: SIA and DRA questionnaires

Practical Discourse	Target Group	SIA and DRA Questionnaire Questions
D1	SQ1 / DQ1	How long have you been practising as an SIA / DRA practitioner in South Africa?
	SQ2 / DQ2	In what sphere have you practised or gained SIA / DRA experience in South Africa?
	SQ3 / DQ3	What is your highest level of qualification?
	SQ4 / DQ4	Provide the academic field of your qualification, e.g. Environmental Management, Social Sciences, Disaster Risk Management etc.
	SQ5 / DQ5	How much formal training have you had in SIA / DRA?
	SQ6	How much training do you have in Risk Assessment?
	SQ7 / DQ6	How did you learn or gain experience on how to conduct SIAs / DRAs?
D2	DQ7	What is your opinion on how the practise of DRA differs from DRA theory?
	SQ8	According to anecdotal evidence, SIA in practice differs from SIA theory. What is your opinion on how the practice of SIA differs from SIA theory?
	SQ9 / DQ8	What are the hindrances in conducting an SIA / DRA and producing a successful, quality SIA / DRA report?
D3	DQ9	South African DRA practitioners/officials have mainly one guidance document, i.e. "Guideline for Conducting Comprehensive Disaster Risk Assessments" prepared by the Directorate of Policy Development and Regulatory Frameworks. How familiar are you with this guidance document?
	SQ10	South African SIA practitioners have mainly two guidance documents, i.e. "Guidelines for involving Social Assessment Specialists in the EIA process" developed for the Department of Environmental Affairs and Development Planning of the Western Cape Province, and "Guidance for assessing and managing the social impacts of projects" by IAIA. How familiar are you with these two guidance documents?
	DQ10	How valuable is this guidance document in assisting you to produce quality DRA reports?
	SQ11	How valuable are these two guidance documents in assisting you to produce quality SIA reports?
	SQ12 / DQ11	Elaborate on what other forms of guidance you use in producing quality SIA / DRA reports, e.g. examples of other SIA / DRA reports?
	DQ12	What is your opinion regarding the available methodological guidance on how to conduct DRAs?
	SQ13	Baseline Social Surveys should be conducted as part of the Scoping Phase to provide an overview of socio-economic conditions and assist in identifying the potential social benefits and risks. Elaborate on the approach or technique that you use for conducting a Baseline Social Survey.
	DQ13	To what extent can the practice of DRA benefit from this available methodological guidance and techniques?
	SQ14	Previous studies revealed that the quality of SIARs in South Africa is weak. One of the reasons ascribed to this weak performance in the quality of SIA reports is that the practice of SIA in South Africa lacks flexible methodological guidance. What is your opinion regarding the lack of flexible methodological guidance?
D4	DQ14	Internationally academics and researchers are debating the integration of impact assessments, e.g. the integration of DRA with SIA, RA and EIA etc. Debate to what extent the practice of DRA in South Africa can benefit from integrated impact assessment and how?
D3	SQ15	To what extent can the practice of SIA benefit from more flexible methodological guidance as well as improved impact assessment techniques?
	SQ16	Flexible methodological guidance and techniques will contribute to the performance of quality SIARs and thereby contribute to SIA effectiveness?
D4	SQ17	Internationally academics and researchers are debating the integration of impact assessments, e.g. the integration of SIA with EIA, HIA, Risk Assessment etc. Debate to what extent the practice of SIA in South Africa can benefit from integrated impact assessment and how?

4.3 Findings and discussions

The findings and corresponding discussions are structured according to the four practical discourses, followed by the literature discourse analysis. The SIA component of these discourses is followed in each case by the DRA component.

4.3.1 Discourse 1: Specialists' experience

The first discourse (D1) centres on the experts' career path and work experience (Questions SQ1–7 and DQ1–6). The findings reveal the diverse disciplinary backgrounds of the SIA and DRA

specialists, confirming the findings for DRA practitioners by Van Niekerk (2006), and although they have accumulated many years of practical experience, the majority of the SIA specialists are either self-taught or gained experience through mentoring- and internship programmes (see Figure 1a). Since there is very little formal training for SIA specialists, SIA knowledge is largely self-taught, based on formal training in related fields such as Environmental Management (EM) or Social Sciences (Figure 4-1b). With a view to the potential integration of SIA and DRA, SIA respondents revealed an almost complete absence of training in risk assessment (SQ6), about which one of the more experienced SIA specialists (SIA6⁹) expressed concerns regarding young practitioners' inexperience in conducting risk assessments and SIAs.

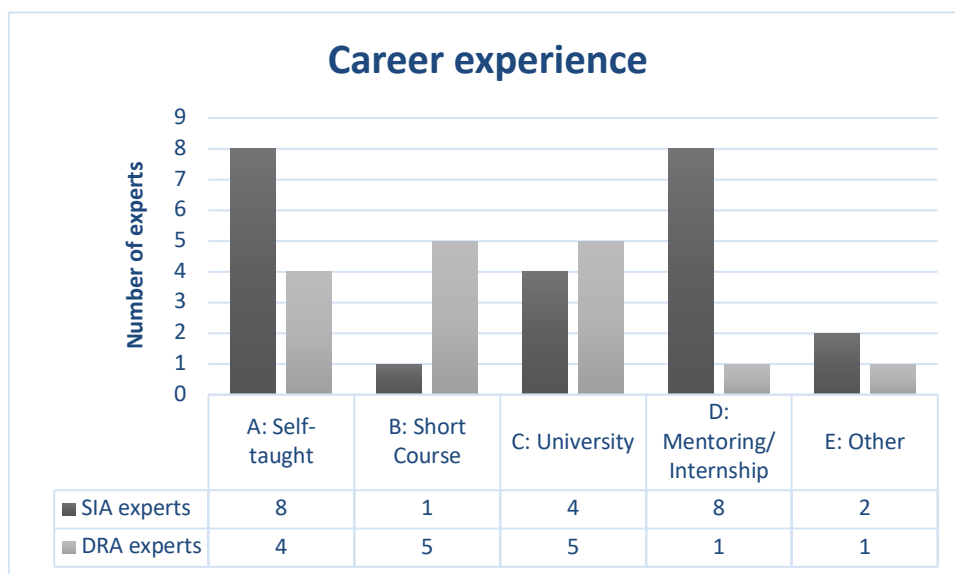


Figure 4-1a: How have you gained experience on how to conduct SIAs/ DRAs? (SQ7; DQ6).

⁹ The code SIA6 refers to SIA respondent number 6; and DRA7 would refer to DRA respondent number 7.

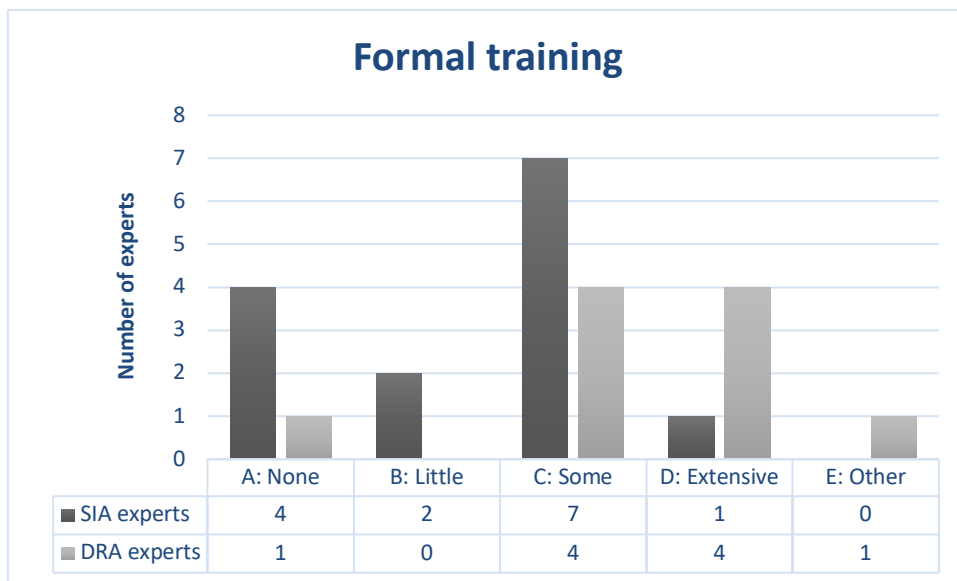


Figure 4-1b: How much formal training have you had? (SQ5; DQ5).

In contrast to SIA, there is more formal training available for DRA experts at various tertiary institutions and training centres in South Africa. Most of the DRA experts have formal training in DRA (Figure 4-1b), with the majority improving their expertise through tertiary institutions or short courses (Figure 4-1a).

In the course of conducting the survey it has become apparent that SIA and DRA specialists work in isolation, partly because of their diverse backgrounds, but also because of the disparate nature of SIA and DRA practice where specialists are seldom in the same official or commercial environment, and therefore SIA and DRA are considered as separate fields of practice. However, these findings suggest that these very differences — backgrounds, expertise and training — offer opportunities for cross-fertilization, and their perspectives and skills can counterbalance each other, but these findings demonstrate that no progress has been made in this regard, which links logically to the fourth discourse on the integration of assessments.

4.3.2 Discourse 2: Hindrances in practice

The second discourse (D2) dealt with experts' perceptions on how the practice of SIA and DRA differs from theory, including their assessment of the obstacles that they experience in practice (Questions SQ8 and 9, and DQ7 and 8). Due to the relatively voluminous responses to these open-ended questions, the SIA part of the discourse is presented first, followed by the DRA part.

SIA responses (SQ8 and 9)

As stated above, sustainability is at the core of SIA (IAIA, 2003). Theoretically, SIA contributes to social development as a result of SIA best practice (Aucamp & Lombard, 2017). However, there seems to be a disconnect SIA theory and practice (Arce-Gomez et al., 2015), which was confirmed by all the SIA specialists who are in broad agreement that SIA practice differs from theory (SQ8), and that SIA theory is simply an ideal to strive towards. One specialist (SIA5) stated that SIA theory has evolved internationally for the benefit of developed countries, therefore the theory does not easily translate to the complex social context of developing countries like South Africa. The theoretical frameworks of SIA “*don’t synergize*” and SIA theory “*is always playing catch-up with practice, instead of dictating the practice of SIA*” (SIA10). It is evident that SIA theory is heavily criticized by the experts: in reality SIA is “*squeezed*” into a limited timeframe with limited budgets (SIA1, 2, 4, 5 & 9–14); instead of being a tool to guide sustainability: in practice SIA is used by project proponents only for compliance or project approval — SIA is then “*just a box-ticking assessment*” proving that the client has complied with requirements (SIA1); SIA theory does not take different stakeholders and variables into account (SIA2 & 3); is “*not culturally sensitive*” (SIA13); is mostly “*based on academic inputs*” (SIA14); and it does not make provision for the expectations of the client, hence in practice clients do not always comprehend that social science research takes time and is costly. Partly for this reason, SIA practice is not always viewed as “*equally important and relevant as other specialist studies*” (SIA11). These findings confirmed that SIA practice is not a straight-forward assessment exercise, and social issues are not easily measured.

A broad consensus was evident regarding the hindrances that SIA specialists experience in conducting SIAs and successfully producing quality reports (SQ9), with particular emphasis on time and budget constraints. Other restrictions included the understanding and expectancy of the client (SIA1 & 2, 5 & 6, 9, 12 & 14) — clients only conduct SIAs for compliance and “*to get authorization*” (SIA2) (echoing the disconnection between theory and practice); skills shortage — young SIA specialists entering practice do not always have the skills and the experience to conduct comprehensive SIAs (SIA4 & 6); there is no professional body to set standards and to determine quality control (SIA6 & 10); increased vulnerabilities of communities (SIA1 & 4); safety of practitioners during fieldwork (SIA3 & 8); language barriers (SIA1 & 3); political influences (SIA1); unethical behaviour (bribing) from clients and practitioners (SIA1); confusing SIA with socio-economic assessment (SIA7); lack of scope (SIA7 & 10); limited availability of information (SIA11); and absence of South African legislation stipulating the minimum requirements for SIA (SIA13).

The responses to SQ8 and 9 resemble those of Aucamp and Lombard (2017), and Kruger and Sandham (2018) — demonstrating that the same issues persist despite some improvements in practice.

DRA responses (DQ7 and 8)

In contrast to the SIA experts, most of the DRA experts have indicated an alignment between DRA theory and practice (DQ7). The theoretical guidelines are clear, very descriptive, to the point, and serve as a guide for the practice of DRA (DRA1, 6 & 7). “*DRA theory is useful however not sufficient enough to declare oneself an expert in DRA*” (DRA7). Additionally, DRA theory was critiqued by stating the realities in practice: one of the misalignments is that some DRAs are “*scientific*”, whereas others focus only on “*community-based risk assessment*” — in practice they should coincide (DRA2); legislation enforces government to conduct disaster risk management plans, constituting the need for DRA, yet, “*in practice not all municipalities adhere to this legislative requirement*” (DRA1); legislation provides clear guidance, but in some instances consultancy firms do not follow these guidelines, thereby contributing to different quality DRA reports that are often “*very technical*” (DRA6); the availability and completeness of data are problematic; increased pressure on DRA experts to adjust the outcomes of DRA reports to meet stakeholder expectations (DRA8); and unrealistic community expectations (DRA9). The view of DRA10 is that “*not everything is taught in theory*”. The respondents’ elaborations on the alignment between theory and practice suggested a contradiction with the initial view of good alignment between theory and practice of DRA. This is an interesting dichotomy worthy of further investigation.

The DRA experts had consensus on the two main hindrances that they perceive in practice (DQ8), namely: the availability and accessibility of data (municipalities do not always prioritise DRAs and disaster management plans) (DRA1, 3 & 5–8), and the lack of knowledge and skills to conduct DRAs (DRA1 & 3–7). DRA experts situated in South African government departments are constantly changing, therefore those responsible for compiling DRAs continuously rotate (DRA1). Other obstacles include: failure to register at the professional body (Disaster Management Institute of Southern Africa (DMISA)) (DRA1); cooperative governance — “*not necessarily unwillingness*”, but rather failing to understand what is expected of government departments (DRA1); constrained budgets (DRA2 & 3); “*GIS competency*” (DRA4); “*lack of standardised structure*” and integrated disaster management central databases (DRA6); “*poor interdepartmental engagements*” — “*working in silos*” (DRA7); and political influences (DRA8).

Some of these shortcomings resemble those of Van Riet (2009), and Vermaak and Van Niekerk (2004), confirming that these shortcomings persist in South African DRA practice.

The findings of this discourse demonstrated a broad consensus regarding the discrepancies between theory and practice, as well as the perceived practical hindrances, further echoing that this is a prevailing discourse in South African SIA and DRA practice.

4.3.3 Discourse 3: Methodological guidance

The third discourse (D3) centres on the methodological guidance for SIA and DRA, respectively (Questions SQ10–16 and DQ9–13). As above, the SIA findings are given first, followed by the DRA findings.

SIA in South Africa is not explicitly legislated (Kruger et al., 2020), however it is guided by two documents, i.e.: the ‘Guideline for involving Social Assessment Specialists in the EIA process’ developed for the Department of Environmental Affairs and Development Planning of the Western Cape Province (Barbour, 2007); and the international ‘Guidance for assessing and managing the social impacts of projects’ by IAIA (Vanclay et al., 2015). One specialist (SIA1) stated that SIAs cannot be conducted “*without the foreknowledge of the content of the theory*” contained in these guidance documents. All the SIA specialists demonstrated that they are familiar with these available guidelines (SQ10) (Figure 4-2a). It covers the basics of SIA to verify if specialists are “*in-line with international best practice*” (SIA2). Furthermore, the guidelines were demonstrated to be valuable to SIA specialists (SQ11) (Figure 4-2b), however it should not be used as an “*ABC list of how to do SIAs*” — it is “*difficult to breach this guidance to practice*” (SIA10). To assist specialists in overcoming this gap, the use of additional guidance was emphasised (SQ12), namely: other examples of similar SIA reports (local and international); international standards (International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability, World Bank and European Investment Bank (EIB) guidance notes); academic research (journal articles and books); the terms of reference (ToR) provided by clients; and prescribed company formats (SIA1–5 & 7–14).

In contrast to SIA, DRA in South Africa has one principal guidance document for DRA experts, namely: the ‘Guidance for Conducting Comprehensive Disaster Risk Assessments’ prepared for the Directorate of Policy Development and Regulatory Frameworks (NDMC, 2016). Most of the DRA experts indicated their familiarity with this guidance document (DQ9) (Figure 4-2a), adding that it is of moderate value to them (DQ10) (Figure 4-2b). One of the DRA experts (DRA3) indicated that this methodological guidance document was “*designed to establish a national*

baseline” to assist organs of the state to conduct comprehensive DRAs. However, similar to the SIA responses, the DRA specialists also said that they make use of other forms of guidance to produce quality DRA reports (DQ11), including: Local and international examples of DRA reports; key performance area 2 (KPA2) in the National Disaster Management Framework (NDMF) (DRA4, 7 & 10); international methodological guidance documents from the National Oceanic and Atmospheric Administration (NOAA) and the Federal Emergency Management Agency (FEMA) (DRA4 & 8); Geographic Information Systems (GIS) and specialist input (DRA6); International Standards Organization (ISO) risk assessment standards, Community-Based Disaster Risk Management (CBDRM) and Public Participation (PP) GIS methodology (DRA8); and academic research (journal articles) on DRA best practice (DRA2, 6 & 8).

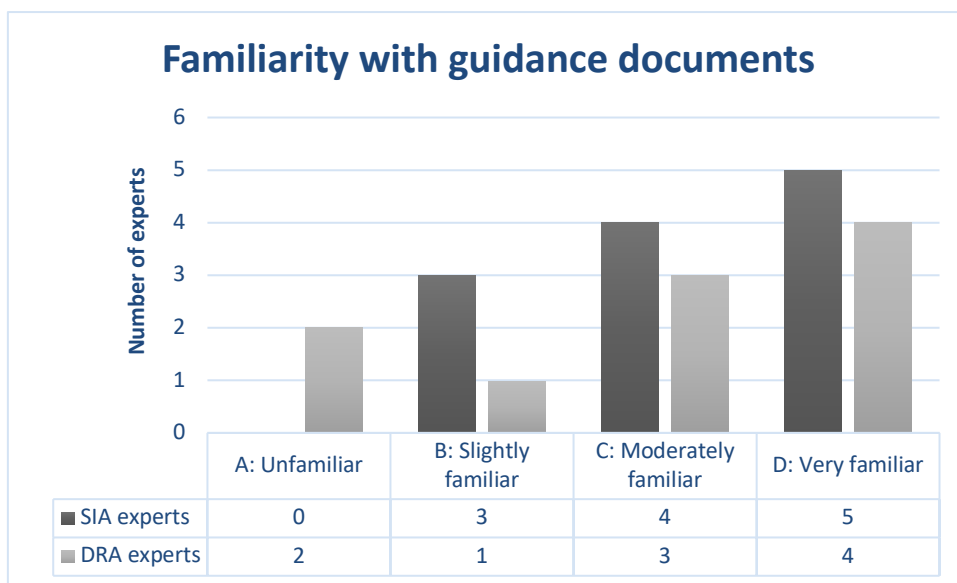


Figure 4-2a: How familiar are you with the guidance documents for SIA and DRA, respectively? (SQ10; DQ9).

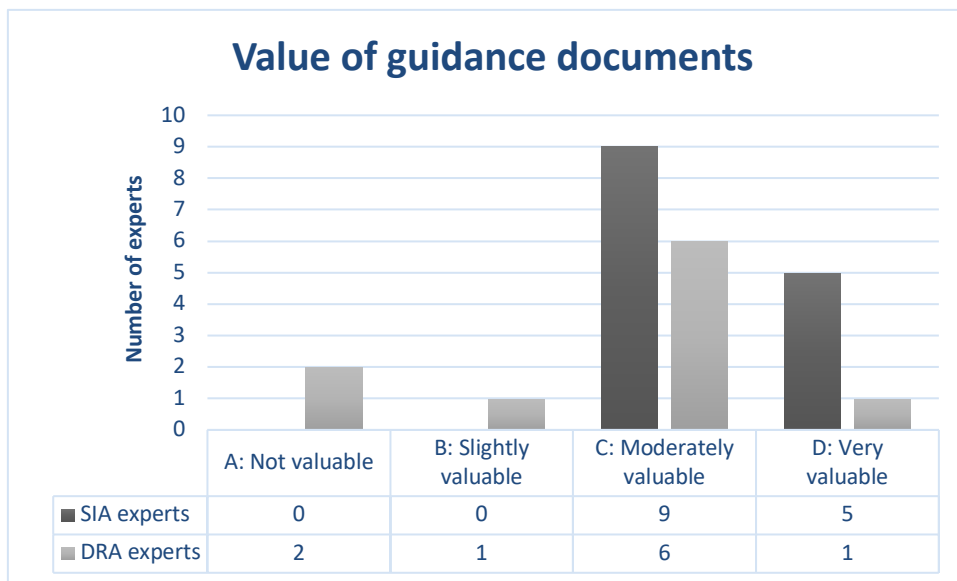


Figure 4-2b: How valuable are the SIA/ DRA guidance documents in assisting you to produce quality reports? (SQ11; DQ10).

The available methodological guidance for SIA — as stated above — indicated that ‘social baseline surveys’ should be conducted during the scoping phase of project cycles to provide an overview of the socio-economic conditions and to assist in identifying potential social benefits and risks (Barbour, 2007; Vanclay et al., 2015). However, explicit guidelines for social baseline surveys are lacking. The SIA specialists all stated that they mainly conduct desktop studies to determine the demographics of the impacted areas of proposed developments (SQ13), which includes: data collection from StatsSA; Integrated Development Plans (IDPs); local economic development plans; previous studies in the affected area; aerial photos and maps; and community surveys (depending on the type of project, available time and budget). Through conducting the survey it became apparent that risk assessment was not a tool that has formed part of their social baseline surveys.

The lack of flexible methodological guidance stated earlier (Hildebrandt & Sandham, 2014) links with the perception amongst most of the SIA specialists that the concept of a ‘flexible methodological guidance’ is a conundrum (SQ14) — on the one side due to our country’s complex social systems a need for more flexible methodological guidance is apparent, whereas on the other side more rigorous methodological guidance was identified to be valuable for inexperienced practitioners. Many SIA reports are conducted by specialists that are not social scientists, and are not familiar with the SIA methodologies nor have an understanding for social sciences. Therefore, the South African environmental assessment community perceives that ‘anyone can conduct

SIAs', which is also evident in the quality of SIA reports. The findings from the survey emphasised that the methodological guidance must be strengthened and accompanied by training at tertiary level as well as mentoring from experienced specialists. Most of the SIA specialists stated that South Africa's SIA practice can benefit extensively from flexible guidance and improved assessment techniques (SQ15) (Figure 4-2c), thereby contributing to an improvement in the quality of SIA reports and the effectiveness of SIAs (SQ16). The findings further echoed that the key for complex social systems is a balance between a flexible, yet rigorous framework, as is the need for more regulation and consistency in reporting. One of the SIA specialists (SIA1) added that "*working in silos*" will hinder growth in SIA practice. More structure in SIA will provide more credibility to SIA in the EIA process (SIA4). It was further highlighted that the benefit of methodological guidance is if it helps in "*convincing clients of the value of undertaking SIAs that go beyond the minimum legislative requirements*", and to provide guidance on how quality SIAs might be produced with limited time and budgets (SIA9). One of the SIA experts recommended that the "*inputs from other disciplines may prove worthwhile, but would need to be explored*" (SIA8).

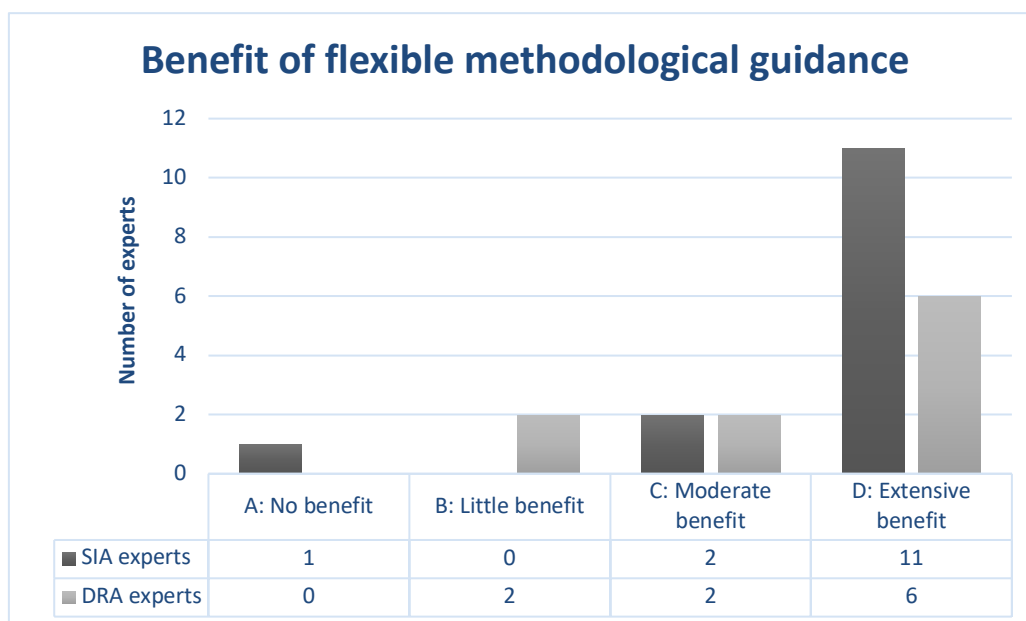


Figure 4-2c: To what extent can the practice of SIA/ DRA benefit from more flexible methodological guidance and techniques? (SQ15; DQ13).

In contrast to the SIA responses, there was a split in the perceptions from the DRA experts regarding the available methodological guidance for DRA in South Africa (DQ12). The available DRA methodological guidance is "*comprehensive enough*", a "*simple and straightforward*" guideline that will capacitate DRA experts and effectively reduce costs (DRA1); it "*produces the*

desired outcomes” providing a true reflection of risks in a given area (DRA9); and it *“helps to standardise DRA”* in South Africa (DRA5). On the contrary, it was also demonstrated to be *“a good guideline but local conditions and available resources must be taken into account”* (DRA6); it’s too *“one-dimensional”* leaving little room for innovation (DRA2); not dynamic (DRA4); and it does not adequately cover vulnerabilities and capacities (DRA8). Despite the divided views (DQ12), most of the DRA experts stated that DRA practice can benefit extensively from strengthened methodological guidance and techniques (DQ13) (Figure 4-2c). Some experts added that it will *“assist in the training”* of DRA experts and *“enhance governments’ capacity”* (DRA1); *“it will empower practitioners”* (DRA5); and ensure that results and outcomes are met in a standardised manner (DRA6). However, political influences and the competency of DRA government officials are the biggest ‘hurdles’ to overcome, and experts need to be more proactive rather than reactive towards risk reduction (DRA2, 7 & 9). Ultimately, *“the difficulty is in establishing a mutually agreed standard that will stand the test of time”* (DRA3).

The overall responses to the third discourse (D3) resemble those of Aucamp and Lombard (2017), Kruger and Sandham (2018), Van Riet (2009), and Vermaak and Van Niekerk (2004) — emphasising the persistence of this practical discourse. It further demonstrates that the specialists are open to exploring the methodologies from other fields, however rigorous guidance for social baseline surveys is still lacking, and thereby such baseline are often neglected and perceived as a ‘shallow analysis’ (Schirmer, 2011). The contribution of risk assessment in this regard is worthy of further investigation. As with the previous discourse, there appears to be a willingness amongst both SIA and DRA specialists to look beyond disciplinary borders, which links coherently to the fourth discourse on integrated assessments.

4.3.4 Discourse 4: Integrated assessments

The fourth discourse (D4) investigated the SIA and DRA experts’ perceptions on the extent that SIA and DRA practice respectively can benefit from integrated assessments (SQ17; DQ14). As above, the SIA part of this discourse is presented first, followed by the DRA part.

SIA responses (SQ17)

The integration of impact assessments, like SIA and DRA, was unanimously supported by all the SIA specialists (SQ17), emphasising the benefit of a more comprehensive, holistic approach: *“We are complex social creatures in complex social environments”* (SIA2); we do impact assessments

to “*improve human-wellbeing*” and to increase community resilience (SIA5); “*silo-based approaches*” should be avoided (SIA2); “*in terms of methodologies of other fields*” like DRA, “*it might be beneficial to integrate*” SIA and DRA (SIA1); and “*there are things that you can give and take from both sides, you can learn from the one*” and cross-fertilize different fields of impact assessment (SIA2). The respondents included the potential downfalls of integrated assessments as: a lack of understanding of the importance of interdisciplinary integration by environmental assessment practitioners (EAPs) (SIA2, 6, 9 & 11); a costly and tedious approach (SIA6 & 8); and overlooking “*detailed issues*” (SIA8). However, there also seemed to be perceived advantages of integrated assessments which included: that the core issues would be brought to the surface (SIA8); it would ensure that important impacts are not left out (SIA8); and would allow for faster decision making (SIA8). One of the SIA specialists (SIA10) stated that the importance of integrating assessments is that specialists are not expected to be “*Jacks of all trade*”, but they should rather be open to working in an interdisciplinary team, to learn and adopt the methodologies and techniques of other impact assessments to provide the practice of SIA with more credibility. The findings revealed that there is perceived value for SIA to be incorporated with DRA (and other impact assessments), however there is still a long way to go for the true integration of impact assessments in South Africa (SIA10).

DRA responses (DQ14)

Similar to the SIA findings above, unanimous support was given by all the DRA experts for the integration of DRA with other impact assessment fields (DQ14). The key to truly reduce risk is through a “*multi-disciplinary approach that (would) cross all the sectoral boundaries*” (DRA2). Only one limitation was identified by one of the DRA experts (DRA7), i.e. that there will be too much “*sectoral claiming*”. This correlates with the silo-based responses from the SIA experts discussed earlier. Once this obstacle is addressed, the practice of DRA in South Africa can be “*fast tracked*” and would be taken more seriously in the impact assessment field (DRA7). However, the perceived advantages of integrated assessments emphasised during the survey seemed to outweigh the disadvantages: gaining of additional knowledge from different sectors (DRA1, 6 & 10); a more holistic approach in addressing impacts (DRA6); creating certainty and credibility (DRA3 & 7); it “*may give rise to the domino effect*” (DRA6); ensure effective stakeholder participation (DRA6); “*duplication of efforts are eliminated*” (DRA7); “*eliminate corruption*” (DRA7); and assist specialists to learn from each other in best practice and to promote the ultimate goal of sustainable development (DRA7 & 10).

The findings suggest that both specialist communities support the potential integration of SIA and DRA, and they are more aware of the benefits, despite some foreseeable shortcomings. Moving from the observed practical discourses to the international sphere, integrated assessments have been under the magnifying glass and are attracting increasing debate in the practice of environmental assessment globally, but in the South African context, the integration of SIA and DRA has not been reported on, until now. Therefore, the next section turns to an analysis of practical discourses in the global context.

4.4 International practical discourses

A literature review was conducted to confirm the extent to which the four practical discourses reflected international discourses.

4.4.1 Specialists' expertise (Discourse 1)

The lack of expertise and the quality of SIA specialists have been widely investigated as possible reasons for poor SIA performance (Aucamp, 2015; Barrow, 2010; Bezuidenhout, 2009; Bowd et al., 2015; Dendena & Corsi, 2015; Du Pisani & Sandham, 2006; Esteves et al., 2012; Nwapi, 2015; Wong & Ho, 2015). The capabilities and competencies of social scientists influence the effectiveness of SIAs (Barrow, 2000; Wong & Ho, 2015), and globally, the number of SIA specialists has grown steadily, and training opportunities are offered frequently and widely (Becker, 2001). However, since SIA is considered as a transdisciplinary social science (Esteves et al., 2012; Wong & Ho, 2015), its specialists come from various disciplines, ranging from "*academic scientists*" to "*political activists*" (Freudenburg, 1986). In some cases, this may hamper the effectiveness and best practice considerations of SIA, by failing to identify social risks and assessing impacts (Dendena & Corsi, 2015). This threat to effectiveness was revealed in a review of SIA report quality in South Africa, under the first two EIA regimes (ECA and NEMA) (Hildebrandt & Sandham, 2014), which showed a modest improvement in report quality, but weakness in the identification and assessment of impacts and alternatives, due most likely to a shortage of skill of SIA specialists, and the dominance of practitioners with a bio-physical background (Kruger & Sandham, 2018).

Compared to the SIA discourse, literature on DRA specialists' expertise is sparse. Only Van Niekerk (2006) reported on this discourse for South Africa and found that the key role-players involved in DRM in South Africa come from various sectors and disciplines including: government

and the private sector; NGOs; consultancies; research institutions; and institutions of higher learning. Nevertheless, silo-based approaches towards effective disaster risk reduction (DRR) should be avoided, and increased integration and coordination should be encouraged for effective and holistic DRR (Van Niekerk, 2006).

Because of the diverse backgrounds of both the SIA and DRA specialist community, the SIA expert community has a great deal to offer in terms of risk assessment because they are familiar with social and cultural variables and tend to see the larger context within which developments occur (Freudenburg, 1984). It appears therefore that the practical discourse on specialist knowledge is echoed in the international literature for SIA and DRA and emphasises potential opportunities for integration, and sharing of knowledge and skills, thereby, providing more holistic assessments and optimizing SIA and DRA practice. As with the practical discourse, the international discourse links logically to the fourth discourse on integration of assessments.

4.4.2 Hindrances in practice (Discourse 2)

Globally the impediments to SIA and DRA practice have been comprehensively reported, demonstrating the persistence of large gaps between the theory and practice for both SIA and DRA. The hindrances in SIA practice globally include:

- Lack of trained and experienced SIA specialists (Barrow, 2000; Baines & Taylor, 2011; Dendena & Corsi, 2015; Esteves & Vanclay, 2009; Kemp, 2011; Wong & Ho, 2015);
- Failure to deal with diverse social contexts and the inclusion of indigenous knowledge (Arce-Gomez et al., 2015; Esteves & Vanclay, 2009; O’Faircheallaigh, 2009);
- Lack of flexible methodology and assessment techniques (Arce-Gomez et al., 2015; Barrow, 2000; Finsterbusch, 1995; Mahmoudi et al., 2013); and that
- SIA is a political driven process (Esteves & Vanclay, 2009; Finsterbusch, 1995).

Additionally, no consensus is reached on whether SIA should be regulated or not — some support SIA not being a prescriptive process (Arce-Gomez et al., 2015; Finsterbusch, 1995), whereas others favour a normative framework (Barrow, 2000; Nwapi, 2015; Terrapon-Pfaff et al., 2017). However, the existence of prescriptive requirements does not necessarily constitute good practice (Kemp, 2011).

Attempting to strengthen the shortfalls of SIA caused by these hindrances, researchers argue for the integration of SIA and social risk assessment, which is a new trend (Domínguez-Gómez,

2016; Mahmoudi et al., 2013; Usman et al., 2013), and which contributed to the investigation of the fourth practical discourse of this study.

In contrast to SIA, DRA practice is poorly articulated in literature. Some shortcomings of DRA have been investigated, albeit only for South Africa (Van Riet, 2009; Vermaak & Van Niekerk, 2004). DRA's practice will always be "*vulnerable to critiques based on issues of reliability, validity and all round 'scientific rigour'*" (Van Riet, 2009), but despite these practical hindrances, the search for efforts to strengthen best practice for DRA's vital contribution to developmental initiatives continues.

Critics should not be over critical of SIA, because it strives to predict social change and achieve sustainability, which is difficult to achieve (Barrow, 2000). Therefore, going forward SIA specialists should acknowledge these challenges and continue engaging in best practice SIA in the pursuit of social sustainability (Aucamp et al., 2011; Kemp 2011), which is where DRA can also make valuable contributions, yet another link to the issue of integrated assessments.

4.4.3 Methodological guidance (Discourse 3)

Globally methodological guidance persists as one of the biggest discourses in the field of SIA and DRA. However, both fields' methodological guidance documents have been questioned regarding their effectiveness, accuracy, uniformity and articulation in practice. Critiques of SIA's methodological guidance include: lack of flexibility; overlooking softer, yet complex, social issues; failure to deal with unique social contexts; lack of scientific rigour and multi-stakeholder involvement; failure to address human rights; failure to conduct quality analysis; and a lack of normativity (Arce-Gomez et al., 2015; Aucamp & Lombard, 2017; Becker et al., 2003; Bezuidenhout, 2009; Du Pisani & Sandham, 2006; Esteves et al., 2012; 2017; Esteves & Vanclay, 2009; Finsterbusch, 1995; Hildebrandt & Sandham, 2014; Kruger & Sandham, 2018; Nwapi, 2015; Terrapon-Pfaff et al., 2017). Moreover, a clear framework is needed, balancing a flexible, yet standardised methodological guidance (Du Pisani & Sandham, 2006; Hildebrandt & Sandham, 2014; Kruger & Sandham, 2018; Nwapi, 2015; Terrapon-Pfaff et al., 2017).

The methodological guidance for DRA also did not escaped critique, i.e.: comprehensive guidance is still absent to sparse (Vermaak & Van Niekerk, 2004); it is not dynamic; it is overly technical and too quantitative; there is poor integration of hazard-, vulnerability- and capacity analysis; and a lack of scientific and methodological rigour (Gall et al., 2015; Reddy, 2010; Van Riet, 2009). Therefore, researchers call for a more integrated DRA methodological approach (Reddy, 2010).

To overcome the methodological challenges of both fields, researchers started exploring their integration in the pursuit of optimizing practice (Domínguez-Gómez, 2016; Mahmoudi et al., 2013; Usman et al., 2013). Integrated research on disaster risk can be either or all of multi-, inter- or transdisciplinary, i.e. the collaboration of different disciplines and stakeholders in the co-production of impact assessment. However, to promote integrated research the “*science-into-practice*” obstacles need to be surpassed (Gall et al., 2015). Moreover, the merits of a combined, integrated methodological guidance should not be overlooked, leading coherently to the fourth discourse on integrated assessments.

4.4.4 Integrated Assessments (Discourse 4)

Since the enactment of NEPA there has been increased interest in the field of SIA, including “*integrated forms of assessment*” (Baines & Taylor, 2011). SIA is considered an important component of integrated environmental management, and has a critical role to play in the drive for sustainable development (Barrow, 2000). The global debate on integrated impact assessments persists for the optimization of SIA practice (Barrow, 2000; Becker, 1997; Bowd et al., 2015; Cottrell & King, 2011; Dendena & Corsi, 2015; Esteves et al., 2017; Esteves & Barclay, 2011; Kidd et al., 2018; Morrison-Saunders et al., 2014; Slootweg et al., 2001; Vanclay, 2014a; 2015). Additionally, the need for the integration of SIA with risk assessment, in the context of DRM, was noted as early as 1984 (Freudenburg, 1984). DRA is emphasised as a discipline that could potentially be integrated with SIA in the pursuit of sustainable development, and thereby optimize SIA practice (Barrow, 2000; Becker, 1997; Cottrell & King, 2011; Domínguez-Gómez, 2016; Durning, 2014; Gore & Fischer, 2014; Imperiale & Vanclay, 2016; Mahmoudi et al., 2013; Usman et al., 2013).

These international debates corroborate the findings of the fourth practical discourse analysis above, and while this is a new trend, the potential contribution of the integration of DRA with SIA to optimize SIA practice is confirmed.

4.5. Conclusion

For a long time, the relationship between SIA and other impact assessment fields like DRA, has been vague, which prompted this investigation. Therefore, the purpose of this paper was to investigate the discourses in SIA and DRA practice to optimize practice and achieve sustainable development — an exercise not yet reported on in South African literature. The findings confirmed

four practical discourses which resonate with international trends, i.e. (i) specialists' expertise; (ii) hindrances in practice; (iii) methodological guidance; and (iv) integrated assessments. Various observed shortcomings in the practice of SIA and DRA are not unique to South Africa, but are indeed features of international discourses. Furthermore, the findings disclosed that there is a need for rigorous methodological guidance coupled with formal training, for consistency in reporting and improved report quality. The lack of guidance for social baseline surveys was confirmed. The specialists are generally open to potential cross-fertilization of SIA and DRA and the opportunities it would bring to improved SIA practice. Early work investigated the integration of hazard and disaster risk into the SIA process (Usman et al., 2013), as well as the potential of a combined SIA and DRA framework (Mahmoudi et al., 2013). A first methodological comparison has been done in South Africa (Kruger et al., 2019b: Working Paper), but it requires further investigation. Moreover, to enhance the benefits of integration, specialists should avoid working in silos and encourage the integration of their skills, knowledge and experience, and they should strive continually for best practice to increase community resilience and seek the means whereby social sustainable development outcomes are met. Integration and collaboration is therefore essential to optimize SIA practice, in the quest to optimize SIA for improved practice, which in turn can contribute to increased community resilience with the ultimate goal of promoting sustainable development outcomes.

While these four practical discourses were investigated amongst the South African practitioner communities, the strong corroboration from the international literature discourses suggests that these results are most likely relevant to all countries where SIA and DRA are practiced, and particularly in developing countries where disaster risks pose the greatest threats to vulnerable communities.

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CHAPTER 5: TOWARDS INTEGRATED SOCIAL AND DISASTER RISK ASSESSMENT: A SOUTH AFRICAN METHODOLOGICAL COMPARISON

ARTICLE MANUSCRIPT 4

Research Objective 4: To investigate the similarities and gaps between SIA and DRA methodology.

Research Objective 5: To investigate the contribution of DRA to improved SIA methodology to guide good practice SIA in South Africa.

Abstract

The effectiveness and quality of Social Impact Assessments (SIAs) have long been topics of investigation, with specific focus on the methodological guidance. Integrated impact assessments have been explored to improve SIAs' articulation in practice, whereas Disaster Risk Assessment (DRA) has been identified to potentially be integrated with SIA. This paper aims to investigate the commonalities and differences of SIA and DRA methodological guidance in South Africa; to determine their potential contribution to guide good practice, which has not yet been reported in South Africa or elsewhere. A qualitative research approach has been employed, following a document review to investigate the current SIA and DRA methodological guidance in South Africa. A content analysis has revealed that South African SIA guidance documents lack rigorous methodology for Social Baseline Surveys, and DRA has proven to potentially contribute to an improved SIA in this regard. Although SIA and DRA practice still has a long way to go toward social sustainability, this paper proposes that integrated social and disaster risk assessment should be explored for future best practice to address SIA's effectiveness and quality. This would also provide improved guidance for inexperienced SIA professionals in their pursuit towards best practice.

Keywords: Social Impact Assessment (SIA); Disaster Risk Assessment (DRA); methodological guidance; integration; sustainable development; South Africa.

5.1 Introduction

A sustainable future is dependent on the interaction and balance between the dimensions of the socio-economic and biophysical environment. The main purpose of a Social Impact Assessment (SIA) is to bring about a more sustainable human environment where the biophysical and social dimensions are considered equal. The International Principles for SIA define it as a process of “*analysing, monitoring and managing the intended and unintended social consequences*” — whether positive or negative — “*of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions*” (IAIA, 2003:5).

Previous studies have investigated the quality of SIA reports, referring to its subsidiary or neglected status in the broader thrust of Environmental Management (EM) (Aucamp & Lombard, 2017; Bowd *et al.*, 2015; Burdge, 2002; 2003; Chadwick, 2002; Dendena & Corsi, 2015; Du Pisani & Sandham, 2006; Esteves *et al.*, 2012; Fisher, 2011; Glasson & Heaney, 1993; Hildebrandt &

Sandham, 2014; Kruger & Sandham, 2018; Nwapi, 2015; Sandham *et al.*, 2005; Suopajärvi, 2013). A lack of flexible methodological guidance has been identified globally as one of the contributing causes of SIA's subordinate status. In an endeavour to improve the quality of SIA reports and in the pursuit of sustainable development, researchers have investigated the methodology of SIA, broadly criticising its lack of flexibility, scientific rigour and effectiveness (Arce-Gomez *et al.*, 2015; Aucamp & Lombard, 2017; Becker *et al.*, 2003; Bezuidenhout, 2009; Du Pisani & Sandham, 2006; Esteves *et al.*, 2012; 2017; Esteves & Vanclay, 2009; Finsterbusch, 1995; Hildebrandt & Sandham, 2014; Kruger & Sandham, 2018; Nwapi, 2015; Terrapon-Pfaff *et al.*, 2017). In an attempt to overcome some of the shortcomings of SIA methodological guidance and to improve the quality of SIA reports, the concept of 'integrated impact assessments' have been brought under the lens, i.e. combining SIA with other impact assessment fields (Barrow, 2000; Becker, 1997; Bowd *et al.*, 2015; Cottrell & King, 2011; Dendena & Corsi, 2015; Esteves *et al.*, 2017; Esteves & Barclay, 2011; Kidd *et al.*, 2018; Morrison-Saunders *et al.*, 2014; Sloodweg *et al.*, 2001; Vanclay, 2014a; 2015). Disaster Risk Assessment (DRA) has been identified as one of the fields for potential integration with SIA (Arce-Gomez *et al.*, 2015; Domínguez-Gómez, 2016; Mahmoudi *et al.*, 2013; Usman *et al.*, 2013; Vanclay, 2015).

The South African National Disaster Management Centre (NDMC) defines DRA as a standardised methodology to identify and analyse potential risks and hazards and to prioritise them to better inform development planning initiatives (NDMC, 2016). Both SIA and DRA aim to enhance community resilience and to ensure a sustainable future. However, in South Africa they are considered as two separate fields with little overlap in practice. The position of SIA and DRA practice in South Africa have been stated in the preceding chapters and these are also relevant here — SIA is an integral component of Environmental Impact Assessment (EIA) which is not explicitly legislated in the National Environmental Management Act (NEMA) of 1998, hence contributing to SIAs' subordinate status. DRA is explicitly legislated in the Disaster Management Amendment Act (DMAA) No. 16 of 2015, thereby mandatory for local government concerned with disaster management planning.

In Chapter 4 the practical discourses of SIA and DRA in South Africa have been investigated, where the desire to improve the current methodological guidance and the need for integrated impact assessments was emphasised and have shown to remain part of the practical discourses in SIA and DRA in-line with broad international research trends (Kruger *et al.*, 2020b). Chapter 4 has further explored SIA and DRA specialists' perceptions on four practical discourses, i.e. the specialist's career experience; hindrances in practice; methodological guidance and integrated assessments, of which the latter two discourses are relevant here. The SIA specialists have revealed the difficulty to bridge the current methodological guidance to practice by stating the

difficulty of translating it into the complex social contexts of South Africa and that this does not necessarily guide good practice. Therefore, specialists turn to other international guidance documents for assistance. Additionally, a potential gap in terms of a lack of uniform guidance to conduct Social Baseline Surveys as part of the SIA methodological approach was identified. Social Baseline Surveys provide an overview of baseline socio-economic conditions and assist in identifying potential socio-economic risks and benefits, which form part of the broader SIA guidance and are usually conducted during the scoping phase of project cycles (Barbour, 2007; Kruger *et al.*, 2020b; Vanclay *et al.*, 2015). A need for a stronger balance between more flexible, yet rigorous, methodological guidance to pilot inexperienced and untrained professionals more effectively when entering the field of practice, and to improve on the quality of reports has been emphasised in Chapter 4, which has also corroborated with the findings of Hildebrandt and Sandham (2014), and Kruger and Sandham (2018).

The available methodological guidance for DRA sets a standardised approach in conducting DRAs, thereby setting a national baseline for DRA practice. The methodological guidance and techniques of DRA have been identified to potentially contribute to filling the gap of rigorous guidance for Social Baseline Surveys as part of SIA, due to their shared characteristics. Moreover, the South African DRA guidance is straightforward and clear-cut, which could easily be adopted by SIA specialists, especially in conducting social baseline studies. However, despite foreseeable shortcomings in the current available methodological guidance, both SIA and DRA specialists support the potential integration and cross-fertilization of these impact assessments because of the potential value it may hold for future practice, which is why this integration is worth investigating. The aim of this study is two-fold, i.e. firstly, to investigate the commonalities and differences between SIA and DRA methodology and techniques in South Africa, and secondly to investigate the potential contribution of DRA to improved SIA methodology to guide good practice in South African SIA — an exercise which has not yet been reported in South Africa and elsewhere. However, an overview of the research approach followed in doing so will be given first.

5.2 Research Methodology

In order to achieve the aim, this study follows a qualitative research approach, utilising documents as a source of data (Fouché & Delport, 2011). Currently available South African and international SIA and DRA guidance documents have been compared and critically investigated, and a content analysis has been conducted to analyse them. Nieuwenhuis (2012:101) describes a content analysis as a “*systematic approach to qualitative data analysis that identifies and summarise*

message content". It is therefore an approach where the researcher investigates the documents from various angles in search for similarities and differences to be able to answer research questions. The findings from the comparison and analysis follow below.

5.3 South African SIA and DRA methodological overview

This section of the paper investigates the most commonly utilised South African SIA and DRA methodological guidance. An overview of the SIA methodology is followed by an overview of the DRA methodological guidance, followed in turn by a methodological analysis to establish gaps and opportunities in SIA and DRA methodological guidance.

5.3.1 SIA methodological guidance

South African SIA practice is led by two guidance documents, i.e. the 'Guideline for involving Social Assessment specialists in the EIA process' (Barbour, 2007), which was prepared for the Department of Environmental Affairs and Development Planning of the Western Cape Province in 2007 (hereafter referred to as the South African SIA guidance); and the 'Social Impact Assessment: Guidance for assessing and managing the social impacts of projects' (Vanclay *et al.*, 2015), prepared for the International Association for Impact Assessment (IAIA) in 2015 (hereafter referred to as the IAIA international SIA guidance). An overview of these two guidance documents is given separately below.

5.3.1.1 South African SIA guidance

The guidelines for SIA specialists in the EIA process (Barbour, 2007) encourage the pro-active consideration of impacts during the impact assessment process of which the main purpose is to improve the efficiency, effectiveness as well as the quality of SIA reports as a specialist study and as an integral component of the EIA process in South Africa. The South African SIA guidance document is divided into five (5) parts (Part A to Part E), each with a different focus. The guidance document starts off with explaining the basic background and orientation of SIA in South Africa (Part A and Part B). These first two parts can assist non-specialists of SIA to gain a better understanding of South African SIA and also to assist Environmental Assessment Practitioners (EAPs), project proponents and key stakeholders to better comprehend the importance of SIA and its role in the EIA process. Therefore, this guidance document is not intended to make social

experts of non SIA specialists, but rather to draw on best practice in EIA and other specialist fields in providing guidance to conduct comprehensive SIAs and to produce quality SIA reports in South Africa. The third part (Part C) of this guidance document shifts the focus from a basic background of SIA to the qualifications, skills and experiences that SIA specialists should hold. Here, the focus is more on the practical application of SIA and the role of SIA specialists in the planning phase of the impact assessment process. Part D includes detailed discussions on the basic steps, phases and/or tasks in producing comprehensive SIA reports. Here, social impact variables are listed and the criteria used for the assessment of impacts are also presented. Although a detailed discussion of the methodology is provided here, it does not provide any practical examples of techniques or tools that can be utilised by SIA specialists to guide them in conducting their assessments, which might be ascribed to companies' specific reporting requirements and the Terms of Reference (ToR) provided by EAPs. Lastly, Part E includes the evaluation criteria for EAPs to review SIA reports as well as other specialist inputs in the EIA process.

This South African SIA guidance document adopts two approaches in conducting a SIA, i.e. a Technocratic and a Participatory approach. The Technocratic approach to SIA relies on the interpretation of secondary data, for example the interpretation and study of other specialists' studies and similar projects, whereas the Participatory approach incorporates the knowledge and experiences from communities, for example information gathered during a public participation process or social baseline survey. The document does however note that the technocratic assessment criteria that are also typically used in the EIA process, tend to not always lend themselves to comprehensively assess social impacts due to the ability of a social system to respond and adapt to change. Furthermore, the document states that SIA specialists should have a recognized degree in social sciences with several years' experience. To conduct comprehensive SIAs and produce quality SIA reports, specialists should be familiar with the local as well as the international SIA methodology. Additionally, the timing of SIA during the project phase is also included and discussed in the guidance document; SIA specialists should play an active role in the planning phase of a proposed development or project. Moreover, the guidance document advises that an essential part of the SIA process is that "*some form of Baseline Social Survey be undertaken as part of the Screening/Scoping phase*" (Barbour, 2007:29). The information gathered from the Social Baseline Survey should provide EAPs, project proponents and authorities with an overview of the socio-economic conditions of the affected area and/or community, and also provide information regarding the potential social benefits and likely risks associated with the proposed development, the impacted area and the community. Therefore, the baseline study should guide SIA specialists in conducting comprehensive SIAs. The document provides typical social and economic baseline information that should usually be included in a baseline study, and although some of the information can be obtained from existing literature, like

government reports and legislation, the document states that “*secondary sources should also be supplemented by a site visit*” which include interviews with key stakeholders and observations need to be conducted to ensure the reliability of the baseline data (Barbour, 2007:42–43), and to gain a comprehensive understanding of the social environment which is an essential part of SIA. However rigorous guidance and techniques on how to do Social Baseline Surveys are absent. This corroborates with the findings in Chapter 4 where the lack of rigorous guidance presented and it has been suggested that integrated assessments, like Disaster Risk Assessment (DRA) be further explored in this regard, which will follow later in this paper.

The guidance document provides an overview of what information should typically be included in a SIA report and the interpretation of the impact assessment criteria or technique used in conducting SIAs. However, specialists should use the assessment criteria with care, because the assessment of significance is guided by public participation and specialists’ judgements, placing emphasis on the need for experienced SIA specialists. Lastly, this guidance document notes that social environments are complex and are not easily quantifiable — South Africa’s social environments are complex, dynamic and continuously changing.

An overview of the international guidance is now presented, followed by an analysis of the key issues within this guidance document and a comparison with the international SIA guidance.

5.3.1.2 IAIA International SIA guidance

The IAIA international SIA guidance document by Vanclay *et al.* (2015) was published in April 2015, eight years after the South African SIA guidance document by Barbour, and was built on the ‘International Principles for Social Impact Assessment’ (IAIA, 2003), hence contributing to the international utilisation of this document. The purpose of this guidance document is not to provide guidance pertaining to jurisdictions, requirements and technical guidance in conducting SIAs, but rather to provide guidance to social stakeholders, including SIA practitioners, on SIA international good practice. Therefore, this guidance document should be adapted to SIA practitioners’ own social context, thereby lending to the flexibility of this guidance document.

Similar to the South African SIA guidance presented above (Barbour, 2007) this guidance document provides an overview of SIA’s role in each phase of a project cycle and provides a list of tasks expected of SIA practitioners internationally. These tasks include ex-ante assessments of potential social impacts, a community socio-economic profile and a social baseline study to inform decision making and to document social changes over time. SIA needs to address everything related to people or communities, their environment and their way of living (Vanclay *et*

al., 2015), but for this to be realised SIA cannot be seen merely as a checklist of potential impacts. A deeper participatory of the proposed intervention and the potential risks and impacts it holds for the affected community is required, which links up with the participatory approach of the South African SIA guidance above. Furthermore, this guidance document includes the ethical requirements to which a SIA practitioner should adhere in conducting proper SIAs, and also includes a list of the contents to be typically included in a SIA report. The focus of this guidance document is on an international audience on good practice SIA. The status of SIA globally has been thoroughly addressed in previous chapters as an integral part of EIA, and that it is often associated as being the 'lesser sibling' of impact assessments. The international best practice drive of this document supports the view of Vanclay (2014b) that SIA is more than a component of EIA, suggesting that it is superior to EIA because it has been driven by best practice to manage social impacts, instead of being a regulatory tool like EIA. To address some of SIA's shortcomings and in the pursuit to optimize SIA practice, the integration of SIA with DRA is a new research trend which has been addressed in the preceding chapters and is also relevant here. Like the South African SIA guidance above, the key issues in this part will follow later in the analysis section, but the overview of the DRA methodology follows below.

5.3.2 DRA methodology and techniques

Earlier in this paper it was noted that, compared to the South African SIA guidance, the current South African Disaster Risk Assessment (DRA) guidance is clearer and more useful, which corroborated with the responses from specialists presented earlier in Chapter 4. DRA methodology in South Africa is guided by one document, i.e. the 'Guideline for Conducting Comprehensive Disaster Risk Assessment, PART 1: Hazard identification, analysis and prioritisation' (NDMC, 2016). This document was prepared by the Directorate of Policy Development and Regulatory Frameworks and came into effect on the 31st of July 2016; one year after the promulgation of the Disaster Management Amendment Act No. 16 of 2015 (DMAA). This was more than a decade after the promulgation of the Disaster Management Act No. 57 of 2002 (DMA) and the National Disaster Management Framework of 2005 (NDMF). The historical trend and the legislative development pertaining to DRA have been covered in Chapters 2 and 3, however it is safe to note here that before the promulgation of the DMAA and the release of this guidance document, the focus of Disaster Risk Management (DRM) in South Africa has rather been more re-active (i.e. response and recovery), than pro-active (i.e. DRA and disaster risk reduction (DRR) planning). Therefore, this document is the first formalised DRA guidance for South Africa that sets a national baseline for specialists concerned with DRA. The purpose of this Guideline for Conducting Comprehensive Disaster Risk Assessment (hereafter referred to as the

DRA Guideline), is to provide specialists involved in conducting DRAs with a standardised methodology and technique to identify hazards and risks, and to analyse and prioritise them, which forms part of the comprehensive DRA process (NDMC, 2016). The DRA Guideline further states that DRAs should be the basis for risk reduction planning in all spheres of Government, as prescribed by regulation (NDMC, 2016). In addition, the Hazard Assessment Tool (HAT) should accompany the DRA Guideline. The HAT is a technique that outlines the main parameters to conduct a comprehensive hazard assessment and analysis, and also takes into consideration the legislative framework for Disaster Management in South Africa, international best practice, the complexity of big data and theory, as well as the disaster management administrative context in the country. Before making use of the HAT, DRA specialists should pay careful attention to the understanding of the terminology ‘hazard’ and ‘risk’ as explained in the DRA Guideline. A hazard is referred to as “*a dangerous phenomenon, human activity or condition that may cause loss of life, injury or health impacts, property damage, loss of livelihoods and services, social and economic disruption or environmental damage*”, whereas risk refers to the *likelihood* of hazards to occur (NDMC, 2016:7–8). It is essential to understand the difference between the two terms to conduct comprehensive DRAs for future planning purposes.

Similar to the South African and international SIA guidance presented earlier, the DRA Guideline strongly recommends that DRA specialists should adopt a participatory approach in conducting DRAs to better inform the planning process (NDMC, 2016). The participatory approach includes consultation with communities and key stakeholders as to gain a better understanding of their perceived vulnerabilities and threats, and using this knowledge to better inform and guide the planning process. A four (4) phase approach to conduct comprehensive DRAs, making use of the HAT, is proposed by the DRA Guideline (NDMC, 2016):

The first phase involves the *identification of hazards*. In this phase the DRA Guideline and HAT provide a national list of prior established hazards. Its purpose is to provide a structured list for DRA practitioners to identify hazards in a community or affected area. The second phase in the DRA process is the *analysis of hazards*, where the hazards that have been identified from the previous phase are now being analysed in terms of the nature of the hazard. Here a set of scoring criteria is applied to the affected area. The probability of the hazard to occur i.e. the risk in a given space and time; the frequency of how often the hazard might occur; the predictability of how foreseeable the identified hazards are; and the magnitude of the severity of the hazards, are being assessed during this phase, which is at the heart of DRA. This is very similar to the SIA significance calculations for SIA reports suggested earlier in the South African SIA guidance by Barbour (2007). After the analysis the hazards are *prioritised*, which forms the third phase and involves that identified hazards from phase one and two are prioritised or ranked from high to low,

using the numerical values calculated during phase two through the utilisation of the HAT. The last phase in the DRA process is focused on the *reporting* of the findings from phases one to three where the findings are compiled in a report to inform disaster management planning.

The DRA Guideline acknowledges that there is a Guideline for the Development and Structure of Disaster Management Plans of 2017 to provide specialists with a uniform structure and guide in the development of disaster management plans (NDMC, 2016). This guideline will not be discussed here for the focus of this paper is only on the methodology of DRAs. The analysis of the SIA and DRA guidance is presented next.

5.4 SIA and DRA methodological content analysis

Following the overview of the SIA and DRA methodological guidance above, this section will now analyse the guidance documents to identify gaps and opportunities. A summary of the key findings from the content analysis is illustrated in Table 5-1 below followed by a discussion of the analysis.

Table 5-1: SIA and DRA methodological content analysis.

South African SIA guidance (Barbour, 2007)	IAIA international SIA guidance (Vanclay <i>et al.</i> , 2015)	DRA methodological guidance (NDMC, 2016)
- Pro-active guidance. - Draws on best practice. - Broad approach. - Un-prescribed guidance — not legislated. - Technocratic approach = inflexible. - Participatory approach = experience required. - Qualified and experienced social specialists. - Active role in planning stage. - Sustainable Livelihoods Approach (SLA). - Need for social baseline survey — no rigorous guidance.	- Pro-active (risk scoping) & Ex-ante assessment. - International good practice. - Builds on international guidance — not legislated. - Detailed prescriptions. - Comprehensive guidance. - Flexible — adopt to own social contexts. - Include definitions of social risks. - Need for social baseline survey — no rigorous guidance.	- Pro-active guidance; risk reduction planning. - International best practice. - Prescribed guidance — legislated. - Detailed methods provided; HAT tool. - Flexible, clear guidance. - Participatory approach is followed. - Interrelation with other guidance supported.

By means of a content analysis of both SIA guidance documents it is evident that some of the matters are parallel to each other — the International SIA guidance document of Vanclay *et al.* (2015) draws on SIA international good practice, whereas the South African guidance of Barbour (2007) draws on best practice in South Africa only. Guidelines are described by IAIA (2003:8) as “*action-statements*” to “*plan a specific course of action*” and provide clarity on how these actions should be conducted. It is therefore the intent of guidance documents to provide direction and advice for the planned courses of action for the intended audience. Both documents provide

general guidance and are not intended to create social experts by having the role of an instruction manual, hence they should both rather be adopted by specialists and adapted for their specific needs and social contexts. Although these documents allow for flexibility, the lack of methodological rigour and absence of techniques, coupled with inexperienced and untrained social specialists, might reflect negatively on the quality of South African SIA reports. Additionally, both SIA documents only provide a generic overview of the contents that should be included in a SIA report. Neither practical techniques, nor examples are given as a minimum standard for quality SIA reports.

Barbour (2007) states that one of the key challenges in SIA is to understand the perceptions, meanings and the social significance of changes due to proposed developments, hence the need for a Social Baseline Survey or a Baseline Study. The purpose of a Social Baseline Survey is to inform the SIA through the identification of social risks and benefits that a proposed intervention might pose. Additionally, it is intended to provide guidance for SIA specialists during the planning (scoping) phase of project developments in conducting comprehensive social risk assessments. Although the need for Social Baseline Surveys is addressed in both documents, both fail to provide detailed rigorous methodological guidance and tools in conducting these. This is a potential flaw in the methodological guidance for SIA, but is at the same time an essential component of the SIA process that should not be neglected. Furthermore, Barbour (2007) has criticised the use of a technocratic assessment approach for its inflexibility to adapt to social change. The use of the proposed criteria in the South African guidance document should be used with care by experienced SIA specialists, because it is a process that is guided by community inputs and the professional judgement of SIA specialists. Thereby, young professionals entering the field of SIA often do not have recognised social qualifications, are inexperienced and untrained to conduct comprehensive risk assessments in the scoping phase of project developments, and failure to identify and assess social risks might have an adverse effect on the scope and quality of SIAs for proposed interventions, hence the motivation for investigating the possible integration of DRA's methodological guidance and techniques to strengthen this gap.

In comparison with the SIA guidance documents the DRA document is much more prescriptive. This is most likely due to the fact that the DRA guidance is legislated by the Disaster Management Act No. 57 of 2002 (DMA), which addresses the need to identify high risks that potential interventions might pose to vulnerable communities (RSA, 2002). It is a comprehensive, yet easily adaptable guideline of how to conduct comprehensive DRAs. Similar to the SIA guidance documents, the DRA document also gives information on the planning phase and includes the participation of the public. This guidance document provides a national hazard list as part of the potential hazard identification process, however providing a formal national list of hazards might

restrict the identification of hazards in the DRA process by excluding other hazards for different socio-economic and environmental contexts, which can be seen as a potential flaw of this document. Therefore, this list should also include hazards that are flexible in social change processes rather than providing a prescribed list of hazards. This list should only be used as a guideline for DRA specialists to adapt to their own social contexts and rather be used as a starting point for the assessor. Indeed, Vanclay (2006) argues that the “*development of a checklist mentality*” should be avoided. A prescribed checklist would tend to be more technocratic, whereas social impacts should rather be considered as all overarching impacts on people. Despite this view a list of potential impacts might provide more rigorous guidance to inexperienced professionals, but should be cautiously utilised and adapted for each unique social context. This corroborates with the findings from the SIA specialist’s responses in Chapter 4 that more rigorous guidance is needed, but to avoid a checklist exercise, the guidance should be flexible or adaptable to different social contexts, coupled with mentorship from well experienced SIA experts.

Therefore, based on the findings from the document review and content analysis, together with the findings from the potential cross-fertilization of the two fields presented in Chapters 2 and 3, and the practical discourses given in Chapter 4, i.e. methodological guidance and integrated assessments, this paper proposes an integrated Social and Disaster Risk Assessment approach to provide for the lack of rigorous Social Baseline Survey methodological guidance and techniques. An example of what such guidance will look like is given below.

5.4.1 Integrated Social and Disaster Risk Assessment

In Chapter 4 of this study, as well as earlier in this paper, it has been demonstrated that the DRA guidance presented above can provide more rigour to the SIA methodological guidance for Social Baseline Surveys, yet still be flexible to allow for social systems’ ability to adapt to change. Thereby, this paper proposes an integrated Social and Disaster Risk Assessment approach (hereafter referred to as SDRA) to potentially address the gap in the methodological guidance and techniques for Social Baseline Surveys in South African SIA practice. In short the SDRA follows the same DRA guidance as presented earlier, accompanied with the HAT as set out in the guideline, but adapted in order to focus specifically on the affected social environments of proposed interventions. Therefore, the following steps for the SDRA apply here:

- 1) Review and consider the five categories of social assessment variables identified by Barbour (2007:54), the Interorganizational Committee on Guidelines and Principles for Social Impact Assessment (1995:23) and the Interorganizational Committee on Principles

and Guidelines of Social Impact Assessment (2003:242) (Table 5-2) and ensure that all prevalent social hazards have been identified. Although these variables can be viewed as a check-list to identify potential areas that may hold social risks or impacts for communities, it does provide a starting point for inexperienced practitioners. It is essential for specialists to still follow proper consultation processes (individual interviews, focus group interviews, public meetings etc.) to accurately and comprehensively identify and assess social hazards, since the participatory approach and public involvement is at the SDRAs' core. Barbour (2007:32) corroborates that SIA should go beyond *"the prediction of social impacts to include issues related to the empowerment of local people, gender issues, minority groups, capacity building, equity, development and poverty reduction"*.

Table 5-2: Social Assessment Variables (Adapted from Barbour, 2007; Interorganizational Committee on Guidelines and Principles for Social Impact Assessment, 1995; Interorganizational Committee on Principles and Guidelines of Social Impact Assessment, 2003).

Category	Social Assessment Variables
Population Characteristics	<i>Refers to population changes (size and density); ethnic and racial distribution and composition; influx and outflow of temporary workers; presence of seasonal or leisure residents; and relocation of families / individuals / communities.</i>
Community and Institutional arrangements	<i>Size, structure and level of organization of local government; local / regional / national linkages; historical and present patterns of employment and income characteristics; industrial diversification; characteristics of voluntary associations; interest group activity; and employment equity.</i>
Political and social resources	<i>Includes the distribution of power and authority; the interested and affected parties (IAPs); the identification of key stakeholders; leadership capabilities; conflict between long term / permanent residents and newcomers; presence of outside agencies; and inter-organisational cooperation.</i>
Individual and family changes	<i>Factors disrupting the daily living and movement patterns of people; attitudes towards policy / projects; perceptions of risks, health and safety; displacement / relocation concerns; residential stability; change in leisure opportunities; introduction of new social classes; changes in family structures and social networks; trust in social and political institutions; and concerns about social well-being.</i>
Community resources	<i>Changing natural resource and land use patterns; changes in community infrastructure and services; changes for indigenous people and religious subcultures; and threats to historical, cultural and archaeological resources.</i>

- 2) Analyse the identified hazards using the respective criteria, as set out in the DRA guidance document and also presented here, and apply it to the HAT technique (example in Figure 5-1 below). The respective criteria are:
 - Affected area: This refers to the geographical area affected by the proposed interventions (**Score criteria**: Small area e.g. rural village or farm=1 / Municipal Ward=2 / Local Municipality=3 / Multiple Local Municipalities; District or Metropolitan Municipality=4 / Multiple District or Metropolitan Municipalities; Province; National=5).

- Probability: Refers to the probability or the likelihood of the hazard to occur in a given area, space and time (**Score criteria:** *Highly improbable=1 / Slightly possible=2 / 50% chance=3 / Very good chance=4 / 100% certain=5*).
- Frequency: Is how often the hazard is likely to occur (**Score criteria:** *>20 years=1 / 1–20 years=2 / Annually=3 / Monthly=4 / Weekly=5*).
- Predictability: Refers to the degree of how foreseeable the event is (**Score criteria:** *100% predictable=1 / Fairly accurate to predict=2 / 50% chance to predict=3 / Slight chance to predict=4 / Cannot predict=5*).
- Magnitude: This refers to the severity of the hazard on the affected individuals and/or community (**Score criteria:** *Low=1 / Low–Medium=2 / Medium=3 / Medium–High=4 / High=5*).

SOCIAL AND DISASTER RISK ASSESSMENT ANALYSIS (SDRA)						
PROJECT TYPE AND PHASE						
LOCATION						
	ANALYSIS CRITERIA					
SOCIAL RISKS	AFFECTED AREA	PROBABILITY	FREQUENCY	PREDICTABILITY	MAGNITUDE	SOCIAL RISK SCORE
E.g. Influx of temporary workers						
E.g. Loss of land and associated income to landowner						
E.g. Risk of theft and safety						

Figure 5-1: Example of Social and Disaster Risk Assessment (SDRA) Analysis Technique (Adapted from NDMC, 2016).

- 3) After the final social hazard scores have been determined and the outcome of the analysis have been reviewed, the social hazards need to be prioritised from highest to lowest (**Score criteria:** *Highest Hazards (>21); High Hazards (>17–21); Medium Hazards (>13–17); Low Hazards (>9–13); Lowest Hazards (>5–9)*).
- 4) Report on the outcome of the analysis, following respective company format, or as agreed on in the Terms of Reference (ToR) provided by the appointed EAP.

To comprehensively identify potential social risks and impacts, as well as the benefits of proposed interventions on the affected or impacted community, thereby effectively inform the SIA process, the SDRA is recommended for the use by inexperienced social specialists whose task is to

conduct SIAs; provide a more rigorous approach to conduct Social Baseline Surveys; to be flexible in identifying social hazards and risks; and ultimately promote South Africa's SIA report quality in the strive for SIA best practice.

5.5 International best practice guidance

SIA practice internationally is guided by three documents, namely: The International IAIA SIA guidance for assessing and managing the social impacts of project presented earlier (Vanclay *et al.*, 2015); the 'International Principles for Social Impact Assessment' (IAIA, 2003); and the 'Principles and Guidelines for Social Impact Assessment in the USA' (Interorganizational Committee on Principles and Guidelines of Social Impact Assessment, 2003). These guidance documents were published in 2003 under the auspices of IAIA, building on the 'Interorganizational Committee's Guidelines and Principles for Social Impact Assessment' from 1994 (Interorganizational Committee on Guidelines and Principles for Social Impact Assessment, 1995).

Vanclay (2006) provides a critical comparison between the International Guidelines and Principles and the US documents. His study has found that the 1994 Guidelines and Principles were developed for the broader international SIA community, while the US document should have been more focused, but was found to be more generic — the Guidelines and Principles of 2003 have been found more technical than those of 1994. Although these documents are internationally recognised and used by SIA specialists worldwide, it is argued that they fail to engage with core international SIA literature, hence not taking into consideration the progress and development that the field of practice has made.

The guidance documents utilised by South African SIA practitioners presented and discussed earlier in this paper, have illustrated that they are in line with SIA international good practice. However, South African SIA specialists have demonstrated in Chapter 4 the need for more rigour in the currently available SIA methodological guidance in order to overcome some of the hindrances that they have experienced in SIA practice and these have been stated earlier in Chapter 4. Additionally, they have identified their usage of other international guidance documents, like: The International Finance Corporation (IFC); European Investment Bank (EIB); and the World Bank guidance notes. IAIA (2003) has further stated that new methodologies and techniques are emerging, including risk assessment.

Risk assessment is one of the methodologies that has recently come to the fore in studies to be integrated with SIA (Barrow, 2000; Becker, 1997; Cottrell & King, 2011; Domínguez-Gómez,

2016; Durning, 2014; Gore & Fischer, 2014; Imperiale & Vanclay, 2016; Kidd *et al.*, 2018; Mahmoudi *et al.*, 2013; Usman *et al.*, 2013; Vanclay, 2015). DRA is encouraged on an international platform by the 'Sendai Framework for Disaster Risk Reduction 2015–2030' (SFDRR) to update development activities (UNISDR, 2015), yet no single international standard is set for DRAs. In 2011, the African Centre for Disaster Studies (ACDS) have released a training module for 'Disaster Risk Assessment and analysis' as part of the United States Agency for International Development (USAID) disaster risk reduction training programme for Southern Africa (Forbes-Biggs, 2011). This training document provides comprehensive guidance to DRA experts and is freely available on the web to be utilised. However, in the findings of Chapter 4 none of the experts have demonstrated their familiarity, nor the utilisation of this document. In the absence of international standards, this document could be a good starting point to set the standard.

In the preceding Chapters it has been identified that in 2005, South Africa was one of the first countries in Africa to legislate disaster risk management (DRM) with the promulgation of the Disaster Management Act, No. 57 of 2002 (DMA) and the National Disaster Management Policy Framework (NDMF) (Van Niekerk, 2014). Since then all organs of the state in South Africa have been required to conduct DRAs to identify high risk areas, reduce communities' vulnerabilities, and to better inform development planning (Kruger *et al.*, 2020a; Van Riet, 2009). Hence, the development of the DRA guidance document has provided DRA specialists in South Africa with a scientific, systematic and rigorous approach to conduct DRAs. Conversely, Van Riet (2009) has critically discussed the various shortcomings of DRAs in South Africa based on its reliability, validity and scientific rigour, which should be taken into consideration when conducting comprehensive DRAs. Although DRA practice in South Africa still has a long way to go, this study has shown that the current DRA methodology provides a good starting point for a national standard for DRA specialists aiming for best DRA practice in South Africa.

The incorporation of DRA for improved SIA in South Africa will therefore assist inexperienced and untrained professionals in SIA practice to effectively conduct comprehensive SIAs, thereby to produce quality SIA reports that influence decision making processes and to effectively measure social changes over time. Therefore, the findings of this study suggest that the potential contribution which DRA can make to improved SIA in South Africa, should be encouraged with the aim to reach social sustainability for future best practice and to ensure social well-being.

5.6 Conclusion

This paper has critically investigated current SIA and DRA methodological guidance in order to establish the potential contribution that DRA could make to SIA's field of practice. Following an in-depth content analysis this study has suggested that DRA could contribute to improved SIA in South Africa. A lack of rigorous methodological guidance for Social Baseline Survey has been demonstrated, hence impeding the effectiveness and quality of SIA reports. It has been concluded that DRA currently provides methodological guidance that could be adapted to improve SIA and to improve the guidance for untrained and inexperienced SIA professionals in conducting baseline studies to inform their assessments.

SIA would, in the pursuit of sustainable development, need to adapt to new expectations in the field of practice. This paper therefore suggests that in the search towards best practice and sustainable development; and to improve the quality of reports; integrated social and disaster risk assessment should be encouraged, facilitated and developed.

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CHAPTER 6: CONCLUSIONS AND WAY FORWARD

6.1 Introduction

In Chapter 1 of this PhD thesis the research aim was stated as follows: To investigate the contribution of Disaster Risk Assessment (DRA) to improved Social Impact Assessment (SIA) in South Africa. To achieve this, five research objectives have been set in the first chapter:

1. To investigate the current academic and theoretical discourses in SIA and DRA;
2. To examine and critically compare the current South African legislation and policy concerning SIA and DRA;
3. To investigate the current discourses regarding SIA and DRA in practice;
4. To investigate the similarities and gaps in SIA and DRA methodologies; and
5. To investigate the contribution of DRA to improved SIA methodology in order to guide good practice in South African SIA.

Chapters 2, 3, 4 and 5 of this PhD thesis (presented as article manuscripts 1, 2, 3, and 4) demonstrate how these research objectives have been achieved. The purpose of this concluding chapter is to provide an integrated summary of the main findings, a discussion of the conclusions and accomplishments of the research objectives, and it concludes with a summary of the contributions of this thesis as well as recommendations for future research and practice.

The following sections of the concluding chapter recap the main findings of this thesis and provide the conclusions derived from each chapter, and demonstrate the achievement of the research objectives. The discussions below will be presented according to the four relevant chapters.

6.1.1 Chapter 2: *SIA and DRA integration: Understanding the discourse* (Article Manuscript 1)

The aim of Chapter 2 was to investigate the current academic and theoretical discourses pertaining to SIA and DRA by means of an in-depth literature review (Research Objective 1). SIA has been identified as an assessment tool to identify, assess, analyse, manage and monitor potential risks and impacts of proposed interventions that communities are exposed to. Thereby, it is also a tool to assist in reducing communities' vulnerabilities and assist in enhancing

community resilience. The global status of SIA has been highlighted, where SIA forms an integral component of Environmental Impact Assessment (EIA), hence contributing to SIAs subordinate status. However, despite the flaws of SIA, it has largely been driven by best practice considerations and not only as a regulatory tool. Thus, to improve SIA practice in the desire for social sustainability, various avenues to optimize SIA practice have been explored, one of which is SIAs' integration with other impact assessment fields. SIA has been exposed as being too isolated from other impact assessment fields, which also contributed to SIA's neglected status. DRA, as integral part of disaster risk planning, has been identified as a potential overlapping field with SIA, which is an emerging trend internationally, but has not been investigated in South Africa, and therefore is the reason why this investigation has been conducted. This chapter has shown that SIA globally can benefit by contributions from DRA, due to a number of shared characteristics.

An investigation of the historical development of SIA and DRA was conducted first, demonstrating their distinct development paths and isolation from one another. Secondly, the discourse of integrating SIA and DRA was investigated where the findings not only have emphasised their distinct differences, but have also revealed evidence of their complementarity to each other through three areas of potential integration, i.e. their shared *focus*, *approach*, and *regulation*. SIA and DRA share people-centred foci within sustainable development, which is embedded in their definitions and over-arching goals. SIA and DRA also share pro-active approaches as part of development planning processes and encourage multi-stakeholder and transdisciplinary approaches. Moreover, integration pertaining to their regulations has been shown to be promising, but has necessitated further investigation in Chapter 3.

The evidence from the international and South African theoretical discourses as revealed in the literature therefore suggests that, despite significant differences between SIA and DRA, there is considerable scope for meaningful integration for improved SIA. Based on this evidence, the next logical step was to compare the legislative context of SIA and DRA in South Africa, which was the second objective and the focus of Chapter 3.

6.1.2 Chapter 3: *Improved SIA through DRA integration: lessons from a South African legislative comparison* (Article Manuscript 2)

The purpose of Chapter 3 was to examine and critically compare current South African legislation and policy pertaining to SIA and DRA; to search for gaps and similarities that could provide potential opportunities for integration between SIA and DRA (Research Objective 2).

Internationally, as well as in South Africa, SIA has evolved as an integral part of EIA by the means of a social specialist report that informs the EIA and is thereby also embedded in many countries' environmental legislative structures. Despite numerous improvements in the field of SIA, the dominance of the biophysical paradigm in the environmental assessment process still prevails over the social component, hence contributing to the 'orphaned' status of SIA. In South Africa, following four EIA legislative regimes, SIA is still not explicitly legislated. Therefore, to optimize SIA, improved regulatory frameworks are needed and SIA should become a legal requirement. A potential avenue to improve SIA is the integration of SIA and DRA due their shared characteristics and transdisciplinary nature presented in Chapter 2. However, their integration is poorly understood and has not been researched in South Africa, therefore this is worthy of further exploration. By contrast to SIA, DRA in South Africa is explicitly legislated and enforced in all spheres of Government.

The legislative requirements for SIA and DRA in South Africa reveal that these are two distinct fields, albeit with broadly similar focuses, are mandated by separated legislation and fall under different government departments. A critical comparison between the legislative requirements for SIA and DRA was conducted and the findings from the investigation for commonalities have been divided into two sub-sections, i.e. *SIA exclusion vs. DRA inclusion*, and *Shared motives*. In the legislation concerning SIA it was found that the social paradigm is to a larger extent excluded from the EIA process, resulting in SIA's subsidiary status, whereas in the legislative provisions applicable to DRA, the social paradigm features prominently at the forefront of disaster risk reduction (DRR). Furthermore, these findings have confirmed SIA and DRA's shared motive to reduce risks and vulnerabilities, to increase community resilience and to contribute to sustainable development outcomes.

The evidence from the comparison of the legislative provisions for SIA and DRA in South Africa suggests, that despite the segregation of the two fields, that they can profitably be integrated for improved SIA practice in South Africa. Therefore, the next chapter has investigated the discourses in South African SIA and DRA practice.

6.1.3 Chapter 4: *Optimizing SIA: discourses in South African SIA and DRA practice* (Article Manuscript 3)

The fourth Chapter has aimed to investigate the current discourses in SIA and DRA practice (Research Objective 3) using questionnaires and interviews with a sample of South African SIA and DRA specialists, followed by a literature study. The neglected status of SIA as a component

of the broader EIA context has been stated in the preceding chapters and is also relevant here and also persists in South African SIA practice. In view of this, the integration of SIA with DRA in the pursuit of optimizing SIA practice is an emerging international trend, which has not yet been explored in South Africa, and therefore requires further investigation, particularly amongst the practitioners of these two activities.

Four practical discourses that resonate with international trends have been confirmed, i.e. (1) *specialists' expertise*; (2) *hindrances in practice*; (3) *methodological guidance*; and (4) *integrated assessments*. The findings in this chapter have demonstrated that SIA and DRA specialists should collaborate to enhance the benefits of their shared expertise and avoid working silos. The shortcomings that these specialists have experienced in practice reflect those of international trends. Moreover, the need for rigorous methodological guidance, accompanied with formal training and mentoring, has been emphasised in order to improve report quality and ensure consistency in reporting. Subsequently, a lack of guidance for social baseline surveys as an essential part of the planning phase of SIA was highlighted, and due to DRA's shared characteristics (presented in Chapters 2 and 3), has been identified as an assessment tool that could add value to improved SIA in this regard. In both SIA and DRA, specialists have demonstrated their support towards the potential integration of the two fields due to the benefits it might hold for the improvement of these practices. A literature discourse analysis was conducted lastly to confirm that the findings from the questionnaires resonate with broad international trends.

The evidence in this chapter has emphasised the need for specialists to continually strive for best practice to optimize SIA practice and achieve sustainable development outcomes. Consequently, the integration of DRA to optimize SIA practice is encouraged. Based on these findings the next chapter has aimed to investigate and compare SIA and DRA methodologies in the pursuit to optimize SIA practice.

6.1.4 Chapter 5: *Towards integrated Social and Disaster Risk Assessment: a South African methodological comparison* (Article Manuscript 4)

Chapter 5 has investigated and compared South African SIA and DRA methodologies in search of gaps and opportunities to determine their potential integration, as well as DRA's contribution to guide good SIA practice in South Africa (Research Objectives 4 and 5). The lack of flexible methodological guidance has for long been stated as a contributing cause for weak quality SIA reports, giving rise to SIA's subsidiary status. To overcome some of the shortfalls of SIA methodological guidance and poor quality reports, the integration of SIA with DRA is an emerging

trend as also seen in Chapter 4 regarding the practical discourses SIA and DRA in practice. The position of SIA and DRA in South Africa has been demonstrated in preceding chapters as segregated practices with overlapping approaches and goals. DRA has in the preceding chapters demonstrated to potentially add value to SIA due to similarities that have been revealed. SIA, in the absence of regulatory requirements, has developed as a specialist study being part of EIA, following best practice principles, whereas DRA is mandatory for disaster management planning and enforced in government. Furthermore, Chapter 4 has demonstrated the shortfalls in SIA's methodological guidance and is also relevant for this chapter (i.e. SIA's inflexibility to adapt to complex social issues, lack of rigorous guidance and training, coupled with inexperienced specialists and lack of formative guidance for Social Baseline Surveys), which is worthy of further investigation.

The two objectives of this Chapter have been realised through a qualitative content analysis of SIA and DRA methodological guidance in South Africa. The findings have demonstrated an alignment between the South African and International SIA guidance documents, while a lack of rigorous methodological guidance for Social Baseline Surveys in the scoping phase of SIA has been emphasised, which corroborates with the findings of Chapter 4. The DRA methodological guidance sets a standardised approach to risk assessment for disaster management planning, is clear and easily adaptable and also similar to the experts' responses from the preceding chapter. Based on the evidence from the content analysis and the practical discourses presented in Chapter 4, this chapter has proposed an integrated Social and Disaster Risk Assessment (SDRA) approach, where the DRA methodological guidance is adapted to comprehensively address social hazards and risks that hold potential impacts for vulnerable communities.

This integrated approach has demonstrated the potential to add value to SIA practice in South Africa and assist inexperienced and untrained specialists to effectively conduct more holistic and better SIAs, thereby improving the quality of SIA reports and ultimately, SIA practice. The evidence from this chapter has further demonstrated that in improving SIA practice for social sustainable development and ensuring social well-being, integrated social and disaster risk assessment should be included for SIA best practice in the future.

6.2 Contributions and way forward

This last section of the concluding chapter provides the significance of this PhD thesis by stating the contributions to existing knowledge and recommendations for the way forward for future research and practice of SIA and DRA:

6.2.1 Contributions

- SIA and DRA have shared characteristics, which provide for the potential cross-fertilization of the two assessment fields;
- The potential integration of SIA and DRA contributes to the multi- and transdisciplinary nature of both these assessment fields;
- The contribution of DRA to improved SIA is poorly understood. SIA and DRA strive towards achieving similar objectives and both feed into similar development planning processes. The potential integration can bring the professionals in these two fields together;
- South African SIA and DRA practical discourses echo broad international trends;
- DRA methodological guidance can provide substantiating guidance to SIA's social baseline surveys; and
- Integrated social and disaster risk assessment can contribute to improved SIA practice.

6.2.2 Recommendations

For future research:

- Expand the discourse analysis and compare with other developed and developing countries;
- Compare SIA report quality over a longer time span to extend trends observed in Kruger and Sandham (2014);
- Expand the survey sample group of specialists to include perspectives from specialists of other developed and developing countries;
- Refine the proposed integrated SDRA tool in line with existing guidance;
- Apply the refined integrated SDRA tool to a SIA project — post facto and in real time; and
- Expand the investigation of integrated impact assessments by comparing SIA with other impact assessments.

For future practice:

- The collaboration of SIA and DRA is encouraged in order to optimize the practice of SIA, and subsequently for more holistic assessments;
- The implementation of South African legislative and statutory provisions for SIA and DRA should be more streamlined to eliminate duplication in practice;

- Due to their shared purposes, SIA and DRA methodological guidance should be more streamlined — more rigour and training is required to improve report quality and ensure consistency in reporting;
- DRA can positively contribute to SIA's Social Baseline Surveys, thereby providing more rigorous guidance for SIA practitioners; and
- SIA and DRA specialists should go beyond good practice and strive for international best practice to attain social sustainability and social well-being for a prosperous future.

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ANNEXURE A: PROOF OF PUBLICATION – ARTICLE MANUSCRIPT 2



Improved SIA through DRA integration: lessons from a South African legislative comparison

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ABSTRACT

Social Impact Assessment (SIA) and Disaster Risk Assessment (DRA) are two distinct fields, with broadly similar aims relating to sustainable communities, but usually regulated by differing regulatory systems. In South Africa, SIA is an integral but often neglected component of Environmental Impact Assessment (EIA), while DRA informs Disaster Risk Management (DRM). The potential integration of SIA and DRA is a new trend internationally. This study examines South African EIA and DRM legislative and statutory provisions, searching for commonalities that could support potential integration between SIA and DRA – a phenomenon not yet reported on in South African literature or elsewhere. The EIA legislation was found to have a strong biophysical focus with limited provision for social issues, whereas DRM legislation more explicitly places people at the forefront of risk reduction. Despite the observed differences, commonalities were observed in SIA and DRA's shared purpose to reduce risks, increase community resilience and achieve sustainable development. These findings suggest areas which offer opportunities for meaningful collaboration between SIA and DRA, leading to improved SIA status and practice in South Africa and valuable lessons for other countries with an SIA-DRA dichotomy.

ARTICLE HISTORY

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KEYWORDS

Social Impact Assessment (SIA); Disaster Risk Assessment (DRA); legislation; integration; South Africa

Introduction

June 1992 marked a pivotal year globally for Environmental Management (EM) with the release of the 27 Rio Declaration principles at the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil. The purpose of the Rio principles was to address pressing global problems and to ensure a sustainable future for all humankind (UN 1992; Wisner et al. 2012; Aucamp 2015). Principles 1¹ and 17² paved the way for Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) by placing human beings at the forefront of development and to ensure that the needs of present and future generations are met in a sustainable manner (UN 1992; UNESCO 1992; Gardiner 2002; Barrow 2006; Wisner et al. 2012; Hildebrandt and Sandham 2014; Aucamp 2015). The 2015 Sustainable Development Goals (SDGs) reiterate that vulnerable communities need to be protected and that development must be sustainably managed and maintained (UNDP 2016). Aucamp et al. (2018) assert that a sustainable future and present needs are dependent on the interaction and balance between a protected environment and social- and economic development. It is therefore the purpose of an EIA to manage and influence human behaviour and to ensure that sustainable outcomes are met (Aucamp et al. 2018).

EIA refers to a process where potential biophysical and social impacts of proposed developments are identified, predicted, evaluated and mitigated prior to decision making (IAIA 1999). Moreover, EIA is perceived in many countries as a governance instrument that plays a significant role in raising environmental awareness and also incorporate environmental values into decision-making of proposed interventions (Arts et al. 2012). It is evident from the understanding of this definition that the social dimension is integral to the EIA process. SIA is defined as: 'the process of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions and any social change process invoked by those interventions' (IAIA 2003:5). This shows that EIA and SIA have an overarching purpose in impact assessment (Kruger and Sandham 2018). Since the inception of the National Environmental Policy Act (NEPA) in 1969, SIA internationally evolved as an integrated component within the broader context of EIA. It is argued that internationally SIA is in effect 'superior' to EIA, because EIA developed and remained a regulatory tool in many countries, whereas SIA is largely driven by good practice, thereby it is now considered as a discourse in its own right (Vanclay 2014, 2019). However, Esteves et al. (2012) stated that despite numerous calls for SIA to become separate from EIA as

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- [About the journal](#)
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- [Preparing your paper](#)
 - [Word limits](#)
 - [Style guidelines](#)
 - [Formatting and templates](#)
 - [References](#)
 - [Checklist](#)
- [Using third-party material in your paper](#)
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ANNEXURE C: PROOF OF PUBLICATION – ARTICLE MANUSCRIPT 3



Optimizing SIA: discourses in South African SIA and DRA practice

Leandri Kruger ^a, Luke Alan Sandham ^b and Dewald Van Niekerk ^c

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ABSTRACT

Social Impact Assessment (SIA) is recognized as a valuable component of environmental management, yet it has been neglected internationally and in South Africa. Disaster Risk Assessment (DRA), is identified as a complimentary activity to SIA, that due to its shared focus on community wellbeing, has the potential for integration with and enhancement of SIA. The integration of SIA and DRA is a new, but poorly researched trend in South Africa, which is explored in this paper by investigating the current discourses in SIA and DRA practice using questionnaires and interviews with a sample of SIA and DRA experts. Four practical discourses were investigated i.e. specialists' career experience; obstacles to practice; methodological guidance; and integrated assessments. This was followed by a literature study that demonstrated that these discourses echo broad international trends in SIA and DRA practice. The findings suggest that the integration of SIA and DRA should be pursued to optimize SIA for improved practice, to increase community resilience and to promote sustainable development outcomes.

ARTICLE HISTORY

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KEYWORDS

Social Impact Assessment (SIA); Disaster Risk Assessment (DRA); practical discourses; integration; sustainable development; South Africa

Introduction

The quest for sustainable development often has social consequences and holds risks for the environment and for vulnerable communities. The tools best suited to deal with these consequences and risk respectively are Social Impact Assessment (SIA) which refers to '*the process of analysing, monitoring and managing the intended and unintended social consequences ... of planned interventions and any social change process invoked by those interventions*' (IAIA, 2003, p. 5), and Disaster Risk Assessment (DRA), which is identified as a tool to understand and appreciate the nature of risk, communities' vulnerabilities, and identify measures to reduce the risks to which communities are exposed to (Forbes-Biggs, 2011).

The aim of planned interventions is to enhance community resilience and attain sustainability for the next generation, since a sustainable future is dependent on the balance and interaction between environmental and socio-economic factors. To

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- [About the Journal](#)
- [Peer Review](#)
- [Preparing Your Paper](#)
 - [Structure](#)
 - [Word Limits](#)
 - [Style Guidelines](#)
 - [Formatting and Templates](#)
 - [References](#)
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Updated 21-05-2018

ANNEXURE E: LETTERS OF CONSENT FROM CO-AUTHORS

22 November 2019

To whom it may concern,

DECLARATION REGARDING USE OF CO-AUTHORED ARTICLES IN PhD THESIS

This letter serves as confirmation that my PhD student, Mrs. Leandri Kruger (27155420) may submit the following co-authored manuscripts as part of her PhD thesis entitled "The contribution of Disaster Risk Assessment to improved Social Impact Assessment in South Africa".

- Chapter 2: SIA and DRA integration: Understanding the discourse
- Chapter 3: Improved SIA through DRA integration: Lessons from a South African legislative comparison (accepted for publication at *Impact Assessment and Project Appraisal*)
- Chapter 4: Optimizing SIA: discourses in South African SIA and DRA practice (under review at the *South African Geographical Journal*)
- Chapter 5: Towards integrated Social and Disaster Risk Assessment: A South Africa methodological comparison

My co-authorship in these manuscripts was largely focused around supervision and guidance, assistance in conceptualization, coherence and formulation, and the student, Mrs. Kruger, remains the main contributor to the academic work contained in the manuscripts.

Yours sincerely,



Associate Prof. Luke Sandham, PhD Promotor

School of Geo and Spatial Science
Faculty of Natural and Agricultural Sciences
North-West University
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22 November 2019

To whom it may concern,

PERMISSION CONFIRMING USE OF CO-AUTHORED ARTICLES IN PhD THESIS

This letter serves as confirmation that my PhD student, Mrs. Leandri Kruger (20768222) may submit the following co-authored research articles as part of his PhD thesis entitled "The contribution of Disaster Risk Assessment to improved Social Impact Assessment in South Africa".

- SIA and DRA integration: Understanding the discourse (Chapter 2);
- Improved SIA through DRA integration: Lessons from a South African legislative comparison (Chapter 3) (accepted for publication at *Impact Assessment and Project Appraisal*);
- Optimizing SIA; discourses in South African SIA and DRA practice (Chapter 4) (submitted and under review at the *South African Geographical Journal*); and
- Towards integrated Social and Disaster Risk Assessment: A South African methodological comparison.

My co-authorship in the above-mentioned manuscripts was mostly focused around study leading duties, assistance in conceptualization and proof reading, and the student, Mrs. Kruger, remains the main contributor to the academic work contained in the articles.

Kind regards and best wishes,

Prof. Dewald van Niekerk
Head: African Centre for Disaster Studies
Unit for Environmental Sciences and Management
Faculty of Natural and Agricultural Sciences
North-West University, South Africa

ANNEXURE F: SUMMARY OF MDGS AND SDGS

Millennium Development Goals (MDGs) (2000–2015) (United Nations Economic Commission for Africa, 2015)	
<i>MDG 1</i>	Eradicate extreme hunger and poverty
<i>MDG 2</i>	Achieve universal primary education
<i>MDG 3</i>	Promote gender equality and empower women
<i>MDG 4</i>	Reduce child mortalities
<i>MDG 5</i>	Improve maternal health
<i>MDG 6</i>	Combat diseases like HIV/Aids and malaria
<i>MDG 7</i>	Ensure environmental sustainability
<i>MDG 8</i>	Develop a global partnership for development
Sustainable Development Goals (SDGs) (2015–2030) (UNDP, 2016c)	
<i>SDG 1</i>	Ensure no poverty
<i>SDG 2</i>	Ensure zero hunger and achieve food security
<i>SDG 3</i>	Ensure good health and promote well-being
<i>SDG 4</i>	Ensure inclusive, equitable, quality education
<i>SDG 5</i>	Promote gender equality and empower women
<i>SDG 6</i>	Ensure clean, available water and sanitation
<i>SDG 7</i>	Ensure access to sustainable, reliable and affordable energy
<i>SDG 8</i>	Promote sustainable economic growth and employment
<i>SDG 9</i>	Build resilient infrastructure
<i>SDG 10</i>	Reduce inequalities within and among countries
<i>SDG 11</i>	Build sustainable cities and resilient communities
<i>SDG 12</i>	Ensure responsible consumption and production
<i>SDG 13</i>	Promote climate change action
<i>SDG 14</i>	Conservation of oceans, seas and marine ecosystems
<i>SDG 15</i>	Protect and conserve ecosystems
<i>SDG 16</i>	Promote peace and inclusive societies
<i>SDG 17</i>	Strengthen the global partnership for sustainable development