

An analysis of the South African legal framework pertaining to offshore mining: comparative perspectives from Australia

CE Joynt



Orcid.org/0000-0003-3721-3133

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Supervisor: Prof LJ Kotzé
Co-Supervisor: Dr DC Van Der Linde

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Student number: 33394857

ABSTRACT

Due to technological development and overpopulation on earth, non-renewable mineral resources are being depleted at an alarming rate. Investigation of the seabed has revealed the existence of a variety of mineral resources that can be exploited to meet this increasing demand. Research has also revealed that mining activities in the ocean may have detrimental environmental effects on the marine ecological systems and biodiversity in the ocean. For this reason, the proper regulation of offshore mining activities is necessary to ensure that the detrimental effects on the environment are prevented, mitigated and remedied.

Recent interest in South Africa's rich phosphorite deposits on the seabed prompted this investigation into whether a proper regulatory regime exists to regulate offshore mining activities in South Africa's exclusive economic zone.

International environmental law provides the norms, standards and principles that national regulatory frameworks must implement towards the effective protection of the marine environment. To this end, commitments that South Africa has in terms of international environmental law will influence and dictate the content of the national regulatory framework.

Keywords: offshore mining; non-renewable minerals; international environmental law; *UNCLOS*; Australia

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LIST OF ABBREVIATIONS

A&NZ Mar LJ	Australian & New Zealand Maritime Law Journal
AOP	Australian Oceans Policy
CER	Centre for Environmental Rights
CMP	Coastal Management Programme
DEA	Department of Environmental Affairs
DIIS	Department of Industry, Innovation and Science
DISCOL	DISturbance and reCOLonization experiment
DMR	Department of Mineral Resources and Energy
EA	Environmental Authorisation
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMP	Environmental Management Programme
<i>EPBCA</i>	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
GBRMP	Great Barrier Reef Management Plan
GDP	Gross Domestic Product
ICJ	International Court of Justice
IEM	Integrated Environmental Management
IMMS	International Marine Minerals Society
ISA	International Seabed Authority
IUCN	International Union for Conservation of Nature
LEAD	Law, Environment And Development Journal
MAP	Marine Area Plan
MIDAS	Managing Impacts of Deep-seA reSource exploitation
MIT	Massachusetts Institute of Technology
<i>MLRA</i>	<i>Marine Living Resources Act 18 of 1998</i>
MPA	Marine Protected Area
<i>MPRDA</i>	<i>Minerals and Petroleum Resources Development Act 28 of 2002</i>
<i>MSPA</i>	<i>Marine Spatial Planning Act 16 of 2018</i>
<i>MZA</i>	<i>Maritime Zones Act 15 of 1994</i>
NDP	National Development Plan (2030)

NEMA	<i>National Environmental Management Act 107 of 1998</i>
NEMICMA	<i>National Environmental Management: Integrated Coastal Management Act 24 of 2008</i>
NEMPAA	<i>National Environmental Management: Protected Areas Act 57 of 2003</i>
NOAA	National Oceanic and Atmospheric Administration
OCS	<i>Offshore Constitutional Settlement, 1979</i>
OES	One Environment System
OMA	<i>Offshore Minerals Act, 1994</i>
PAJA	<i>Promotion of Administrative Justice Act 3 of 2000</i>
QUT	Queensland University of Technology
S&EIR	Scoping and Environmental Impact Reporting
SAIIA	South African Institute of International Affairs
SAJELP	South African Journal of Environmental Law and Policy
SEMA	Sectoral Environmental Management Act
UNCLOS	<i>United Nations Convention on the Law of the Sea</i>
UNEP	United Nations Environment Programme
WWF-SA	World Wildlife Fund South Africa

1 Introduction

1.1 Background

“Earth provides enough to satisfy every man's need, but not every man's greed.”¹

These words of Mahatma Gandhi are even more relevant today than they were when he spoke them thirty years ago. They especially ring true when considering the world's unrelenting pursuit of economic growth, which inevitably causes the depletion of the earth's non-renewable resources.² Global dilemmas such as over-population and the increasing demand for food, combined with the ever-growing need to expand industries, are adding to this depletion. This results in an escalation of the exploration for additional supplies of natural resources to meet all these needs.³ Due to mineral and phosphate deposits being depleted on *terra firma*, the mining industry is now exploring alternative sources.⁴ It is estimated that by 2030, 15% of the minerals of the world could be extracted from the ocean floor.⁵ This includes, among others, phosphates for the fertilisation of agricultural soil to produce food.

According to a World Wildlife Fund South Africa report,⁶ Dr Samantha Petersen stated that offshore mining poses a serious threat to the stability of ocean systems.⁷ However, the current monetary value of seabed minerals is suspected to be a convincing justification for continuing the exploitation, regardless of the negative impacts on the environment.⁸ The implementation of monitoring and legislative regulations is, therefore, of utmost importance to mitigate and prevent these negative impacts on the environment.

¹ Mahatma Gandhi quoted from Basak *Environmental Studies* 182.

² Castles and Treasury “Economic Growth: Is it Worth Having?” 111-113.

³ Nunan *Governing Renewable Natural Resources* chapter 1.

⁴ MIT 2016 <https://web.mit.edu/12.000/www/m2016/finalwebsite/solutions/phosphorus.html>.

⁵ UNEP 2014 *Environmental Development Elsevier* 52.

⁶ Petersen 2012 <https://www.wwf.org.za/land/?7040/WWF-Bulk-Deep-Sea-Mining-Position-Paper>.

⁷ Petersen 2012 <https://www.wwf.org.za/land/?7040/WWF-Bulk-Deep-Sea-Mining-Position-Paper> 1.

⁸ Earle 2016 <https://mission-blue.org/2016/07/deep-sea-mining-an-invisible-land-grab/>.

1.2 Problem statement

The international seabed comprises about 64% of the total 71% of the world's oceans and is regulated, primarily, by international environmental law standards and provisions.⁹ Amongst these – and most important in relation to offshore mining – is the 1982 *United Nations Convention on the Law of the Sea (UNCLOS)*.¹⁰ International environmental law and its multilateral treaties, such as *UNCLOS*, aim to provide comprehensive guidance to member states.¹¹ An example is the *Mining Code*, which is applicable to all members of *UNCLOS*. The *Mining Code* was created by the International Seabed Authority (ISA),¹² which was established by article 156 of *UNCLOS* to regulate the decisions and procedures for prospecting, exploring and exploiting of minerals on the seabed in international waters.¹³

Seabed regions that are situated within the national jurisdiction and the Exclusive Economic Zone (EEZ) of a country are regulated by the domestic law of that country.¹⁴ Presumably, these domestic laws will be shaped, as they often are, by international law and the commitments such a state has in terms of international law. In relation to South Africa, section 39 of the *Constitution*¹⁵ clearly states that in the interpretation of the Bill of Rights,¹⁶ international law must be considered and foreign law may be

⁹ Kimball 2005 *Secretariat of the Convention on Biological Diversity Montreal Technical Series* iii; Regulations are created by the International Seabed Authority (ISA), which was established under the UN Convention on the Law of the Sea (*UNCLOS*) to regulate deep-seabed mining in international seas.

¹⁰ UN General Assembly, *Convention on the Law of the Sea*, 10 December 1982 (hereafter referred to as *UNCLOS*).

¹¹ See chapter 3 below for discussion on international environmental law.

¹² The International Seabed Authority was established under article 156 of *UNCLOS* (hereafter referred to as the ISA)

¹³ The ISA *Mining Code* is part of the general legal framework that was established by *UNCLOS* (1984) and the additional Implementing Agreement (1994) to regulate deep-seabed mining in international waters. It includes as a whole all the regulations, rules and procedures in terms of prospecting, exploration and extraction of seabed minerals. The *Mining Code* currently includes the *Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area*, 2013; the *Regulations on Prospecting and Exploration for Polymetallic Sulphides in the Area*, 2010 and the *Regulations on Prospecting and Exploration for Cobalt-Rich Crusts*, 2012; The *Mining Code* can be found on the ISA website at <https://www.isa.org.jm/mining-code>.

¹⁴ The EEZ as contemplated in s 7 of the *Maritime Zones Act* 15 of 1994.

¹⁵ The *Constitution of the Republic of South Africa*, 1996 (hereafter referred to as the *Constitution*).

¹⁶ Chapter 2 of the *Constitution* is known as the Bill of Rights.

considered.¹⁷ It is furthermore stated in section 233 of the *Constitution* that every court in South Africa must prefer and interpret any legislation in a way that is consistent with international law.¹⁸ It can therefore be argued that South African legislation will have to comply with current international law and will also have to conform to the dictates of the international law system for offshore mining.

General mining practices in South Africa are currently regulated by the *Mineral and Petroleum Resources Development Act*¹⁹ (MPRDA) and its accompanying *MPRD Regulations*²⁰ as published by the Department of Mineral Resources and Energy (DMR). The *MPRD Regulations* specifically make provision for prospecting and mining non-renewable minerals in South Africa, found both on and offshore.²¹ However, little reference is made specifically to the regulation of offshore mining within the South African EEZ. This lack of detailed legal provision creates the need for research to determine the legal position regarding regulating offshore mining in South Africa.

1.3 Research question

The question that this dissertation seeks to answer is: what is the South African legal framework related to offshore mining; what are its possible deficiencies in terms of *UNCLOS*' regulations; and to what extent could Australian law offer options for reform of the South African framework?

1.4 Objective of the study

The idea to conduct this study originated from a decision by a South African, governmental department regarding an issue that may potentially have serious implications for the marine environment in South Africa. Between 2012 and 2014, the

¹⁷ S 39(1)(b) and 39(1)(c) of the *Constitution*. See para 4.2 on the discussion the *Constitution*.

¹⁸ S 233 of the *Constitution*.

¹⁹ *Mineral and Petroleum Resources Development Act* 28 of 2002 as amended by the *Mineral and Petroleum Resources Development Act* 49 of 2008 (hereafter referred to as the *MPRDA*).

²⁰ GN 26275 in GG 7949 of 23 April 2004 (hereafter referred to as the *MPRD Regulations*); Drafted in terms of s 107 of the *MPRDA*.

²¹ Amendments to the *MPRD Regulations* were published in GN 420 in GG 43172 of 27 March 2020.

Western Cape office of the South African Department of Mineral Resources (DMR) granted prospecting rights in terms of the *MPRDA* to three different offshore mining companies to prospect for phosphate deposits along the South African coast.²² These companies were: Green Flash Trading 251 (Pty) Ltd (GFT 251), Green Flash Trading 257 (Pty) Ltd (GFT 257), and Diamond Fields International Ltd (DFI Ltd). The prospecting rights covered an area of more than 10% of the South African EEZ, and more than 150 000 km² of the marine environment. Prior to the licences being granted, the World Wildlife Fund South Africa (WWF-SA) released a report detailing the negative environmental and socio-economic impacts of such a venture.²³ Notwithstanding this report and the potential negative impact on the environment, the licence applications were approved. These prospecting rights have now lapsed, and both GFT 251 and GFT 257 announced in a public statement that it is not financially viable to continue prospecting.²⁴

In addition to this, Belton Park Trading 127 (Pty) Ltd (BPT127) lodged a new application on 17 December 2019 with the DMR for the approval of prospecting rights relating to an offshore area approximately 180 km north of Cape Town.²⁵ The scope of prospecting mainly includes diamonds, but the report also mentions heavy minerals, industrial minerals and precious metals, amongst others.²⁶ The affected area incorporates an approximate area of 20,4 ha in total. The report was made available for public comment from 10 January 2020 to 10 February 2020. These areas have been assigned and labelled by the South African government for offshore mining and as stated in the objectives of Operation Phakisa, the yields derived from this could substantially contribute to the South African economy.²⁷

²² CER 2019 <https://cer.org.za/safeguard-our-seabed/marine-phosphate-mining/fact-sheets>.

²³ Petersen 2012 <https://www.wwf.org.za/land/?7040/WWF-Bulk-Deep-Sea-Mining-Position-Paper>.

²⁴ Roux and Horsfield "Review of National Legislations Applicable to Seabed Mineral Resources Exploitation" in *The Law of the Seabed* 305.

²⁵ See Scoping report at <https://sahris.sahra.org.za/sites/default/files/additionaldocs/IMD05%20Draft%20Scoping%20Report.pdf> (hereafter referred to as the Scoping report).

²⁶ See Scoping Report *Introduction* 1; Industrial minerals include phosphates as described in chapter 2 of this study.

²⁷ Operation Phakisa *Unlocking the Economic Potential of South Africa's Oceans* 6. Operation Phakisa is a South African governmental initiative, implemented to promote and fast track critical economic development.

Operation Phakisa sets out the South African government's focus on growth and development of the ocean's economy and is part of measures to be implemented to fast-track the country's National Development Plan (NDP 2030).²⁸ Moreover, it is common knowledge that the 2020 Covid-19 pandemic adversely impacted economic stability around the world. South Africa is no exception. In fact, the NDP 2030 Agenda for sustainable development has never been more urgent, critical and relevant as now during the ongoing economic recovery following the pandemic.²⁹ This suggests that Operation Phakisa's objectives of growing and developing the ocean economy might even be expedited to achieve its goals before 2030.

Considering the potentially severe environmental impacts of increased mining, it is pertinent to analyse and inspect the current status, content and objectives of the existing South African offshore mining framework. This must be considered in light of any international environmental law commitments that South Africa may have, in order to determine the extent to which this framework caters for environmental protection. Under the Commonwealth's *1979 Offshore Constitutional Settlement* ³⁰ (*OCS*), a common mining code was established to regulate the mining of offshore minerals specifically for the Commonwealth states.³¹ In terms of this mining code, several legislative instruments and regulations have since been promulgated.³² One example is the *Offshore Minerals Act* ³³ (*OMA*).

The South African environmental and mining regime could benefit from researching the environmental legal system of a developed mining economy like Australia. Australia is globally considered as a leading mining country and exporter in the mined-minerals

²⁸ National Planning Commission date unknown
<https://www.gov.za/sites/default/files/Executive%20Summary-NDP%202030%20-%20Our%20future%20-%20make%20it%20work.pdf>.

²⁹ Fourie 2020 <http://www.ipsnews.net/2020/05/south-africa-must-respond-lead-covid-19-sdgs/>.

³⁰ *Offshore Constitutional Settlement*, 1980; (hereafter referred to as the *OCS*).

³¹ Australian Government DIIS 2019 <https://archive.industry.gov.za>.

³² This includes, amongst others, the *Offshore Minerals Act* 1994, the *Offshore Minerals (Royalty) Act* 1981 and the *Offshore Minerals (Exploration Licence Fees) Act* 1981, *Minerals (Submerged Lands) Act* 1981 (Cth), *Minerals (Submerged Lands) (Production Licence Fees) Act* 1981 (Cth), *Minerals (Submerged Lands) (Registration Fees) Act* 1981 (Cth) and the *Minerals (Submerged Lands) (Works Authority Fees) Act* 1981 (Cth).

³³ *Offshore Minerals Act*, 1994 (Cth); (hereafter referred to as the *OMA*).

market.³⁴ It is therefore not surprising that the mining sector in Australia is considered to be the cornerstone of its economy, and that the country therefore has comprehensive mining legislation and regulations.³⁵ A study of Australian national offshore mining instruments and key Australian environmental law approaches may provide insight and suggestions towards best environmental management practices and approaches for South Africa.

The rationale for this study is based on the hypothesis that the South African mining law framework does not adequately regulate the environmental aspects of offshore mining. The primary justification of this research is therefore to determine whether this is the case and, if so, to provide suggestions on how South African environmental law may be reformed to improve the regulation of offshore mining within its jurisdiction and its EEZ.

1.5 Research methodology

This study takes the form of a literature review. It is primarily a desk-based theoretical analysis and makes use of a qualitative method with a comparative approach. This includes comprehensive meta-analytical, conceptual, and theoretical information as well as normative concepts to determine outcomes. Information is gathered from both primary and secondary sources of environmental law. Specific focus is placed on government documents, literature and electronic sources such as journals and academic textbooks.

1.6 Structure of the discussion

This dissertation is divided into five chapters.

³⁴ Parliament of Australia 2010
https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BriefingBook43p/mineralssector.

³⁵ Parliament of Australia 2010
https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BriefingBook43p/mineralssector.

Chapter 2 briefly summarises and contextualises the concept of offshore mining and indicates the difference between phosphate mining within a country's EEZ and international deep-seabed mining. The chapter briefly focuses on the basic methods applicable to mining seabed minerals and provides a summary of the current research available on the potential environmental impacts of offshore mining. This is supplemented with academic analysis both supporting and opposing offshore mining. The purpose of this chapter is to determine whether it is necessary to be concerned about the environmental consequences of offshore mining in South Africa.

Chapter 3 analyses and discusses international environmental law as it is relevant to offshore mining. Provisions of *UNCLOS* pertaining to offshore mining are discussed to provide context and background to the main theme of the study. The chapter gives an overview of the international environmental protection standards that could be important for the creation of domestic instruments in South Africa. The purpose of this chapter is to determine whether the South African legal framework for offshore mining, as discussed in the following chapter, complies with international law standards applicable to the protection of the environment.

Chapter 4 is the main focus of this dissertation and deals with South African national environmental law. This chapter includes a discussion of domestic legislation, policies and regulations as they relate to offshore mining, as well as how they relate to the environmental impacts of offshore mining. This chapter begins with an overview of the environmental right provided by the *Constitution*. It then offers a discussion of the *National Environmental Management Act*³⁶ (*NEMA*) and the *MPRDA*, as directly applicable to the regulation of offshore mining in South Africa. Lastly, it discusses legislation which is applicable to the regulation of the environmental aspects relating to the marine environment. This includes the *Maritime Zones Act*³⁷ (*MZA*), the *National Environmental Management: Integrated Coastal Management Act*³⁸ (*NEMICMA*), the

³⁶ 107 of 1998 (hereafter referred to as the *NEMA*).

³⁷ 15 of 1994 (hereafter referred to as the *MZA*).

³⁸ 24 of 2008 (hereafter referred to as the *NEMICMA*).

*Marine Spatial Planning Act*³⁹ (*MSPA*), the *National Environmental Management: Protected Areas Act*⁴⁰ (*NEMPAA*), and the *Marine Living Resources Act*⁴¹ (*MLRA*).

This is done to demonstrate the current status of South Africa's offshore mining practices, and to shed some light on possible strengths and weaknesses that may be found within the framework. The ultimate aim is to determine whether the current South African offshore mining framework is compliant with the international environmental law standards that are discussed in chapter 3.

Chapter 5 investigates the current national legislative framework regarding offshore mining in Australia. The chapter focuses on two aspects. First, it examines the provisions of the national legislative framework instrument, the *OMA*. The *OMA*, an instrument created for the sole purpose of regulating offshore mining in Australia, will be compared to the *MPRDA*, which is applicable in South Africa. Secondly, the chapter investigates relevant Australian environmental law concepts and perspectives to determine how they might contribute to the South African environmental law framework concerning offshore mining.

Chapter 6 concludes the study with a summary of the findings of the research.

1.7 Scope and limitations

The scope of this study involves environmental law provisions as they directly regulate offshore mining. In terms of South African environmental law, this includes acts and regulations promulgated to regulate administrative issues relating to the mining industry as well as to control and regulate the conservation of areas affected by mining practices. Common law rules will not be discussed in this study, but merely referred to as contextual background if and where applicable. As a result of the space and scope

³⁹ 16 of 2018 (hereafter referred to as the *MSPA*)

⁴⁰ 57 of 2003 (hereafter referred to as the *NEMPAA*).

⁴¹ 18 of 1998 (hereafter referred to as the *MLRA*).

limitations, this dissertation will not discuss in detail the specific state- and territory-related legislation that was drafted in response to the Australian national framework.

Further to this, the study is limited to research of the regulation of offshore mining within the EEZs of the two countries. Deep-seabed mining as applicable to mining practices beyond the continental shelf areas is regulated by international law and this will only be referenced as it applies to offshore mining within a country's EEZ. The types of seabed minerals found within a country's EEZ is limited due to their occurrence at certain depths. This study is therefore limited to the minerals mainly found within the South African EEZ and mentions other types of minerals found in the deep ocean only for conceptualisation purposes.

2 Offshore mining in perspective

2.1 Introduction

The mining of offshore oil and gas, marine diamonds and coastal sand has been ongoing since the early 1900s.¹ The mining of other deep-sea minerals has only been at the forefront of discussions for more or less the last 40 years.² In the past, offshore mining was hampered by the high cost that exploration projects incurred,³ and the difficulty to access the deep ocean floor.⁴ However, various new technological advances during the last 15 years – especially in terms of advanced mining equipment – have overcome many of these obstacles.⁵ This, together with the fact that valuable commercial metals and minerals are found in abundance on the ocean floor, resulted in many new financiers all over the world backing ventures in offshore mining.⁶

To develop effective and comprehensive environmental laws to regulate the offshore mining industry, it is necessary to understand the significance and nature of offshore mining.⁷ It is important to distinguish between deep-seabed mining and the type of offshore mining that occurs within the EEZ of a state. *UNCLOS* prescribes the limits of coastal state jurisdiction in terms of territorial waters as the area from the low water mark line (sea baseline)⁸ up to 12 nautical miles into the ocean.⁹ A state has exclusive sovereignty over all the natural resources within its territorial waters.¹⁰ The EEZ extends beyond and adjacent to the territorial sea up to 200 nautical miles from the

¹ Baker *et al* "Chapter 23: Offshore Mining Industries" 363; Anonymous 2010 <https://www.offshore-energy.biz/offshore-drilling-history-and-overview/>.

² Cronan *Handbook of Marine Mineral Deposits* 1.

³ Kimani 2015 *LEAD* 94.

⁴ Sharma *Deep-Sea Mining* 5.

⁵ The World Bank Draft for Discussion date unknown <http://pubdocs.worldbank.org/en/125321460949939983/Pacific-Possible-Deep-Sea-Mining.pdf> 9.

⁶ The World Bank Draft for Discussion date unknown <http://pubdocs.worldbank.org/en/125321460949939983/Pacific-Possible-Deep-Sea-Mining.pdf> 18; Global Ocean Commission Policy Options Paper number 5 *Strengthening deep seabed mining regulation* 2.

⁷ Tanielu 2013 *UN Oceans and the Law of the Sea* 36.

⁸ Article 5 of *UNCLOS*; normal baseline is the low water mark.

⁹ Article 3 of *UNCLOS*.

¹⁰ Article 55 and 56 of *UNCLOS*.

coastal baseline.¹¹ Mining within the territorial waters and EEZ of a state is referred to in this study as offshore mining. Deep-seabed mining in the high seas occurs beyond the continental shelf point of a country and outside the boundaries of the EEZ in international waters.

This chapter seeks to elaborate the fundamentals of offshore mining by briefly discussing the differences between the various types of seabed mining and particularly by reviewing the methods used for offshore mining and the reasons for these practices. The rationale for this chapter is to determine whether it is necessary to be concerned about such mining practices and specifically to evaluate whether there is a need for the regulation of offshore mining.

2.2. Types of mineral deposits

Minerals in and on the seabed occur in different geological places and in various forms.¹² Marine mining companies predominantly focus on four types of mineral deposits: manganese nodules, seafloor massive sulphides, cobalt crusts, and phosphide deposits.¹³

2.2.1 Polymetallic (manganese) nodules

Polymetallic (manganese) nodules are found at depths of more than 3000m on the ocean floor,¹⁴ particularly on the abyssal plains.¹⁵ These two-dimensional, potato-sized nodules are formed by hydrothermal and volcanic sources by a process of precipitation of metallic particles in the seawater.¹⁶ These nodules contain small but significant amounts of a broad variety of metals and minerals such as nickel, copper, cobalt,

¹¹ Article 55 and 57 of *UNCLOS*.

¹² IUCN Issues Brief *Deep Sea Mining* 1.

¹³ Global Ocean Commission Policy Options Paper number 5 *Strengthening deep seabed mining regulation* 2.

¹⁴ Sharma *Deep-Sea Mining* 37.

¹⁵ Hein 2016 *Encyclopaedia of Marine Geosciences* 408; Abyssal plains are located between the foot of a continental rise and a mid-ocean ridge on the ocean floor at a depth of 3000 to 6000 metres.

¹⁶ Global Ocean Commission Policy Options Paper number 5 *Strengthening deep seabed mining regulation* 2.

lithium, molybdenum, zirconium and other rare elements.¹⁷ These are essential for the manufacture of goods for green energy, vehicles, military operations, as well as for the creation of infrastructure.¹⁸ Currently, marine mining companies are showing significant interest in the Clarion-Clipperton Zone in the eastern Pacific Ocean, due to the rich mineral deposits found here.¹⁹ The estimated 62 billion tonnes of manganese nodules in this zone are situated at a depth of 3500m to 5500m below sea level and represent a potential return of 17500 million tonnes of manganese and approximately 761 million tonnes of nickel, amongst others.²⁰

It must, however, be noted that these nodules grow extremely slowly, at a rate of between several millimetres to several centimetres per million years, and have been reported to provide the only hard substrate-type habitat for certain marine species occurring at these depths.²¹ Due to this slow growth rate and the extremely long timeframe of regeneration, removal of these habitats often results in irreparable harm and significant and permanent biodiversity loss of certain sponges, molluscs nematode worms and crustacean larvae.²²

2.2.2 Polymetallic sulphides

Polymetallic sulphides – otherwise known as seafloor massive sulphites – are found on the seabed at a depth of 2000m, along the earth's tectonic plate boundaries.²³ First documented in 1977, these seafloor massive sulphides form over thousands of years by hydrothermal vents or sulphide chimneys that discharge extremely hot water from hot springs with temperatures over 350 degrees Celsius.²⁴ It is estimated that these vents are likely to occur every 100 kilometres on the mid-oceanic ridge system.²⁵ These

¹⁷ Hein 2020 *Nature Reviews Earth and Environment* 158.

¹⁸ Hein 2020 *Nature Reviews Earth and Environment* 158.

¹⁹ Sharma *Deep-Sea Mining* 37.

²⁰ Global Ocean Commission Policy Options Paper number 5 *Strengthening deep seabed mining regulation* 2.

²¹ Miller et al 2018 *Frontiers in Marine Science* 3; MIDAS 2016 https://www.eu-midas.net/sites/default/files/downloads/MIDAS_research_highlights_low_res.pdf.

²² Miller et al 2018 *Frontiers in Marine Science* 3.

²³ UNEP 2014 *Environmental Development Elsevier* 53.

²⁴ UNEP 2014 *Environmental Development Elsevier* 53.

²⁵ Herzig and Hannington 1995 *Ore Geology Reviews Elsevier* 96.

deposits contain lead, copper, silver, gold, and zinc, amongst other minerals, and are located predominantly in areas within the national jurisdiction of states.²⁶

2.2.3 Cobalt-rich ferromanganese crusts

Cobalt crusts are found at water depths of about 400m to 7000m below sea level, with the thickest cobalt-rich crust occurring at depths of about 800m to 2500m.²⁷ The precipitation of minerals on the sides and tops of seamounts form cobalt crusts, which include minerals such as iron, nickel, copper, and platinum.²⁸ Predominantly found in the Magellan seamounts in the Pacific Ocean but with a significant presence off South African shores, these crusts are considered the slowest-growing earth material, accumulating only one molecular layer every one to three months.²⁹

2.2.4 Phosphorites

The most important type of mineral deposit for the purpose of this study is phosphorites, also known as phosphates. Phosphorites consist of calcium phosphate and are found at water depths of 2m to 600m below sea level, usually along the western coasts of continents.³⁰ Phosphorites are mined to use as fertiliser in agricultural practices throughout the world.³¹

This is the type of deposit that is found along the South African coast for which the Western Cape office of the South African DMR granted prospecting rights to three different offshore mining companies between 2012 and 2014.³² Three main types of

²⁶ UNEP 2014 *Environmental Development Elsevier* 53.

²⁷ Cronan *Handbook of Marine Mineral Deposits* 239 - 279.

²⁸ Global Ocean Commission Policy Options Paper number 5 *Strengthening deep seabed mining regulation* 3.

²⁹ Global Ocean Commission Policy Options Paper number 5 *Strengthening deep seabed mining regulation* 3; Manheim 1986 *Science* 600; See statement of Dr Rahul Sharma at South Africa's Council for Geoscience Annual Conference 2017, found at <https://www.engineeringnews.co.za/article/proponents-see-glistening-future-in-seabed-mining-but-environmentalists-fret-2017-03-24>.

³⁰ Global Ocean Commission Policy Options Paper number 5 *Strengthening deep seabed mining regulation* 3.

³¹ Rona 2008 *Ore Geology Reviews Elsevier* 624.

³² See para 1.4 above.

phosphates are found on the South African EEZ seabed. These include rock phosphorite, pelletal phosphorite and concretionary phosphorite.³³ These deposits occur on the continental shelf from Cape Town to Port Elizabeth, and on the western coast from Cape Town to Lambert's Bay.

2.3 Methods used for offshore and deep-seabed mining

Bulk marine sediment mining is the collection of minerals and metals by way of stripping the ocean floor using enormous robotic cutting machines.³⁴ These robotic machines consist of three components: a horizontal component which collects material on the seafloor, a vertical component that sucks the collected material to the surface, and a surface component situated on a ship which separates the usable material from the excess water and other particles.³⁵

Trailing suction hopper dredgers are one of the most common prototypes of robotic machines available. These dredgers use remotely-operated mining machines called crawlers or subsea sediment extraction devices that excavate the ocean floor using water drills. The slurry mixture is dewatered and waste is pumped back into the ocean.³⁶ The method involves dredging, then excavating, and thereafter sucking up the top 3m layer of sediment from the seafloor.³⁷ The dredge head is dragged over the seafloor to cut a trench, after which sediment – and anything living inside the trench – is sucked up through a tube. This is dewatered and distilled by separating larger sediment from smaller and finer particles. After the distillation is completed, the water and fine particles are released back into the water column, creating an enormous dust cloud in the water.³⁸

³³ CER 2016 https://cer.org.za/wpcontent/uploads/2016/06/CER_Factsheet1_web.pdf.

³⁴ World Ocean Review date unknown
https://worldoceanreview.com/wpcontent/downloads/wor3/WOR3_en_chapter_2.pdf 54.

³⁵ IUCN Issues Brief *Deep Sea Mining*.

³⁶ CER 2020 <https://cer.org.za/safeguard-our-seabed/marine-phosphate-mining/what-is-bulk-marine-sediment-mining>.

³⁷ CER 2020 <https://cer.org.za/safeguard-our-seabed/marine-phosphate-mining/what-is-bulk-marine-sediment-mining>.

³⁸ See Miedema *Dredging Processes, The Loading Process of a Trailing Suction Hopper Dredge* for the full operational process of the hopper dredge.

An example of such a dredge is the Cristobal Colon, property of Namibian Marine Phosphate (Pty) Ltd which is expected to be used along the Namibian Coast in the Sandpiper Project.³⁹ It has a dredging speed of approximately one to two knots and consists of an 11m-diameter head which can cut a trench of up to 0.75m deep. The head's powerful cutting teeth crush hard sediment before suctioning it into the vertical tube, which is connected to the transport vessel on the surface.⁴⁰ In all likelihood, phosphate mining within the South Africa EEZ will involve this type or a similar type of technology.⁴¹

2.4 Perceived benefits of offshore mining

The main justification for offshore mining can be found in the promise of growth for the so-called "blue economy".⁴² The development of the blue economy is used by many states to re-energise their economies, to create jobs and to increase their "blue GDP (Gross Domestic Product)".⁴³ Another argument in favour of offshore mining pertains to the long-term decline of the quality and quantity of terrestrial minerals compared to the availability of a much higher grade of minerals that is found on the seabed.⁴⁴

Countries may further monopolise activities within the EEZ to their benefit,⁴⁵ and due to the availability of phosphates on the seafloor, it may seem a lucrative venture. As phosphorus is one of the three essential macronutrients needed by plants to thrive, it is an important element in agriculture and food production. More than 80% of

³⁹ Benkenstein 2014 *SAIIA Policy Briefing* 3; CER 2020 <https://cer.org.za/safeguard-our-seabed/marine-phosphate-mining/what-is-bulk-marine-sediment-mining>; Judgment from the Namibian High Court on the review application for the Sandpiper Project brought by the Confederation of Namibian Fisheries Associations and three other applicants is expected in March 2021.

⁴⁰ Currie 2016 *CER* 1.

⁴¹ CER 2016 https://cer.org.za/wpcontent/uploads/2016/06/CER_Factsheet1_web.pdf.

⁴² The World Bank Group *Toward a Blue Economy* 19.

⁴³ Wenhai et al 2019 *Frontiers in Marine Science*. Blue GDP refers to the gross economic product derived from marine resources.

⁴⁴ The World Bank Draft for Discussion date unknown <http://pubdocs.worldbank.org/en/125321460949939983/Pacific-Possible-Deep-Sea-Mining.pdf>.

⁴⁵ Article 55 and 56 of *UNCLOS*.

fertilisers used in agriculture contain phosphorous.⁴⁶ This is critical for food security when terrestrial phosphate supplies are diminished.

Whilst being cognisant of the motivations in favour of offshore mining, the importance of environmental sustainability and the need to balance this against the requirement for economic growth and food production should not be ignored.

2.5 Perceived negative impacts of offshore mining

Although the possible consequences of mining the seabed will depend on many factors such as strategies and site-specific mineral deposits, knowledge of the general environmental impacts are of utmost importance to determine the need for regulation and the type of regulation required. In many instances, the technology developed to mine the seabed has not been properly tested,⁴⁷ and the knowledge of the actual consequences is limited.⁴⁸ In-depth studies on oceanography, biogeochemistry, the geology of the sites and the specific mining method will be needed to properly predict the ecological and economic consequences of mining the seabed.⁴⁹ The lack of knowledge in these areas is a major concern in terms of conservation of the oceans.

Scientists have been conducting studies relating to the disturbance of the seabed by mining activities and the potential recovery of the seabed. One such three-year study was conducted and completed in October 2016. The German project DISCOL (DISturbance and reCOLonization experiment) and its follow-up study, MIDAS (Managing Impacts of Deep-seA reSource exploitation)⁵⁰ were conducted as experiments to ascertain the potential impacts on biodiversity. It was found that seafloor habitats take decades to recover following any disturbance. The impacts of long-term mining on the seabed may be evident for even longer periods. The outcome of the studies suggested that a precautionary approach is necessary, as small-scale

⁴⁶ CER 2016 https://cer.org.za/wpcontent/uploads/2016/06/CER_Factsheet1_web.pdf.

⁴⁷ Chin and Hari 2020 *Deep Sea Mining Campaign and Mining Watch Canada* 4.

⁴⁸ Chin and Hari 2020 *Deep Sea Mining Campaign and Mining Watch Canada* 34.

⁴⁹ WWF Report *Bulk Deep Sea Mining* 1.

⁵⁰ MIDAS 2016
https://www.eu-midas.net/sites/default/files/downloads/MIDAS_research_highlights_low_res.pdf.

experiments cannot accurately predict the exact outcome that these practices might have on the seabed environment.⁵¹

Hydrothermal vents contain many unique species that are exclusive to these habitats.⁵² Research shows that approximately 300 new species have been discovered around these hydrothermal vents since 1977.⁵³ Currently, on average, ten new species are found every ten days.⁵⁴ Over 80% of these species are identified as endemic, which means that each vent has a unique ecosystem.⁵⁵

Apart from the destruction of seabed organisms sucked up into the dredges,⁵⁶ the flattening and excavation of the seabed removes many habitats and corals and sponges, and the building blocks of marine ecosystems are thus often destroyed. These habitats, that take millions of years to develop, could possibly be lost forever. In a proposed solution to this problem, it was suggested that the sea life should be transferred to an alternative habitat before dredging.⁵⁷ However, the effects of this on other ecosystems have not yet been tested.⁵⁸

Offshore mining is also a major source of pollution in the ocean. It can create different types of waste and poses a threat of increased spillage risks.⁵⁹ Furthermore, the offshore mining process creates waste, known as tailings. These tailings are the separated non-mineral component which is dumped back into the sea and which may alter the ocean's water composition.⁶⁰ The Solwara 1 Project for deep-sea mining could create tailings as great as 130 kilotons of unconsolidated cement and 115 kilotons of waste rock, which would be pumped back into the ocean.⁶¹ This would inevitably

⁵¹ MIDAS 2016 https://www.eu-midas.net/sites/default/files/downloads/MIDAS_recommendations_for_policy_lowres.pdf.

⁵² CER 2016 https://cer.org.za/wpcontent/uploads/2016/06/CER_Factsheet1_web.pdf.

⁵³ Hunter, Singh and Aguaon 2018 *Harvard Environmental Law Review*.

⁵⁴ Hunter, Singh and Aguaon 2018 *Harvard Environmental Law Review* fn 21.

⁵⁵ Tunnicliffe 1992 *PALAIOS JSTOR* 338.

⁵⁶ Heemstra 1994 *JLB Smith Institutes of Ichthyology*.

⁵⁷ Allsopp et al 2013 *Greenpeace Research Laboratories Technical Report 2*.

⁵⁸ Allsopp et al 2013 *Greenpeace Research Laboratories Technical Report 2*.

⁵⁹ Bolong 2016 *Tulane Journal of International & Comparative Law* 142.

⁶⁰ Bolong 2016 *Tulane Journal of International & Comparative Law* 142.

⁶¹ Solwara 1 is located approximately 30 km from the nearest coast (New Ireland Province) and fifty kilometres north of the international Port of Rabaul.

smother the benthic communities in the area.⁶² Little is known about the consequences associated with the breeding, spawning and feeding of species in poor quality seawater.⁶³ Reduced sunlight due to dust plumes, oxygen depletion, organic fallout and the presence of heavy metals and radioactive materials in the seawater may influence sea life and photosynthesis of plants in ways not yet known.⁶⁴ Scientists suggest that approximately ten to 15 years of further research are potentially necessary for us to fully understand the consequences to ecosystems affected by offshore mining.⁶⁵ Another concern relates to noise pollution that deep-sea mining operations cause due to it interfering with the communication of deep-diving whales and other sea life using acoustic forms of navigation.⁶⁶

In addition to the considerations of the impact on the environment in areas to be mined, another concern is the possible impact on food security, which relates to the socio-economic aspect of offshore mining.⁶⁷ Mining the seabed within the EEZs of countries can influence the availability of fish and can detrimentally impact local people's livelihoods, especially subsistence fishers.⁶⁸

It is also important to anticipate the effect of mining practices in general on the inevitable depletion of non-renewable resources. These minerals cannot be regenerated and if alternative resources are not found, the effect may well be complete depletion of precisely those resources that we deem essential for technological development and life sustainability.

⁶² Bolong 2016 *Tulane Journal of International & Comparative Law* 142.

⁶³ Allsopp *et al* 2013 *Greenpeace Research Laboratories Technical Report* 3.

⁶⁴ CER 2016 https://cer.org.za/wpcontent/uploads/2016/06/CER_Factsheet1_web.pdf.

⁶⁵ Allsopp *et al* 2013 *Greenpeace Research Laboratories Technical Report* 3.

⁶⁶ Allsopp *et al* 2013 *Greenpeace Research Laboratories Technical Report* 3; CER 2016 https://cer.org.za/wpcontent/uploads/2016/06/CER_Factsheet1_web.pdf 2; Pelagic and demersal organisms refer to the zone that these organisms occur. Pelagic refers to organisms not near the bottom of the ocean and far from the shore. Demersal organisms are close to the bottom and at the coral reefs.

⁶⁷ Chin and Hari 2020 *Deep Sea Mining Campaign and Mining Watch Canada* 3.

⁶⁸ Allsopp *et al* 2013 *Greenpeace Research Laboratories Technical Report* 3.

2.6 The South African context

Although the licences and rights that were granted by the South African government in 2012 and 2014 are merely for prospecting and not (yet) for the actual extraction of minerals, the goal may ultimately be to mine and extract minerals in the area in the future. Prospecting is, by definition, the precursor to mining. In an application document for one of the prospecting applications, it was stated by the applicant that the offshore deposits available along the South African coast are a major resource with an important link to food supply as fertiliser for agriculture.⁶⁹ The main argument to advance the approval of the application was the ever-increasing demand for phosphates in South Africa and the diminishing supply thereof.⁷⁰ The areas provided for in the prospecting zones included about 10% of the South African EEZ. The allocated 150 000 km² overlaps with most of the commercial and local fishing areas as well as critically endangered ecosystems and habitats.⁷¹

Challenging the argument of diminishing supplies of phosphates, a Centre for Environmental Rights (CER) report⁷² indicates that South Africa is not experiencing a huge shortage of phosphates, but instead is criticised for the over-use of inorganic fertilisers.⁷³ For instance, South Africa has the fifth largest phosphate reserve in the world and contributes about 2% of the world's reserves at the moment.⁷⁴ Furthermore, a rough estimation reveals that South African terrestrial mines will likely be able to produce phosphates for the next 220 years.⁷⁵ Everything considered, a key question then emerges: how lucrative is seabed phosphate mining for the South African economy?

⁶⁹ Vidima and von Blottnitz 2016 <https://cer.org.za/wp-content/uploads/2016/08/Assessing-the-Desirability-of-Marine-Phosphate-WEB.pdf> 3.

⁷⁰ Vidima and von Blottnitz 2016 <https://cer.org.za/wp-content/uploads/2016/08/Assessing-the-Desirability-of-Marine-Phosphate-WEB.pdf> iv.

⁷¹ CER 2019 <https://cer.org.za/safeguard-our-seabed/marine-phosphate-mining/background>.

⁷² CER 2019 <https://cer.org.za/safeguard-our-seabed/marine-phosphate-mining/background>.

⁷³ Vidima and von Blottnitz 2016 <https://cer.org.za/wp-content/uploads/2016/08/Assessing-the-Desirability-of-Marine-Phosphate-WEB.pdf> iv.

⁷⁴ Muravha 2018 <http://www.dmr.gov.za/LinkClick.aspx?fileticket=PClz-cRGkyg%3D&portalid=0197>.

⁷⁵ Vidima and von Blottnitz 2016 <https://cer.org.za/wp-content/uploads/2016/08/Assessing-the-Desirability-of-Marine-Phosphate-WEB.pdf> 15.

According to a study by Vidima and Von Blottnitz,⁷⁶ when considering the environmental footprint of offshore mining, South Africa should close the possible phosphate gap with other lucrative ventures, including alternative phosphate sources, instead of engaging in offshore mining.⁷⁷

2.7 Conclusion

The purpose of this chapter was firstly to offer some background information about offshore mining, and secondly to determine whether it is necessary to be concerned about the environmental impact of offshore mining along the South African coast. Taking into consideration the various arguments for and against offshore mining, it seems to be a contentious issue. On balance, the environmental impacts of such mining practices seem to be a critical concern which must be properly regulated. Nonetheless, various academic opinions clearly state that cognisance should be taken of all the factors to sustain a balance between economic growth and a healthy environment. In light of the possible danger to environmental sustainability, regulation of this practice is necessary. It is therefore no surprise that a pertinent issue that arises with respect to mining the South African seabed is the need for a proper legal framework to regulate and manage the extent and consequences of offshore mining.

⁷⁶ Vidima and von Blottnitz 2016 <https://cer.org.za/wp-content/uploads/2016/08/Assessing-the-Desirability-of-Marine-Phosphate-WEB.pdf>

⁷⁷ Vidima and von Blottnitz 2016 <https://cer.org.za/wp-content/uploads/2016/08/Assessing-the-Desirability-of-Marine-Phosphate-WEB.pdf> 15.

3 International regulatory frameworks

3.1 Introduction

According to Pring,¹ technological advancements caused the international mining industry to enter a new era, which is characterised by increased regulation.² According to international environmental law, states have both rights and responsibilities where the protection of the environment is concerned.³ These rights and responsibilities, in terms of offshore mining, are provided by *UNCLOS*, which influences the direction that legislative instruments for offshore mining within national jurisdictions should take.⁴

UNCLOS is a multilateral, international treaty which came into force in 1994 to codify customary international law and serve as a framework to regulate all aspects pertaining to the ocean. It is considered the most advanced, binding international law instrument in relation to the marine environment.⁵ To regulate deep-seabed mining in international waters, the ISA – the governing body established under *UNCLOS* – created the *Mining Code*.⁶ The purpose of the *Mining Code* is to regulate the decisions and procedures for prospecting, exploring and exploiting minerals on and in the international seabed. Most importantly for the purposes of this study, *UNCLOS* makes provision for the regulation of offshore mining within a national jurisdiction. South Africa ratified *UNCLOS* on 23 December 1997 to become a member state. Therefore, all the provisions of *UNCLOS* in terms of offshore mining and the conservation of the environment are binding and enforceable on the South African government.

This chapter acts as a snapshot of the international commitments that South Africa must abide by in terms of the regulation of its EEZ and the protection of the marine

¹ Pring, Otto and Naito 1999 *Journal of Energy and Natural Resources Law*.

² Pring, Otto and Naito 1999 *Journal of Energy and Natural Resources Law* 39.

³ Strydom *International Law* 530.

⁴ Glazewski and Posnik 2000 *JSAIMM* 212; Lawson 2015 <http://www.truth-out.org/news/item/34206-global-opposition-is-mounting-against-the-latest-environmental-abuse-deep-sea-mining?>

⁵ Carleton Ray and McCormick-Ray *Marine Conservation: Science, Policy and Management* 62.

⁶ The *Mining Code* can be found on the ISA website at <https://www.isa.org.jm/mining-code>.

environment.⁷ This provides a contextual background of the international environmental law obligations that the South African government – and, by extension, its citizens – have in terms of the regulation of offshore mining.

3.2 UNCLOS

UNCLOS is a public international law instrument, which acts as a framework that governs all aspects of ocean management in the world. Its applicability to this study is twofold. Firstly, it specifies coastal states' geographic jurisdictions in the world's oceans. Secondly, it creates a dynamic international legal framework and comprehensive standards for the conservation and protection of the oceans, including the seabed in international waters, as well as within state jurisdiction.⁸

3.2.1 State jurisdiction, sovereignty and sovereign rights

UNCLOS divides the earth's oceans into six zones, with varying degrees of state jurisdiction and sovereignty.⁹ One of the most significant and widely-accepted international environmental law norms refer to a state's sovereignty over the natural resources found within its jurisdiction.¹⁰

In terms of articles 2(1), 56(1)(a) and 77(1) of *UNCLOS*, a state has an exclusive sovereign right to explore and exploit the living and non-living natural resources on the seabed and the subsoil of the continental shelf.¹¹ In addition, absolute sovereignty within a state's territory and owning sovereign rights within the EEZ to natural resources creates certain obligations for states.¹²

⁷ A multitude of international environmental law instruments commits South Africa to the protection of the environment.

⁸ Harrison *Saving the Oceans through Law* 304; Article 2(1)(a) of the Vienna Convention on the Law of Treaties (1969) describes the definition of a treaty.

⁹ See para 2.1 above; Part V of *UNCLOS*; This includes the Territorial Sea, the Contiguous Zone, EEZ, the Continental Shelf, the High Seas and the Area.

¹⁰ Hoagland et al 2019 *Encyclopaedia of Ocean Sciences Elsevier* 527.

¹¹ Article 2(1), 56(1)(a) and 77(1) of *UNCLOS*.

¹² Hoagland et al 2019 *Encyclopaedia of Ocean Sciences Elsevier* 526.

3.2.2 The state's duty to protect the marine environment

It is clearly stated in principle 21 of the Stockholm Declaration¹³ that states have a sovereign right to exploit their own resources, but also that they have an obligation to ensure that environmental damage is not caused by any activities within, as well as beyond, the limits of their jurisdiction. *UNCLOS* implements this principle through its article 193, by declaring that states may exploit the ocean's resources in accordance with their sovereign right and the duty to protect the marine environment.¹⁴

A state's general obligation to protect the marine environment is provided under article 192 of *UNCLOS*, which asserts that all states have an overarching obligation to implement measures to protect and conserve all parts of the marine environment. Article 194 of *UNCLOS* includes measures to protect and preserve rare and fragile ecosystems and their habitats.¹⁵ These provisions are supplemented by other provisions that require states to take all measures necessary to prevent, reduce and control pollution in the sea which may be caused by seabed activities.¹⁶ These measures include that states should adopt and implement nationally applied rules and procedures that will ensure the effective protection of the marine environment, such as the prevention and management of marine pollution and the prevention of damage to wildlife.¹⁷

It is also required that national rules imposed by a state should be no less effective than international rules where marine pollution and offshore mining are concerned.¹⁸ It is a requirement of *UNCLOS* that national legislation and regulations imposed and enforced by states meet the standards set by international regulation.¹⁹ Article 214 of

¹³ *United Nations Conference on the Human Environment*, 15 December 1972 (hereafter referred to as the Stockholm Declaration).

¹⁴ Article 193 of *UNCLOS*.

¹⁵ Article 194(5) of *UNCLOS*.

¹⁶ Article 194(1) of *UNCLOS*.

¹⁷ Article 117 and 208 of *UNCLOS*.

¹⁸ Article 208(3) and 209 of *UNCLOS*.

¹⁹ See articles 207, 208(4) and 214 of *UNCLOS*; Wescott 2000 *Oceans Policy Ocean & Coastal Management Elsevier* 853; In this instance, an effective legislative framework should include duties at the national level to combat pollution derived from activities related to the seabed, as well as measures to protect all living resources within.

UNCLOS provides that states must ensure that their national regulatory system provides adequate recourse for natural and juridical persons in terms of compensation, or any other form of relief, for damages that may be caused to the marine environment within their jurisdiction.²⁰ Ultimately, therefore, it is required that the South African national legislative framework should fulfil these objectives in terms of offshore mining.

Article 198 provides that when states become aware of imminent or actual damage to the environment, they must immediately notify and consult with other states which may be affected by the damage. It is further provided in articles 204 and 206 that states shall observe, measure, evaluate and analyse the risks associated with marine activities, especially in terms of pollution that may be caused by the activities.²¹ This must be conducted by way of EIAs. Assessments of activities that may reasonably cause substantial pollution or harmful changes to the marine environment must be published in reports at appropriate intervals, as well as submitted to competent international organisations, which will in turn make the reports available to all states for perusal.²² This will inform neighbouring and other states of the risk to their marine environment. South Africa should therefore include these measures in national legislation and regulations to stipulate and facilitate the notification process in terms of possible damage to the environment due to offshore mining.

Article 239 of *UNCLOS* provides that states must promote, facilitate and conduct marine scientific research. This is further expanded by article 251 which provides that states should promote the creation of criteria and guidelines which will determine the nature and implications of this research. The basic objectives of this research are to promote the evaluation and facilitation of acquired knowledge towards the development of appropriate marine technology and the training and education of citizens.²³ Therefore, South Africa is required to establish national marine scientific and technological research centres to develop research in marine conservation and to

²⁰ Article 214(2) of *UNCLOS*.

²¹ Article 204(1) and 204(2) of *UNCLOS*.

²² Article 205 and 206 of *UNCLOS*.

²³ Article 268(a) to (e) of *UNCLOS*.

develop national capabilities to use and conserve the marine environment for their economic benefit.²⁴

In terms of *UNCLOS*, South Africa must also make sure that recourse in terms of compensation or any other appropriate relief for any damage caused to the marine environment is available within its national legal system.²⁵ This includes damage from offshore mining and resultant pollution. These recourse measures should be included in South Africa's national framework to cater for specific compensation for offshore mining-related damages. The above-mentioned articles of *UNCLOS* are examples of the most pertinent obligations that are applicable to South Africa in terms of the regulation of marine conservation and offshore mining.

3.3 The South African context

Any bilateral or multilateral international law instruments that have been ratified by South Africa are binding on South Africa as a member state. In terms of the *Constitution*, any international treaty that is binding on South Africa and has been ratified does not become part of domestic law unless it is incorporated into South African law by national legislation.²⁶ South Africa, therefore, follows a dualistic approach with regard to the incorporation of international law instruments into domestic law.²⁷ This means that ratified international environmental law instruments will only be binding in South Africa, and can only be enforced by domestic courts, if they have been incorporated into South African domestic law.

In response to the ratification of *UNCLOS*, the South African legislature promulgated the *MZA* to specify maritime jurisdiction in terms of the South African territorial sea, continental shelf and the EEZ, in accordance with the *UNCLOS* provisions. The *NEMA* provides in section 2(4)(n) that the state must discharge international environmental

²⁴ Article 275(1) of *UNCLOS*.

²⁵ Article 235 of *UNCLOS*.

²⁶ S 231(1) to 231(4) of *the Constitution*; See *Glenister v President of the Republic of South Africa* 2011 (3) SA 347 (CC) 374 at para 92 (hereafter referred to as *Glenister*).

²⁷ Du Plessis and Kotzé 2006 *QUT Law Review* 33.

responsibilities in the national interest.²⁸ Further to this, the *NEMICMA* states that it was promulgated to give effect to South Africa's international obligations in relation to coastal matters.²⁹ The *MLRA* provides for the state to have regard for any relevant obligation in terms of any international agreement or applicable rule of international law in the management of marine living resources.³⁰ Similarly, the *MSPA* states that it was enacted to give effect to South Africa's international obligations in terms of marine conservation through the creation of marine spatial plans in the South African EEZ.³¹

3.4 Conclusion

The discussion above indicates that South Africa has obligations under international environmental law to ensure that offshore mining activities are governed in accordance with appropriate environmental protection principles.³² It was shown that these obligations will extend to South African citizens if these provisions are enacted into national law. Ultimately, the above-mentioned environmental law instruments will have to comply with the obligations as provided by *UNCLOS*.

The obligations in terms of *UNCLOS* can be summarised as follows:

1. The South African state, as a member that ratified *UNCLOS*, is bound by its provisions and should implement proper measures to ensure compliance with these commitments.
2. The state, therefore, has an obligation to enact national laws to protect the marine environment. These obligations must be consistent with *UNCLOS* best environmental protection practices and standards.
3. Any existing national laws that are inconsistent with *UNCLOS* environmental protection provisions ought to be reformed.

²⁸ S2(4)(n) of the *NEMA*.

²⁹ S2(e) and 21(b) of the *NEMICMA*.

³⁰ S2(i) of the *MLRA*.

³¹ S 2(f) of the *MSPA*; See discussion in para 4.5.2.

³² See Part XII and specifically article 145 of *UNCLOS* which states that members must protect the seabed, ocean floor as well as the natural resources of the seabed.

4. The South African legislature must ensure the sustainable use and management of marine resources, including non-renewable resources extracted during offshore mining.
5. The South African state is obliged to implement a precautionary approach to any activity that may be detrimental to the marine environment.
6. South Africa must submit proper EIAs for offshore mining activities that may cause pollution or cause significant harm to the marine environment.
7. Pollution which may be caused by offshore mining activities must be minimised and prevented.
8. South Africa is obliged to conduct research to determine the extent of the effects that offshore mining may cause on the South African marine environment.
9. South Africa must make sure that recourse for compensation for any damage caused to the environment by offshore mining is available.

In the following chapter, the current South African regulatory offshore mining framework will be analysed to determine whether it complies with the environmental protection standards set by international environmental law.

4 The South African regulatory framework

4.1 Introduction

Mitigation of the detrimental environmental impacts caused by the extraction of seabed minerals in South Africa's EEZ can only be attained through proper national regulation. Within the South African context, several national legislative instruments simultaneously regulate offshore mining. In the first instance, section 24 of the *Constitution* ensures that all South Africans have a fundamental environmental right to a healthy environment that is not harmful to their health and wellbeing.³³ It is clear from section 24 of the *Constitution*, read together with section 7(2) of the *Constitution*, that while the environmental right must be respected, the state has a duty to take positive action to fulfil and ensure this right.³⁴

In response to this obligation imposed by section 24, several environmental law instruments have been promulgated, such as the *NEMA*. The *NEMA* is an example of environmental framework legislation from which several sector-related regulatory instruments have since been created.³⁵ The *MZA* demarcates the South African EEZ according to *UNCLOS* provisions. The *NEMICMA*, has the objective of environmental protection and conservation, specifically for the coastal areas. Relating to the management of the South African EEZ, the *MSPA* was designed to provide a framework for the development of marine spatial plans and the governance of the ocean. The *NEMPAA* aims to establish areas within South Africa and its EEZ that must be protected against any detrimental effects to the environment. The *MRLA* aims to protect the marine environment, in particular the fishing industry which can be severely impacted by the negative effects of offshore mining. This chapter will include a discussion of the *MPRDA* and the procedural aspects pertaining to licencing for offshore mining in South Africa. The aim of this chapter is to provide an overview of the South African national

³³ S 24(a) of the *Constitution*.

³⁴ Du Plessis and Kotzé 2010 *Journal of Court Innovation* 158.

³⁵ Nel and Du Plessis 2001 *SAJELP* 1.

regulatory framework for offshore mining, and to examine how it departs from the global context discussed in chapter 3.

4.2 Section 24 of the Constitution

The *Constitution*, as the supreme law of South Africa, acts as the framework within which South Africa's environmental legislation should operate.³⁶ The *Constitution*, therefore, has a significant impact on the nature, implementation and enforcement of environmental law and the development of environmental jurisprudence in South Africa.³⁷

A constitutionally-entrenched environmental right creates considerable benefits in terms of the welfare of South African citizens and is crucial for the development of environmental law in South Africa.³⁸ From section 24 of the *Constitution*, two different aspects of the environmental right can be distinguished. First is the right for South Africans to a safe and healthy environment, and second is an obligation on the state to protect the environment for present and future generations by implementing reasonable legislative and other measures.³⁹ These measures must be implemented with the aim to prevent pollution and ecological degradation and they must promote conservation of the environment.⁴⁰ Furthermore, these measures must promote ecologically sustainable development, whilst also promoting justifiable economic and social development.⁴¹

³⁶ S 2 of the *Constitution*.

³⁷ Du Plessis and Kotzé 2010 *Journal of Court Innovation* 158.

³⁸ Van der Linde and Basson *Constitutional Law in South Africa* 50 - 8.

³⁹ S 24(b) of the *Constitution*; Kidd "Environment" 438; The scope of "legislative and other measures" was clarified in the landmark case of *Government of the Republic of South Africa and Others v Grootboom* 2000 (11) BCLR 1169 (CC) at para 42. Although related to the right to access to housing, the observations in terms of the state's obligations are applicable. It was stated by the Court that mere legislative measures on their own were not enough to secure these rights. The executive should take additional reasonable legislative measures towards the implementation and enforcement of policies and programmes to ensure the protection of fundamental rights, including the environmental right.

⁴⁰ S 24(b)(i) and s 24(b)(ii) of the *Constitution*.

⁴¹ S 24(b)(iii) of the *Constitution*.

Section 24 of the *Constitution* also refers to the methods necessary to enable the right. It provides that the state must ensure compliance in enabling the protection and conservation of the environment, through reasonable legislative and other measures for the benefit of present and future generations.⁴² It also provides that the state must promote conservation and ensure the sustainable development and utilisation of natural resources, such as those that can be exploited in the offshore mining industry.⁴³ This means that the state has the responsibility to realise the environmental right by creating a proper legislative framework for industries such as offshore mining, for the benefit of current generations as well as for future generations.⁴⁴ This is known as the common heritage principle. The state cannot infringe on this right and must respect, protect and fulfil obligations imposed by the environmental right.⁴⁵ The entrenchment of the environmental right in the *Constitution* ensures that state and individual conduct which may be detrimental to the environment comply with all legislation to ensure the health and wellbeing of all people.⁴⁶

The perceived negative impacts of offshore mining as discussed in chapter 2 highlights the importance of legislative measures that must be implemented and enforced.⁴⁷ South African legislation should specifically regulate the detrimental effects of offshore mining within its provisions. The provisions created by the state must ensure that the fundamental right to health and wellbeing of all present and future generations is secured. This is in line with the international law obligation on the state, as provided by *UNCLOS*, to ensure that national measures are implemented to protect the marine environment.⁴⁸

⁴² See s 7(2) of the *Constitution* and s 24(b); See *Carmichele and Fuel Retailers Association of Southern Africa v Director-General Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province* 2007 10 BCLR 1059; 2007 6 SA 4 (CC) as the leading Constitutional Court decision on the scope and the content of section 24(b) of the *Constitution*; *Government of the Republic of South Africa and Others v Grootboom and others* 2000 (11) BCLR 1169 (CC) at para 42 in terms the right to housing, but applicable as to the positive duties imposed on the state.

⁴³ S 24(b)(ii) of the *Constitution*.

⁴⁴ S 24(b)(ii) of the *Constitution*; See obligations in terms of section 152 (1)(b) and (d) of the *Constitution* on the part of local government as stipulated in sections 4(2)(d)3 and 4(2)(i), 4 73(1) and (2) of the Municipal Systems Act 32 of 2000 to ensure that the right to a clean and healthy environment is fulfilled.

⁴⁵ S 8(1) of the *Constitution*.

⁴⁶ Currie and De Waal *The Bill of Rights Handbook* 522-523.

⁴⁷ See chapter 2 para 2.5.

⁴⁸ See chapter 3 para 3.2.2.

4.3 The *National Environmental Management Act (NEMA)*

In response to the obligation imposed on the state to expand and ensure compliance of the environmental right, the legislature enacted the *NEMA* as framework legislation.⁴⁹ In essence, environmental framework legislation provides the general norms to create new legislation, to amend any existing legislation, and to interpret and apply other sectoral norms as applicable.⁵⁰ The *NEMA* therefore aims to provide overarching, generic environmental principles and create broad, integrated environmental management objectives on which South African environmental law should be based.⁵¹ As the central environmental framework law, the *NEMA* aims to give effect to the environmental right at a foundational level.⁵² The *NEMA* is applicable to all environmental categories such as land-use planning and development, natural resources regulation and development in the mining sector as well as pollution control and waste management.⁵³ As a result, any environmental legislation – including that pertaining to offshore mining – should be created based on the environmental management principles entrenched throughout the *NEMA*.

4.3.1 The national environmental management principles

Section 2 of the *NEMA* provides environmental management principles that have been sourced from international environmental law norms.⁵⁴ These principles are drafted as detailed guidelines to assist decision-makers, such as organs of state,⁵⁵ in developing overall acceptable management practices for the environment.⁵⁶ They further serve as

⁴⁹ 107 of 1998; Nel and Du Plessis 2001 *SAJELP* 1-2.

⁵⁰ Nel and Du Plessis 2001 *SAJELP* 2.

⁵¹ Nel and Du Plessis 2001 *SAJELP* 2-4.

⁵² Blackmore 2015 *The SA Journal of Environmental Law and Policy* 91.

⁵³ In terms of legal action, however, the s 24 right cannot be applied to the matter directly. This is because of the principle of subsidiarity, which states that the empowering legislation must first be scrutinised and applied before invoking constitutional rights in legal action. Therefore, the *NEMA* will have to be consulted before applying the section 24 right directly to a legal action. See *Constitutional Court decision in Minister of Health v New Clicks South Africa (Pty) Ltd* 2006 (2) SA 311 (CC).

⁵⁴ Glazewski and Posnik 2000 *JSAIMM* 211.

⁵⁵ Organs of state has the meaning assigned to it in s 239 of the *Constitution*.

⁵⁶ Glazewski *Environmental Law in South Africa* 142; Scholtz 2005 *Journal of South African Law* 69; S 2(1)(b)- 2(1)(e) of the *NEMA*.

a general framework for environmental plans to ensure that development is environmentally, socially and economically sustainable.⁵⁷ These environmental management principles are key in decision-making and must underline all provisions included in environmental management legislation, including those for offshore mining.⁵⁸

The sustainable development principle is provided by section 2(3) of the *NEMA*. This is a well-established legal principle in environmental law and was officially introduced by the Stockholm Declaration, which states in principle 2 that the environment must be protected for the benefit of present and future generations, through careful planning and management.⁵⁹ Basically, the earth's resources must be employed in such a way as to guard against the danger of their future exhaustion and to ensure that benefits from such employment are shared by all mankind.⁶⁰

In section 2(4)(a) of the *NEMA* it is stated that the achievement of sustainable development requires a duty of care to ensure that disturbance of ecosystems and landscapes, pollution, and the degradation of the environment should be avoided, remedied and minimised.⁶¹ This section further provides for the responsible and equitable use and exploitation of non-renewable natural resources and ensures that the consequences of depleting these non-resources are considered.⁶² Section 28 of the *NEMA* extends this duty of care principle to the citizens in obliging every person or entity which has caused, or will likely cause, pollution or degradation of the environment, to take reasonable measures to prevent or mitigate such harm.⁶³ Section 28 of the *NEMA* provides for the state to intervene where environmental harm or the possibility thereof may occur.⁶⁴ Section 28 of the *NEMA* aims to accomplish two

⁵⁷ S 2(3) of the *NEMA*.

⁵⁸ S 2(1)(b)- 2(1)(e) of the *NEMA*.

⁵⁹ Principle 2 of the Stockholm Declaration. Further to this, principle 5 of the Stockholm Declaration provides that non-renewable resources be managed in such a way as to avoid their exhaustion and depletion.

⁶⁰ Principle 5 of the Stockholm Declaration.

⁶¹ S 2(4)(a)(i) to 2(4)(a)(vi) of the *NEMA*.

⁶² S2(4)(a)(v) of the *NEMA*.

⁶³ S 28 of the *NEMA*.

⁶⁴ Blackmore 2015 *The SA Journal of Environmental Law and Policy* 115; Soltau 1999 *SAJELP* 43.

things:⁶⁵ first, to impose a duty on all persons to take reasonable measures in terms of the protection of the environment, and second, to take responsibility for previous damage to the environment.⁶⁶ Research shows that offshore mining may cause serious disturbances in marine ecosystems and may result in the degradation of the marine environment.⁶⁷ The view is therefore put forward that the specific regulation of offshore mining is pertinently and inevitably part of the duty of care towards the environment as imposed on the state.

The precautionary principle,⁶⁸ also referred to as the principle of foresight, acts as a guideline in the development of environmental law and should be a central element in decision-making.⁶⁹ This principle originates from customary international law and has been recognised by the International Court of Justice (ICJ) in the *Pulp Mills on the river Uruguay* case.⁷⁰ It entails that a cautious approach is applied to situations where limited knowledge is available about the consequences that may occur from an action. A precautionary approach should not be a mere political aspiration, but must be implemented as a risk-averse and cautious strategy applied in all decision-making.⁷¹ The precautionary approach is also an integral part of the due diligence, attributed to all member states of *UNCLOS*, to ensure adherence to its provisions.⁷² It is pertinent that limits on current knowledge regarding the consequences of an action are taken into consideration as part of the precautionary approach. As stated previously, knowledge of the exact impacts that offshore mining may have on the marine environment is for the most part still unknown.⁷³ It is therefore vital that a

⁶⁵ Du Plessis and Kotzé 2007 *Stellenbosch Law Review* 186-187.

⁶⁶ Du Plessis and Kotzé 2007 *Stellenbosch Law Review* 186-187.

⁶⁷ See para 2.5 above.

⁶⁸ S 2(4)(a)(vii) of the *NEMA*. Also, see principle 15 of the Rio Declaration on Environment and Development 1992 UN Doc. A/CONF.151/26 (vol. I), 31 ILM 874 (hereafter referred to as the Rio Declaration) where it is stated: "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

⁶⁹ IUCN 2007 https://www.iucn.org/sites/dev/files/import/downloads/ln250507_ppguidelines.pdf.

⁷⁰ *Pulp Mills on the River Uruguay (Argentina v Uruguay)* ICJ Reports 2010 (20 April 2010) para 164.

⁷¹ Schettler and Raffensperger "Why is a precautionary approach needed?" 65; see also Glazewski and Posnik 2000 *JSAIMM* 216.

⁷² Stated in the Seabed Mining Advisory Opinion: Responsibilities and obligations of states sponsoring persons and entities with respect to activities in the Area by the Seabed Disputes Chamber of the International Tribunal for the Law of the Sea (ITLOS) Seabed Dispute Chamber Case 17, 1 February 2011 at para 131.

⁷³ See chapter 2 para 2.5; Roux and Horsfield "Review of National Legislations Applicable to Seabed

precautionary approach is followed in the creation and application of any regulatory provisions for offshore mining.

The preventative principle provides that any activity that causes or will cause environmental harm in the future should be prohibited.⁷⁴ This principle seeks to minimise harm by taking action proactively. It has been established in the foregoing discussion that offshore mining could have detrimental effects on the environment.⁷⁵ It is therefore crucial that regulatory instruments are implemented that prevent and manage the damaging effects on the marine environment due to offshore mining, especially before it occurs.

Section 2(4)(o) of the *NEMA* refers to the public trust principle. This is a common law principle that avers the environment is held in public trust by the state for current and future generations and for the beneficial use of the people.⁷⁶ This principle has been incorporated into South African environmental law instruments and the South African state seems to have embraced the fundamental idea of this doctrine.⁷⁷ The origin of this principle in environmental law can be attributed to the duty that is placed on the state by the section 24 environmental right provided by *the Constitution*.⁷⁸ This principle provides that the state must ensure the utilisation of environmental resources must serve the public interest and be protected as the people's common heritage. This is similar to the common heritage provision as stated in *UNCLOS*, which provides that natural resources found in the ocean beyond national jurisdiction are the common heritage of mankind.⁷⁹

S 2(4)(f) of the *NEMA* refers to the principle of public participation.⁸⁰ Public participation improves the legitimacy and quality of environmental management

Mineral Resources Exploitation" 310.

⁷⁴ S 2(4)(a)(viii) of the *NEMA*.

⁷⁵ See chapter 2 para 2.5.

⁷⁶ S 2(4)(o) of the *NEMA*.

⁷⁷ Van der Schyff 2010 *PER/PELJ* 124; Blackmore 2018 *Bothalia African Biodiversity & Conservation* 6; This principle is included in s 2 the *NEMA*, and ss 3 of both the *National Environmental Management: Biodiversity Act* 10 of 2004 and the *NEMPAA*.

⁷⁸ See para 4.2 above.

⁷⁹ Preamble of *UNCLOS*.

⁸⁰ S 2(4)(f) of the *NEMA*.

decisions.⁸¹ With the potential risk of significant environmental and social impacts from offshore mining, it is imperative that proper decisions are made to avoid and minimise any adverse impacts. It is stated in section 2(4)(b) of the *NEMA* that environmental management must be integrated and it must be acknowledged that all aspects of the environment are interrelated.⁸² Therefore, the best practicable options must be selected to manage the environment.⁸³

The “polluter pays” principle states that those responsible for causing any adverse effects to the environment are responsible for the costs of preventing, mitigating, controlling and cleaning up the pollution.⁸⁴ These adverse effects can also include environmental degradation and damage as well as any consequent health effects. In terms of offshore mining projects, mining companies will be responsible for the costs associated with the above.

Section 2(4)(c) of the *NEMA* speaks to the principle of environmental justice. It states that environmental justice must be attained so that adverse impacts on the environment do not adversely affect or discriminate against any person.⁸⁵ Environmental management of offshore mining must therefore ensure equitable access to these offshore minerals to all South Africans, to ensure that environmental justice is realised.

The *NEMA* further ensures environmental management of activities from beginning to end.⁸⁶ This is known as the lifecycle responsibility for an activity. Mining companies will be responsible for the environmental management of an offshore mining project throughout its lifecycle and must ensure that the public is provided ample opportunity to participate in the decision-making and management processes.⁸⁷

⁸¹ Stern and Diets eds National Research Council *Public Participation in Environmental Assessment and Decision Making* 2.

⁸² S 2(4)(b) of the *NEMA*.

⁸³ S 2(4)(b) of the *NEMA*.

⁸⁴ S 2(4)(b)(p) of the *NEMA*.

⁸⁵ S 2(4)(c) of the *NEMA*.

⁸⁶ S 2(4)(e) of the *NEMA*.

⁸⁷ S 2(4)(f) of the *NEMA*.

The above is a discussion of a selection of some of the most pertinent environmental management principles applicable to offshore mining. These principles reflect the essence of what *UNCLOS* wants to achieve (environmental protection) and should, therefore, underline all environmental legislation and management decisions as related to offshore mining in South Africa.

4.3.2 Integrated environmental management

The environmental management principles discussed above serve as a foundation for South African organs of state to implement a framework of Integrated Environmental Management (IEM).⁸⁸ IEM is significant when activities are implemented that may cause any sort of harm to the environment. The IEM procedure therefore serves as a tool to understand, plan and guide the development process of any activities – such as offshore mining projects – that concern the welfare of the environment.

IEM is provided for in chapter 5 of the *NEMA*, which includes Environmental Management Plans (EMPs) and Environmental Authorisations (EAs). It entails the identification, prediction and evaluation of actual and potential impacts on the environment, whilst promoting implementation and compliance with the environmental management principles in section 2 of the *NEMA*.⁸⁹ An impact assessment further entails the provision of proposed steps to mitigate any negative impacts (such as pollution) that may have been identified. It must also include a report on the uncertainties and gaps in knowledge when the assessments are done.

4.3.2.1 Environmental authorisations

In order to give effect to IEM, the potential impacts on the environment of a specific listed activity must be considered, investigated and reported to a competent authority for authorisation with an EIA.⁹⁰ Listed activities and geographical areas may be identified and published in the *Government Gazette* for which EAs are obligatory. In

⁸⁸ Organs of state has the meaning assigned to it in s 239 of the *Constitution*.

⁸⁹ See para 4.3.1 above.

⁹⁰ The competent authority is the environmental authority in the province in which the activity is to be undertaken.

instances where the proposed activity is identified to have an implication in terms of international commitments, such as the *UNCLOS* commitments, the minister for environmental matters is the competent authority.⁹¹ However, in the case of offshore mineral resource exploration, prospecting, extraction and processing, the minister responsible for mineral resources is identified as the competent authority to decide on an EA application.⁹² The Minister of Environment, Forestry and Fisheries will be responsible to resolve any appeals that are lodged in relation to the EA.⁹³ The decisions will, however, be subject to the requirements of the *NEMA* and the *Environmental Impact Regulations, 2014*. This means that all environmental management aspects related to offshore mining are regulated through the *NEMA*.

The *NEMA* provides the minimum, general and specific conditions for EAs.⁹⁴ Specifically applicable to this study is the minimum condition that adequate provision must be made for the ongoing management and assessment of potential and actual impacts on the environment throughout the lifecycle of the offshore mining activity.⁹⁵

- a) General conditions include the cooperation between organs of state in the consideration of the EA, and that the environmental management principles as stated in section 2 of the *NEMA* be observed. It also includes the assessment of the potential impacts on the environment and the inclusion of information of the public participation process. Where an EIA is indicated as a requirement to conclude an EA, specific conditions will apply.⁹⁶
- b) Specific conditions include an investigation and an indication of the significance of the potential environmental impacts of any proposed alternatives to the activity, as well as any mitigating measures available. Specific conditions also include the indication of impacts of not implementing the activity, for example

⁹¹ S 24C(2) of the *NEMA*.

⁹² S 24C(2A)(1) of the *NEMA*.

⁹³ Ss 43(1) and 43(1A) of the *NEMA*.

⁹⁴ S 24E, s 24(4)(a) and 24(4)(b) of the *NEMA*.

⁹⁵ Reiteration of the lifecycle responsibility principle in s 2(4)(e) of the *NEMA*.

⁹⁶ S 24(4)(b) of the *NEMA*.

the possible impacts on the South African economy of not authorising an offshore mining project.

4.3.2.2 Environmental impact assessments and management programmes

In South Africa, an EIA is utilised as a tool to determine the potential impacts that an activity may have on the environment and to incorporate these environmental considerations into the decision-making process.⁹⁷ Especially in cases where public and private developments are likely to have serious impacts on the environment, EIAs ensure that appropriate scientific techniques are researched and applied to prevent damage.⁹⁸ EIAs in general contribute to transparency and objectivity in decision-making and ensure that the environment is considered and an important factor in the process. An EIA allows for broad public participation to recognise the rights to individuals and to achieve sustainable development.⁹⁹

The assessment process for EIAs includes either a basic assessment process for activities listed in Listing Notice 1 and 3, or a Scoping and Environmental Impact Reporting process (S&EIR) for activities listed in Listing Notice 2.¹⁰⁰ In terms of offshore mining activities, a basic assessment process is required for activities that require a prospecting right or a mining permit¹⁰¹ and an S&EIR is required for activities which require a mining right.¹⁰²

Section 24N(1A) of the *NEMA* provides that the minister of mineral resources must request an Environmental Management Plan (EMP) with the application of an EA for all mining-related activities. The EMP and S&EIR may be submitted simultaneously.

⁹⁷ Also see principle 17 of the Rio Declaration.

⁹⁸ Sands Principles of international environmental law 263.

⁹⁹ Also see principle 10 of the Rio Declaration.

¹⁰⁰ *EIA Regulations* Listing Notice 1 published in Government Notice 327 of 7 April 2017 and Notice 324 for specific geographical areas in Notice 3 of April 2017. Procedures to be followed for basic assessments are provided in Regulation 19 and 20 of the *EIA Regulations*, 2014; Activities for Scoping and Environmental Impact Reporting (S&EIR) are listed in Notice 2 Government Notice 325 of 7 April 2017. Regulations are set out in Regulations 21 to 24 of the *EIA Regulations*, 2014.

¹⁰¹ Activities 20 and 21 in the *EIA Regulations* Listing Notice 1.

¹⁰² Activity 17 in *EIA Regulations* Listing Notice 2.

The EMP must include information on the proposed environment management measures on mitigation, protection and remedial efforts to be implemented for the entire offshore mining project, from the planning stage to the closure and rehabilitation of the mine. These include the evaluation and prediction of actual and potential detrimental impacts on the environment as well as on socio-economic conditions and cultural heritage. The EMP must also set out the steps and mechanisms to monitor compliance of the imposed measures and the allocated responsibilities for regulating environmental damage and pollution within and outside the boundaries of the mine's area. However, taking into consideration that the exact impacts of offshore mining are still unknown, EMPs for offshore mining projects should acknowledge this and include alternative remedies, such as further and alternative research, for any possible unknown impacts that might occur.

4.3.3 International law application in terms of the NEMA

Chapter 6 of the *NEMA* aims to bring South African environmental law in line with international standards of environmental management.¹⁰³ Specifically, section 25 deals with issues in relation to the international conventions and agreements. The minister may make recommendations to the executive in terms of the future ratification of international instruments.¹⁰⁴ The minister may also publish the provisions of an incorporated international law instrument in the *Government Gazette* and introduce new national legislation to give effect to incorporated international law.¹⁰⁵ In relation to this, section 2(4)(n) of the *NEMA* provides that "global and international responsibilities relating to the environment must be discharged in the national interest." South Africa's international environmental responsibility is hereby confirmed.¹⁰⁶ This will include international instruments such as *UNCLOS*.

¹⁰³ Glazewski and Posnik 2000 *JSAIMM* 214.

¹⁰⁴ S 25(1) of the *NEMA*.

¹⁰⁵ S 25(2 and (3) of the *NEMA*; This refers to legislation incorporated in terms of s 231(2) and (3) of the *Constitution*.

¹⁰⁶ Glazewski and Posnik 2000 *JSAIMM* 214.

4.4 The Minerals and Petroleum Resources Development Act (MPRDA)

Currently, the *MPRDA* is the primary legal instrument that regulates mining in South Africa. In the absence of an exclusive and specific regulatory instrument for offshore mining, it also applies to offshore mining within the South African EEZ.¹⁰⁷ In fact, the following references to the sea and the seabed are the only direct references that are found in the *MPRDA*. Reference to a “block” is made in section 1. A “block” is any area of land or sea, including the seabed situated within the EEZ.¹⁰⁸ Further, “land” according to the *MPRDA* includes the surface of the land and the sea. “The sea” is defined in the *MPRDA* to include the seabed and includes the definition of the sea as defined in sections 4, 7 and 8 of the *MZA*.¹⁰⁹ Further section 5 of the *MPRDA* refers to the construction of undersea infrastructure, which may be required for prospecting, mining, exploration or production. Section 7 states that the Minister may divide the EEZ into regions and must publish this demarcation in the *Government Gazette*. No further reference to the seabed or the specific regulation of mining activities associated with it is made within the *MPRDA*. It is clear from the above references, and the explicit mentioning of the seabed therein, that the legislator intended to fit the regulation of offshore mining into the general provisions of the *MPRDA*.

The *MPRDA* was created as a development tool towards socio-economic progress.¹¹⁰ Chapter 2 of the *MPRDA* clearly states the underlying fundamental principles of the *MPRDA*. The objects in sections 2(c), (d) and (e) of the *MPRDA* are included to promote equitable access to all mineral resources to South Africans, to expand opportunities for previously disadvantaged people (including women), and to promote economic growth and mineral resource development in South Africa.¹¹¹ The *MPRDA* specifically recognises that the state must promote development and uplift communities affected by mining practices.¹¹²

¹⁰⁷ See s 1 of the *MPRDA* and discussion below.

¹⁰⁸ S 1 of the *MPRDA*.

¹⁰⁹ 15 of 1994.

¹¹⁰ April 2012 *Africa Insight* 117-119.

¹¹¹ Dale *Mining, Minerals and Explosives* 314.

¹¹² Du Plessis and Kloppers 2008 *Journal of Energy and Natural Resources* 93.

In section 3, the state's sovereign and internationally accepted right to the country's minerals is recognised.¹¹³ The *MPRDA* specifically attempts to affirm the public trust doctrine by allowing natural resources such as marine minerals to be bequeathed to the people of South Africa, whilst the state acts as the custodian.¹¹⁴ This means that the state is the exclusive owner of all mineral rights and has the exclusive authority to grant legal rights to citizens in terms of mineral prospecting and extraction. However, this right also has a corresponding duty. The state in its capacity as custodian also has the responsibility to protect seabed minerals as natural resources for the common heritage of humankind and to the benefit of all South Africans.¹¹⁵ The minister must ensure that all mineral resources are sustainably developed within a framework of national policy, whilst ensuring the right to have the environment protected for all South Africans and simultaneously complying with the duty of care principle towards the environment.¹¹⁶ This is in line with the internationally recognised sustainable development principle and the duty of care principle as provided by the Stockholm Convention and *UNCLOS*, amongst others.

Section 5 of the *MPRDA* describes the legal nature of citizens' rights to mineral resources in South Africa, including those found in the EEZ. It states that rights created in respect of the *MPRDA* are limited real rights.¹¹⁷ The Court in *Holcim v Prudent Investors*¹¹⁸ confirmed this by stating that this right is the same as the common law mineral right. In fact, this mining right is a real right which permits the holder to search for minerals on the seabed and, if found, to extract and exploit them for profit.¹¹⁹ Mineral rights have to be registered in terms of the *Mining Title Registration Act* 16 of 1967; however, there is no separate register for offshore mining titles currently available in South Africa and these rights will be registered in the same register as terrestrial mining rights. The following section provides an in-depth analysis of the

¹¹³ Preamble, s 2(a), s 2(b) and s 3(2) of the *MPRDA*.

¹¹⁴ Van der Schyff 2010 *PER/PELJ* 122.

¹¹⁵ Ss 3(1) and 3(3) of the *MPRDA*.

¹¹⁶ S 24(b) of the *Constitution*; s 2(4)(a)(i) to (iv) and s 28 of the *NEMA*.

¹¹⁷ S 5 of the *MPRDA*; See also Coertze 2005 *De Rebus* March 2005.

¹¹⁸ 2011 1 All SA 364 (SCA) at para 21.

¹¹⁹ Badenhorst 2017 *South African Law Journal* 361.

current provisions of the *MPRDA* as they pertain to the regulation of offshore mining activities in South Africa.

4.4.1 Regulatory provisions in the MPRDA

4.4.1.1 Prospecting rights and reconnaissance permission

Section 1 of the *MPRDA*, read with section 17 of the *MPRDA*, defines “prospecting” as the process of searching for a mineral and thereby disturbing the surface or subsurface of the earth, which can also include any area that is in the sea.¹²⁰ Prospecting is done to determine the existence of any mineral and to determine its extent and economic value.¹²¹

Sections 16 to 21 of the *MPRDA* describe procedures in terms of offshore mineral prospecting rights. The regional manager must notify the public that an application to prospect or for reconnaissance permission has been received.¹²² The public may then comment on such application, and if an objection is received, it must be referred to the Regional Mining Development and Environmental Committee for advisement.¹²³ The participation of the public in this process is an important element of procedural justice. It ensures that as many considerations as possible are taken into account in respect of the proposed offshore mining operation.¹²⁴ It is therefore a crucial element of the check and balance system and determinative of representative democracy.¹²⁵ However, while there is a positive obligation on the state department to comment on the scoping report, there is no express obligation on the public to participate.¹²⁶ In

¹²⁰ S 1 of the *MPRDA*.

¹²¹ S 1 and 17 of the *MPRDA*.

¹²² The mining industry is regulated on the national level by the Department of Mineral Resources and Energy (DMR). The regional manager is appointed by the Director-General of the DMR as the head a certain region within the Republic in terms of s 8 of the *MPRDA*; S 10(1)(a) of the *MPRDA*. This is provided for in regulation 3 of the *MPRD Regulations*.

¹²³ S 10(1)(b) of the *MPRDA*; S 10(2) of the *MPRDA*; This committee is established in terms of s 64 of the *MPRDA*.

¹²⁴ McLean and Carrick 2007 *SAJELP* 196.

¹²⁵ Vértessy 2016 *International Public Administration Review* 116.

¹²⁶ In *Balení v Minister of Mineral Resources* 2019 2 SA 453 (GP) the Court questioned the level of consent required where informal land rights are concerned and found that a community’s consent is necessary and not merely consultation.

fact, it is only stated that the public should be given opportunity to participate.¹²⁷ Participation is not compulsory and there is no legal obligation on the public to participate. This means that there is a risk that no public participation and consultation might occur at this critical stage of the process to inform the state department about any concerns relating to the offshore mining project.¹²⁸

The prospecting right must be granted should all the requirements be met by the applicant.¹²⁹ These requirements include that the prospecting activity is not deemed to result in unacceptable pollution, ecological degradation or damage to the environment.¹³⁰ This, together with the proven financial and technological ability of the applicant to prospect,¹³¹ must be submitted and approved by a regional manager of the DMR.¹³² According to regulation 8 of the *MPRD Regulations*, an annual progress report relating to prospecting operations must be submitted to the regional manager as well.¹³³

Once a prospecting right has been granted, it must be registered with the Mineral and Petroleum Titles Registration Office within 60 days after it has become effective.¹³⁴ The maximum duration of a prospecting right is eight years.¹³⁵ It is explicitly stated that the minister must (not may), in terms of sections 18(2) and 18(3), renew a prospecting right if all requirements are met,¹³⁶ but this renewal may only take place once.¹³⁷ In the event of successful prospecting, the prospecting right can be converted to a full offshore mining right.¹³⁸ In terms of section 16(4), an unsuccessful applicant

¹²⁷ Ss 10 and 22 of the *MPRDA*.

¹²⁸ McLean and Carrick 2007 *SAJELP* 196.

¹²⁹ S 17(1) of the *MPRDA*. Application for prospecting rights is regulated by regulation 4 of the *MPRD Regulations*.

¹³⁰ S 17(1)(c) of the *MPRDA*.

¹³¹ S 17(1)(a) of the *MPRDA*.

¹³² S 17(5) of the *MPRDA*.

¹³³ Regulation 8 of the *MPRD Regulations*.

¹³⁴ S 19(2)(a) of the *MPRDA*.

¹³⁵ This includes the initial 5 years plus a one-off renewal period of 3 years. See s 17(6) and 18(4) of the *MPRDA*.

¹³⁶ S 18(2) and s 18(3) of the *MPRDA*.

¹³⁷ S 18(4) of the *MPRDA*. Renewal of a prospecting right is provided for in regulation 9 of the *MPRD Regulations*.

¹³⁸ S 19(1)(b) of the *MPRDA*.

should be provided with written reasons explaining the refusal of the prospecting right.¹³⁹ Moreover, an application must be refused if found that it will result in an exclusionary act, cause unfair competition, or that it will cause that the applicant to have a concentration of minerals under his or her control.¹⁴⁰

A non-transferrable retention permit for a prospecting right may be issued by the minister if certain requirements have been complied with.¹⁴¹ These requirements include the occurrence of a possible mineable mineral in the retention area.¹⁴² The retention permit suspends the conditions of the prospecting right and may not be granted for longer than three years.¹⁴³ It is renewable for a further once-off period of not more than two years.¹⁴⁴

Additionally, a reconnaissance permit in terms of offshore mineral exploration is issued in terms of section 13 to section 15 of the *MPRDA*.¹⁴⁵ Reconnaissance permission must be granted if no other person holds a right or permit for the same mineral or land,¹⁴⁶ the requirements of adequate financial and technical ability are proved,¹⁴⁷ expenditure is proportional to the programme, and the applicant further complies with all other provisions of the *MPRDA*.¹⁴⁸ The owner of a reconnaissance permit does not have an exclusive right to apply for a prospecting right or a mining right.¹⁴⁹ The holder of a prospecting right or reconnaissance permission must retain and store records of operations and submit progress reports to the regional manager.¹⁵⁰

¹³⁹ This is also according to s 5 of the *Promotion of the Administration of Justice Act* 3 of 2000 (PAJA). Also, see s 33 of the *Constitution* regarding fair administrative action.

¹⁴⁰ S 17(2) of the *MPRDA*. Read with s 17(1) of the *MPRDA*.

¹⁴¹ S 36 of the *MPRDA*. Retention permits are regulated by regulations 16 and 17 of the *MPRD Regulations*.

¹⁴² S 32(1)(c) of the *MPRDA*.

¹⁴³ S 32(4) of the *MPRDA*.

¹⁴⁴ S 34(3) of the *MPRDA*.

¹⁴⁵ Reconnaissance permission is granted for prospecting for minerals by way of regional, aerial, geophysical or geochemical surveys and geological mapping. Reconnaissance permission is provided for in regulations 4 and 18 of the *MPRD Regulations*.

¹⁴⁶ S 13(2)(b) of the *MPRDA*.

¹⁴⁷ S 14(1)(a) of the *MPRDA*.

¹⁴⁸ S 14(1)(b) and 14(1)(c) of the *MPRDA*.

¹⁴⁹ S 15(2)(b) of the *MPRDA*.

¹⁵⁰ S 21(1) of the *MPRDA*.

As stated above, the provisions in the *MPRDA* relating to prospecting and reconnaissance permits are currently applicable to prospecting for minerals on and in the South African EEZ seabed as well. In terms of offshore mining, any person or entity may search for any mineral within the South African EEZ. If it is deemed to be financially viable, such person or entity can apply for a prospecting right and subsequently apply for a mining right.

4.4.1.2 Mining right and mining permit

The minister is obliged to grant an offshore mining right to a prospector who has complied with the requirements of the *MPRDA*. These requirements include that the applicant has successfully prospected for minerals,¹⁵¹ that he/she complied with the provisions of the Mining Charter,¹⁵² that the financial and technical ability is proven,¹⁵³ and that an approved labour and social plan as well as approved technical and economic plans are submitted.¹⁵⁴ No one may exploit a mineral without being granted a mining right or a mining permit.¹⁵⁵ The regional manager must notify the public that an application for an offshore mining permit has been received.¹⁵⁶ Should any objections be received, it must be referred to the Regional Mining Development and Environmental Committee for advisement.¹⁵⁷

The holder of a mining right must register the right at the Mineral and Petroleum Registrations Office within 60 days.¹⁵⁸ The mining right is then in force for a maximum period of 30 years and is renewable by increments of 30 years thereafter, until the end of the mine's economic life.¹⁵⁹ The minister is obliged to renew mining rights for the life of the mine when the requirements of section 23(1) of the *MPRDA* are met.¹⁶⁰ This

¹⁵¹ S 23(1)(a) of the *MPRDA*.

¹⁵² S 23(1)(f) of the *MPRDA*.

¹⁵³ S 23(1)(b) of the *MPRDA*.

¹⁵⁴ S 23(1)(c), (d) and (e) of the *MPRDA*.

¹⁵⁵ S 4(b) of the *MPRDA*. Application for a mining right is regulated by regulation 10 of the *MPRD Regulations*.

¹⁵⁶ S 10(1)(a) of the *MPRDA*.

¹⁵⁷ S 10(1)(b) of the *MPRDA*.

¹⁵⁸ S 25(2)(a) of the *MPRDA*.

¹⁵⁹ S 23(6) and s 24(4) of the *MPRDA*.

¹⁶⁰ S 24(3) of the *MPRDA*.

is also applicable to offshore mining rights, which in effect means that the offshore licenced area can be mined until the end of the mine's economic life, with the only limitation being that certain requirements are met.

Close inspection of these requirements reveals that they relate broadly to the requirements of optimal extraction of minerals, adequate financial means of the holder and the provision and compliance of social and labour plans. Most importantly, section 23(1)(d) states that the mining operation must not result in "unacceptable pollution, ecological degradation or damage to the environment". However, the term "unacceptable" is not quantified or explained in this context. It must therefore be established from the baseline environment description provided in the EIA.¹⁶¹ Consequently an EIA for an offshore mining operation is of cardinal importance to ensure that potential adverse impacts caused by the activity are foreseen and addressed sufficiently before the onset of the project.¹⁶²

Holders of mining rights and permits are obliged to retain all information about mining activities as well as all financial information regarding these activities at the registered office of the business.¹⁶³ It is provided in section 28(2) that monthly submissions of this information should be provided to the director-general, including the yearly financial reports to prove liquidity and compliance reports for all the required plans that were submitted. This will apply to offshore mining as well and serves as a system to monitor and enforce compliance with the requirements. However, it may be argued that a one-sided submission of information without a method to verify this information may not be a sufficient method to monitor whether the right-holder complies with the provisions.

All holders of rights in terms of prospecting and mining must make financial provision to mitigate and remedy any environmental degradation and pollution that occurs due

¹⁶¹ Regulation 50(a) of the *EIA Regulations* read together with section 39(3)(a) of the *MPRDA*.

¹⁶² Birnie et al *International Law and the Environment* 164-165; This also relates back to the precautionary approach as discussed above.

¹⁶³ S 28(1) of the *MPRDA*.

to prospecting and mining operations.¹⁶⁴ With effect from 2 September 2014, section 41 of the *MPRDA* was repealed and replaced with section 24P of the *NEMA*. Section 24P of the *NEMA* read together with the Financial Provisioning Regulations¹⁶⁵ states that the holder of a mining right must annually assess their environmental liability. The minister may at his/her discretion increase the required financial provision to effectively guarantee the available means to remedy environmental damage. The minister may use the financial provision or parts thereof to rehabilitate the environment should the holder of the right fail to do so.¹⁶⁶ The stipulation that financial provision be retained to fully implement the requirements of the EMP after mine closure towards the rehabilitation of the mine is an important measure from the state to ensure the sustainable closure of an offshore mine, as well as to ensure the environmental right to a healthy environment for South Africans.¹⁶⁷

According to section 47 of the *MPRDA*, the minister may cancel or suspend prospecting and mining rights if the holder of the right acts in contravention of any provision of the *MPRDA*.¹⁶⁸ The minister must provide written reasons as well as remedial measures to correct the breach.¹⁶⁹ Such a suspension may be lifted if it is found that the holder complies with a given directive or compelling reasons are provided for the upliftment.¹⁷⁰ A right, permit or licence will lapse if it is abandoned, expires, the holder becomes insolvent, or it is cancelled by the minister in terms of section 47.¹⁷¹

In terms of section 26 of the *MPRDA*, the DMR may provide incentives to the public to promote mineral beneficiation, including offshore minerals.¹⁷² In this case, the minister must consult with the Minister of Trade and Industry to create these incentives should

¹⁶⁴ S 24P(1) of the *NEMA*; Financial provision includes insurance, bank guarantees, trust fund or cash provided in advance to guarantee that sufficient funds are available to manage the operation and rehabilitate the environment as necessary.

¹⁶⁵ GN 1147 in GG 39425 of 20 November 2015 *Financial Provision Regulations*.

¹⁶⁶ S 24P(2) of the *NEMA*.

¹⁶⁷ Dixon 2003 *The Journal of The South African Institute of Mining and Metallurgy* 485.

¹⁶⁸ S 47(1) of the *MPRDA*.

¹⁶⁹ S 47(2) and s 47(3) of the *MPRDA*.

¹⁷⁰ S 47(5) of the *MPRDA*.

¹⁷¹ S 56 of the *MPRDA*.

¹⁷² S 26(1) of the *MPRDA*.

it be suspected that a mineral can be economically beneficial.¹⁷³ The granting of the mentioned prospecting rights to Green Flash Trading 251 (Pty) Ltd (GFT 251), Green Flash Trading 257 (Pty) Ltd (GFT 257) and Diamond Fields International Ltd (DFI Ltd) in 2012 and 2014¹⁷⁴ may be an indication of the DMR's belief that the prospecting for and eventual mining of these offshore minerals may be economically beneficial for South Africa.

The DMR may also prohibit or restrict all applications and all mining operations in a specified area if it is in the national interest and beneficial to the sustainable development of South Africa's resources.¹⁷⁵ This is known as a moratorium. The applicability of section 49 of the *MPRDA* in terms of offshore mining will relate to whether the prohibition of any of this type of mining projects will be in the national interest and whether it will be beneficial in terms of sustainable development. What is specifically defined as being in the national interest and what is beneficial towards sustainable development are not elaborated in the section itself. The question then leads to where and how environmental protection of the seabed fits in and what the consequences of environmental damage would be for South African citizens.

The above includes a discussion of the most pertinent regulatory aspects of offshore mining permits and licences. In terms of environmental protection, the *MPRDA* imposes a duty on the right-holder to rehabilitate the offshore mining environment and to ensure financial provision to remedy any negative impacts that the offshore mine may have on the environment. This is in line with the international law norms and standards as provided by *UNCLOS*.

3.3.3.2 Environmental management in terms of the *MPRDA* and the *NEMA*

The *MPRDA* of 2002, before amendment, contained several provisions that related to environmental protection. However, these were found to be insufficient and a

¹⁷³ S 26(2) of the *MPRDA*.

¹⁷⁴ See chapter 1 para 1.3 for the discussion on these prospecting rights.

¹⁷⁵ S 49(1) of the *MPRDA*.

duplication of requirements recorded in the *NEMA*.¹⁷⁶ Thus, the environmental management framework of the mining sector was amended. This includes, amongst others, the *MPRDA* and the *NEMA*, which were amended to give effect to the One Environment System (OES).¹⁷⁷ OES commenced on 8 December 2014 to regulate all environment-related aspects of mining through the *NEMA* and repeal all the environmental-related provisions in the *MPRDA*. The primary aim of OES was to replace the fragmented, contradictory and ineffective previously separated system with a regulatory system to manage environmental damage.¹⁷⁸ OES is a clear attempt to rectify the fragmentation which existed in the multitude of duplicated requirements of environmental and administrative obligations that applicants had to comply with in terms of both the *MPRDA* and the *NEMA*.¹⁷⁹ As result, all EA provisions in the *MPRDA* were repealed and the EA provisions of the *NEMA* became applicable to the mining industry.

According to sections 38A(1) of the *MPRDA* and 50A(c) of the *NEMA*, an EIA in terms of chapter 5 of the *NEMA* must be conducted to establish what the impacts might be of a proposed activity.¹⁸⁰ The applicant is then obliged to comply with the requirements set forth by the EIA.¹⁸¹ Furthermore, the holder of such a right must provide an annual report on the extent of compliance with the above-mentioned requirements.¹⁸² The applicant must consult with interested and affected parties in the prescribed manner and include the results of the consultations in the environmental reports.¹⁸³

Additionally, the *NEMA* provides for the appointment of environmental mineral resource inspectors specifically for the mining sector.¹⁸⁴ It also allows the Director of Mineral Resources to issue a directive in terms of section 28 of the *NEMA*, which relates to the duty of care and remediation of environmental damage.¹⁸⁵

¹⁷⁶ McLean and Carrick 2007 *SAJELP* 215.

¹⁷⁷ Humby 2015 *Journal of Energy & Natural Resources Law* 110.

¹⁷⁸ Humby 2015 *Journal of Energy & Natural Resources Law* 110.

¹⁷⁹ Kotzé "Environmental governance" 103, 125.

¹⁸⁰ See discussion in para 4.3.2 on integrated environmental management in the *NEMA*.

¹⁸¹ S 22(4)(a) and s 25(2)(e) of the *MPRDA*.

¹⁸² S 25(2)(h) of the *MPRDA*.

¹⁸³ S 22 of the *MPRDA* as amended.

¹⁸⁴ S 31BB and (2A) of the *NEMA*.

¹⁸⁵ S 24 of the *NEMA*; s 10(a) of the *NEMA*.

It is explicitly mentioned in section 37 of the *MPRDA* that the section 2 environmental management principles of the *NEMA* apply to all prospecting and mining operations in South Africa.¹⁸⁶ It is stated that these principles should act as guidelines for the administration and implementation of regulatory provisions for all mining-related activities.¹⁸⁷ That said, the objectives stated in chapter 2 of the *MPRDA*, together with the application of the environmental protection principles and provisions as stated in the *NEMA*, should set an underlying foundation for the environmental protection of offshore mining-related areas.

4.5 Other environmental laws

4.5.1 The Maritime Zones Act 15 of 1994 (MZA)

The MZA was enacted to demarcate the limits of the South African territorial sea, the EEZ and the continental shelf in accordance with the provisions of *UNCLOS*.¹⁸⁸ In this regard, section 4 indicates the territorial waters as 12 nautical miles from the coast.¹⁸⁹ According to section 7, the South African EEZ comprises the area beyond the territorial waters as far as 200 nautical miles from the baseline.¹⁹⁰ In terms of section 8 of the *MZA*, the continental shelf is demarcated according to article 76 of *UNCLOS*. It is further stated that the continental shelf shall be regarded as unalienated state land in respect of the exploitation of any natural resource and the mining of any mineral.¹⁹¹ This is in line with the provisions of *UNCLOS*.

¹⁸⁶ S 37(a) of the *MPRDA*; See para 3.3.2.1 for discussion on the *NEMA* principles.

¹⁸⁷ S 37(b) of the *MPRDA*.

¹⁸⁸ See para 3.2.1 above.

¹⁸⁹ S 4 of the *MZA*.

¹⁹⁰ S 7 of the *MZA*.

¹⁹¹ S 8(3)(a) and 8(3)(b) of the *MZA*. Unalienated state land has never been a subject of private ownership.

4.5.2 *The Marine Spatial Planning Act 16 of 2018 (MSPA)*

The *MSPA*¹⁹² was promulgated to provide for the development of a shared marine spatial planning system for the management of sustainable development of the South African ocean economy.¹⁹³ With responsible use, the marine environment can be conserved for present and future generations.¹⁹⁴ This act also gives effect to South Africa's international environmental law obligations.¹⁹⁵

It provides in section 6(a) for the creation of the National Marine Spatial Framework,¹⁹⁶ which will – in conjunction with the Marine Area Plans (MAPs) – facilitate the effective and responsible use of the South African EEZ.¹⁹⁷ This framework is to be created by a special "National Working Group" established by section 9(1) of the *MSPA*. This group is to comprise competent officials in all nominated departments including, but not limited to: environmental affairs, fisheries, and mineral resources. The group will be chaired by an official nominated from the department of environmental affairs.¹⁹⁸ These officials should consider various factors in the creation of both the National Marine Spatial Framework and MAPs. These factors are provided in section 9(2)(b) of the *MSPA* and include the consideration of environmental change impacts and the inspection of biological, chemical and physical characteristics of the ocean, species, habitats and the marine ecosystems. Glazewski¹⁹⁹ suggests that the environment not only includes an instrumental value, but also includes an intrinsic and inherent worth together with all the contemplated economic benefits that may be obtained from the exploitation of non-renewable resources.²⁰⁰

Offshore mining of phosphates in the South African EEZ is specifically mentioned under chapter 4 of the Marine Spatial Framework. It states that, taking into consideration the

¹⁹² 16 of 2018.

¹⁹³ S 2 of the *MSPA*.

¹⁹⁴ S 2(c) of the *MSPA*.

¹⁹⁵ S 2(f) of the *MSPA*.

¹⁹⁶ GN 451 in GG 40860 of 26 May 2017 (hereafter referred to as the Marine Spatial Framework)

¹⁹⁷ The Marine Spatial Framework was created in terms of s 6(a) of the *MSPA*; S 2(d) of the *MSPA*.

¹⁹⁸ S 9(1)(a) and (b) of the *MSPA*.

¹⁹⁹ Glazewski *Environmental Law in South Africa*.

²⁰⁰ Glazewski *Environmental Law in South Africa* 5-16.

diminishing sources of terrestrial phosphates, the exploration of phosphate deposits in the South African EEZ would become more viable.²⁰¹

Section 7 provides for the establishment of a knowledge and information system to store information for the National Working Group to use in the creation of marine area plans.²⁰² Information to gather and store include data on marine ecological processes, social and economic information, consultation data and any information necessary for development. In section 8, the consultation process of the spatial planning framework and the marine area plans is provided, to include public and other relevant stakeholders' participation prior to the development of a marine area plan.²⁰³

In response to the *MSPA*, 20 new marine protected areas (MPAs) were declared in *Government Gazette* 47478 and 42479.²⁰⁴ These Regulations took effect on the 1st of August 2019 and demarcate specific areas within the South African EEZ, which will be inaccessible for offshore mining operations. The main purpose of this is the conservation of the specified area and protection of biodiversity and ecosystems. This adds to the already existing MPAs and increases the marine protected areas to 5% of the total marine areas within the South African EEZ.²⁰⁵

4.5.3 *Marine Living Resources Act 18 of 1998 (MRLA)*

As discussed in chapter 2 of this study, offshore mining may have detrimental impacts on marine living resources. In this regard, the *MRLA* is applicable. The *MRLA* ensures the protection of marine ecosystems and in particular the protection of fisheries, as the fishing industry can be severely impacted by offshore mining. The objectives are stated in section 2 as the acknowledgement of the need to conserve the marine living resources for both present and future generations,²⁰⁶ the need to implement a

²⁰¹ *The Marine Spatial Framework* 16.

²⁰² S 7(1) of the *MSPA*.

²⁰³ S 8(1) of the *MSPA*.

²⁰⁴ Operation Phakisa Date unknown

<https://www.operationphakisa.gov.za/operations/oel/msp/Pages/default.aspx>

²⁰⁵ Anonymous date unknown <https://www.marineprotectedareas.org.za/protecting-the-ocean>.

²⁰⁶ S 2(b) of the *MRLA*.

precautionary approach to the management of marine living resources,²⁰⁷ the need to protect the marine ecosystem as a whole,²⁰⁸ the need to preserve marine biodiversity,²⁰⁹ and the need to prevent and minimise marine pollution.²¹⁰ Section 43 of the *MRLA* states that the minister may declare an area to be a marine protected area to safeguard the marine ecosystem and biodiversity from any conflicting uses that may arise in the area, such as offshore mining activities.²¹¹

Under the umbrella of the *NEMA*, various other legislative instruments, such as Sectoral Environmental Management Acts (SEMA), were implemented to regulate specific environmental sectors.²¹² This includes, for instance, the *NEMICMA* to regulate coastal management and the *NEMPAA* to regulate protected areas.

4.5.4 The *National Environmental Management: Integrated Coastal Management Act* 24 of 2008 (*NEMICMA*)

The *NEMICMA* was drafted and promulgated in 2008 with the objectives to ensure the sustainable development and utilisation of natural resources in the coastal areas. The *NEMICMA* applies specifically to the internal waters of South Africa, the territorial waters including the EEZ, the continental shelf and the Prince Edward Islands.²¹³ Natural resources found in these areas are declared by the *NEMICMA* as coastal public property.²¹⁴ It further defines that the state is the trustee of the coastal zone²¹⁵ and that the management of offshore mining should therefore be managed in line with

²⁰⁷ S 2(c) of the *MRLA*.

²⁰⁸ S 2(e) of the *MRLA*.

²⁰⁹ S 2(f) of the *MRLA*.

²¹⁰ S 2(g) of the *MRLA*.

²¹¹ S 43(1)(c) of the *MRLA*.

²¹² A SEMA is a sectoral environmental management instrument and its regulations are created in terms of the *NEMA* to regulate a specific aspect of the environment. The discussion will include *NEMICMA* and *NEMPAA* as related SEMAs.

²¹³ Celliers et al *A User-friendly Guide to South Africa's Integrated Coastal Management Act* 15.

²¹⁴ S 7 of the *NEMICMA*; According to Celliers et al *A User-friendly Guide to South Africa's Integrated Coastal Management Act* 18, the term coastal public property originated from a people-centred approach to coastal conservation management, which is a step away from the resource-centred approach that facilitated the exploitation of natural resources.

²¹⁵ S 12 of the *NEMICMA*. Also, see section 2(4)(o) of the *NEMA* which recognises that the environment is held in public trust for the people of South Africa.

section 24 of *the Constitution*.²¹⁶ The preamble states that in order to conserve and sustainably use the coastal areas of South Africa, an innovative legal and institutional framework is required to clearly define the roles of private citizens and the state. Section 2(e) of *NEMICMA* is of particular interest. It refers to the international environmental law obligations to which South Africa is committed, such as *UNCLOS*. In effect, it infers that the state and private citizens have to comply with international commitments in terms of offshore mining in coastal areas. One such commitment from *UNCLOS* is the requirement for a state to develop and conduct marine research in marine areas to determine the possible impacts on the environment that may be caused by activities and pollution.²¹⁷ In this regard, section 83 of *NEMICMA* provides that the minister may create regulations for conducting research in terms of coastal public property. The *Research Regulations* draft was published as a notice in the *Government Gazette* in 2015 and provides the procedure of application for a permit to conduct research in a coastal public property area.²¹⁸ However, it does not provide for compulsory research to be conducted in terms of the environmental impacts of offshore mining on the marine environment.

The *NEMICMA* contains provisions of EAs that expand on those provided by the *NEMA*. These include the consideration of whether the activity is situated in coastal public property. It also provides for the determination of whether the activity will cause harm to the marine environment and to require extensive environmental authorisations, should this be the case. Sections 44 to 50 of the *NEMICMA* provide the requirements for Coastal Management Programmes (CMPs) on national, provincial and municipal levels. These CMPs must specify the vision and mission in terms of sustainable management for the use of resources such as offshore minerals within the specifically designated mining area.

Another tool that is implemented for coastal conservation within the *NEMICMA* is the coastal planning schemes. These schemes define areas for activities, specifying what

²¹⁶ S 3 of the *NEMICMA*.

²¹⁷ See para 3.2.2 for *UNCLOS* obligations.

²¹⁸ *Draft Research Regulations*, GN 16 in GG 38388 of 16 January 2015.

is allowed or restricted within each area, to prevent possible damage to the environment.²¹⁹ In terms of section 59 of the *NEMICMA*, the minister may issue a coastal protection notice if it seems that an activity may be harmful to the environment. This is in order to mitigate negative effects on the environment. This can include a prohibition order,²²⁰ or instructions to take steps to protect the environment. In terms of offshore mining, the minister may issue such an order if it is determined that the activity may damage the environment. This is in line with both the precautionary and preventative principles as stated in the *NEMA* to protect the environment against any negative impacts.

4.5.5 The *National Environmental Management: Protected Areas Act 57 of 2003 (NEMPAA)*

The *NEMPAA* aims to establish areas within South Africa and the EEZ that must be protected against any detrimental effects to the environment. It therefore aims to create protected areas and nature reserves towards the conservation of ecologically viable areas to represent South Africa's biological diversity on land and sea. Currently, the offshore protected areas comprise approximately 5% of the total South African EEZ. The remaining 95% is open area and available for exploration and ultimately exploitation, pending licence or permit approval.

Pertinent to this research is section 48(1) of the *NEMPAA* which states that no person may conduct any mining-related activities in an identified nature reserve or in a protected area without the written permission of the minister.²²¹ The minister may, however – in consultation with an applicable cabinet member – prescribe conditions under which such mining activities may proceed, whilst taking into consideration the impacts on the environment concerned and the interest of local communities.²²²

²¹⁹ S 56(5)(a) of the *NEMICMA*. One example of such a scheme is the West Coast District Municipality Integrated Coastal Management Programme, which includes zoning schemes to delineate coastal lines within the municipal area.

²²⁰ S 59 of the *NEMICMA*.

²²¹ Ss 48(1)(a) and 48(1)(b) of the *NEMPAA*. In terms of s 89(1)(a) a person will be guilty of a criminal offence if he/she contravenes s 48(1) of the *NEMPAA*.

²²² Ss 48(3) and 48(4) of the *NEMPAA*. See para 4.3.1 on the s 2 *NEMA* principles.

Section 48(4) of the *NEMPAA* directs that the minister must consider all the environmental management principles as provided by section 2 of the *NEMA*.

4.6 Conclusion

The focus of this chapter was the South African regulatory framework for offshore mining. Overarching, it was found that it complies with international environmental regulatory standards provided by instruments such as *UNCLOS*.

It was shown that *the Constitution* creates a foundational environmental right for every South African citizen and that the state thereby has a positive duty to ensure this right by implementing proper legislative measures. The state also has a positive duty to implement proper measures to ensure compliance with its environmental protection commitments in terms of binding international law.

South Africa, as a member state of *UNCLOS*, is bound by its provisions relating to the conservation of the ocean and offshore mining. South Africa is, therefore, obliged to enact national environmental protection-related laws that include internationally acclaimed best protection standards and practices. The discussion suggests that the South African legislature enacted the *NEMA* and several other environmental management instruments that – together with the primary mining regulatory instrument, the *MPRDA* – aim to ensure compliance with the international standards.

Sustainable development and the utilisation of marine resources, whilst ensuring the protection the environment, is an important provision of *UNCLOS* with which South Africa is obligated to comply. The sustainable development is the focus in the objectives of the *MPRDA* and is included as a guiding environmental management principle in section 2 of the *NEMA*. This principle underlines all environmental management provisions in other sector-related legislation for offshore mining in South Africa.

According to *UNCLOS*, a precautionary approach must be implemented for any activity that may be detrimental to the environment. Evidence provided in chapter 2 of this study indicated the perceived negative impacts that offshore mining may have on the environment. The precautionary approach is included in several environmental management instruments in South Africa. Foremost is the “precautionary principle” provision provided in section 2(4)(a)(vii) of the *NEMA*, which states that a risk-adverse and cautious approach be applied for activities where knowledge of the consequences is limited.

UNCLOS directs that South Africa must conduct proper EIAs for offshore mining activities, specifically if the activity may cause harm or pollution to the marine environment. Currently, all EAs (which include EIAs and EMPs for offshore mining projects) are included within the ambit of the *NEMA*. Although the EAs for offshore mining projects are currently done by the Minister of Mineral Resources, it must be decided within the requirements and provisions of the *NEMA* and the *EIA Regulations*, 2014. In terms of the prevention of marine pollution and environmental damage from activities such as offshore mining, the state must ensure that recourse for compensation for any damage caused to the environment by offshore mining is available. In this regard, the *MPRDA* includes the obligatory duties to rehabilitate the offshore mining environment and to provide financial provision to remedy any negative impacts that the offshore mine may have on the environment.

It is further provided by *UNCLOS* that South Africa should conduct research to determine the nature and extent of the effects that offshore mining may cause to the South African marine environment. The *NEMICMA* does provide that the minister may create regulations for conducting research in terms of coastal public property and regulations were drafted to regulate the permission application procedure. However, a provision to conduct research into the effects of offshore mining on the marine environment is not provided in any environmental law instrument and is therefore not compulsory in South Africa. This is not compliant with the commitments in article 239 and 251 of *UNCLOS*.

5 The Australian regulatory regime

5.1 Introduction

Australia owns the third-largest territorial sea in the world with an enormous coastline stretching right around the continent.¹ This area includes an approximate 11 million km², with vast potential for petroleum and mineral extraction.² The potential exploitation of this came to light in the 1960s and 1970s and consequently led to the promulgation of the first offshore-focused laws to regulate the extraction of offshore petroleum and seabed minerals. For instance, the *Offshore Constitutional Settlement*³ (*OCS*), which came into effect in 1979, was created to allocate respective jurisdiction over the offshore area to the Commonwealth and the states of Australia. The *OCS* is heralded as a major milestone for that period and has been regarded as the main basic framework for the applicable offshore laws and marine policies that followed.⁴ Another significant law is the *OMA*,⁵ enacted by the Commonwealth government in 1994, which regulates all aspects of offshore mineral mining in Australia. Since the enactment of the *OMA*, the respective states and the Northern Territory have drafted and enacted their own instruments to regulate offshore mineral mining.⁶ These are based on the *OMA* and work hand-in-hand to impose strict and diversified regulation for offshore mining.⁷

The ratification of *UNCLOS* led to the creation and implementation of the comprehensive Australian Oceans Policy.⁸ This is significant because it supports the

¹ McCormick *Oceans*
https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BriefingBook44p/Oceans.

² Wescott 2000 *Oceans Policy Ocean & Coastal Management Elsevier* 854.

³ Offshore Constitutional Settlement, 1979.

⁴ White 2011 A&NZ Mar LJ 18; Haward *The Australian Offshore Constitutional Settlement* 334.

⁵ *Offshore Minerals Act* 1994 (Cth) (hereafter referred to as the *OMA*).

⁶ These include NT: *Minerals Titles Act*, 2010, NSW: *Offshore Minerals Act*, 1999, QL: *Offshore Minerals Act*, 1998, SA: *Offshore Minerals Act*, 2000, VIC: *Underseas Minerals Resources Development Act*, 1963 and *Mineral Resources (Sustainable Development) Act* 1990; WA: *Offshore Minerals Act*, 1978 and TAS: *Mineral Resources Development Act*, 1995.

⁷ Stated by Senator Robert Ray on 8 February 1994 at the second reading speech on the *Offshore Minerals Bill* 1993, *Senate Parliamentary Debates*, 539.

⁸ The Ocean Policy was implemented on 23rd December 1998.

Australian authority's vision of exercising rights and jurisdiction over the offshore areas and the resources found there. It also ensures that the use of the ocean and its resources is ecologically sustainable.⁹ Any actions that may have a significant impact on the environment in Australia are listed in the Commonwealth *Environmental Protection and Biodiversity Conservation Act (EPBCA)*¹⁰ as "matters of national environmental significance". This list currently contains nine specific areas which are considered as "controlled action" areas and therefore need more stringent environmental protection measures to prevent ecological damage.¹¹ The Commonwealth marine area is listed as one of these controlled action areas.¹² Offshore mining licence applications within these areas will undergo more stringent procedural scrutiny to ensure compliance.

This chapter will discuss the *OMA* as the primary instrument exclusively applicable to offshore mining, in order to compare it to the South African *MPRDA*. This will provide an indication of whether the *MPRDA* is sufficient to specifically regulate the procedural aspects of offshore mining licencing in South Africa. Then two issues of environmental management of offshore areas in Australia will be briefly discussed to provide a supplementary view on offshore marine management. These include the concept of matters of national environmental significance and the strict precautionary approach followed by the Northern Territory to offshore mining.

5.2 The Commonwealth Offshore Minerals Act, 1994 (OMA)

The *OMA* is directly applicable to the Commonwealth marine area, which includes the Australian EEZ, which is not part of state waters. This typically extends from three to

⁹ Wescott 2000 *Oceans Policy Ocean & Coastal Management Elsevier* 869.

¹⁰ *Commonwealth Environmental Protection and Biodiversity Conservation Act*, 1999 (Cth) (hereafter referred to as the *EPBCA*); The *EPBCA* came into force on 16 July 2000.

¹¹ Chapter 2, part 3, division 1 of the *EPBCA*.

¹² After the ratification of *UNCLOS*, it was decided that the coastal waters of a state or territory will consist of the first three nautical miles of sea from the territorial baseline of the coast and will remain under the jurisdiction of that respective state or territory. The remaining nine miles of the territorial sea remains under the Commonwealth jurisdiction; See schedule 1 of the *Offshore Petroleum and Greenhouse Gas Storage Act* 2006 and s 16 of the *OMA*.

200 nautical miles from the coast.¹³ The *OMA* creates an exclusive regulatory structure for offshore mining by providing a licencing system for the exploration and the exploitation of offshore minerals in designated blocks as demarcated in the *OMA*.¹⁴ The *OMA* allocates specific duties to licence- and permit-holders in terms of the environmental protection for offshore mining areas. Within its ambit, the *OMA* applies to all naturally-occurring minerals on the seabed, but expressly excludes the exploration and extraction of petroleum.¹⁵ A mineral within the scope of the *OMA* refers to any naturally-occurring minerals, which may be found in any form of sand, gravel, clay, limestone, rock, evaporites, shale, oil shale or coal.¹⁶ The view is hereby put forward that an exclusive regulatory instrument, which includes specific provisions applicable for offshore mining, is beneficial in addressing the specific environmental impacts that offshore mining may have on the environment.

5.2.1 Licence and permit applications

The administration of licence and permit applications is handled by the Joint Authority acting through the various Designated Authorities for each state and the Northern Territory.¹⁷ Exploration licences authorise the holder to perform any activity in the exploration phase that is directly related to the exploration for minerals specified in the licence, as well the collection of samples of these minerals in the licenced area.¹⁸ In the case that the exploration licence-holder has identified significant mineral deposits and there is a reasonable prospect for long-term extraction, the holder may apply either for a retention licence or a mining licence.¹⁹ A retention licence will be applicable if the mining of the respective offshore minerals will not be viable in the

¹³ State waters typically extend from the shoreline up to three nautical miles from the coast.

¹⁴ White *Australian Offshore Laws* 61.

¹⁵ Ss 13 and 22 of the *OMA*. Petroleum is specifically governed by the *Offshore Petroleum and Greenhouse Gas Storage Act* 2006.

¹⁶ S 22 of the *OMA*.

¹⁷ Ss 29 to 33 of the *OMA*. The Designated Authority refers to the specific state or territory's responsible Minister and the Joint Authority refers to both the Designated Authority together with the Commonwealth Minister.

¹⁸ Ss 23 and 46 of the *OMA*.

¹⁹ Ss 32 and 145 of the *OMA*.

short term for some reason or in the case that the applicant requires more time to get his affairs in order.²⁰

A mining licence allows the licensee full commercial rights to any offshore minerals found within the license specifications. A works licence allows specific activities, such as engineering works in areas that are outside the exploration, retention or mining area.²¹ In addition to the above licences, the *OMA* provides for special purpose consents to perform certain activities, but does not confer proprietary rights onto the holder of the special purpose consent.²² A special purpose consent can include permission to do scientific studies or reconnaissance investigations, but the holder may only collect a small number of minerals as needed for these studies.²³

The application process for all licences includes certain requirements. One of the most significant to this study is that the applicant must advertise the application within 30 days of submission and for a period of at least 14 days to invite comments from the public.²⁴ These comments will be used in the consideration for approval by the Joint Authority. Public policy has become a principal consideration when determining ecologically sustainable development in Australia.²⁵ Further to this, public interest is most adequately conveyed by the public themselves and by properly considering public opinion for all licence and consent applications, it is ensured that ecologically sustainable development is achieved with the interest of the public in mind. Moreover, civil society's involvement and participation in this process can provide the necessary oversight to avoid any potential environmental harm.²⁶ Public participation is crucial in transparent and responsible management decisions and should be emphasised in any regulatory instrument involving the protection of the environment.²⁷

²⁰ S 132 of the *OMA*.

²¹ S 267 of the *OMA*.

²² S 316(2) of the *OMA*.

²³ See s 39 of the *OMA*.

²⁴ S 57 of *OMA*.

²⁵ Haward 1996 *Ocean & Coastal Management Elsevier* 27.

²⁶ Smith and Rosenblum 2011

https://resourcegovernance.org/sites/default/files/RWI_Enforcing_Rules_full.pdf 40.

²⁷ See para 4.3.1 above.

Another condition relevant to this study is that the application must specify the technical advice that is available in relation to the mining project.²⁸ The identification and consideration of appropriate technical standards at the time of application will proactively determine the suitability of offshore mining for the specific seabed area.²⁹ It may also determine the capabilities of the applicant to understand and mitigate any adverse impacts that the mining activities may have on the environment. In essence, this relates to the preventative and precautionary principle. The Land and Environment Court of New South Wales rightly stated in *Telstra Corporation Ltd. v. Hornsby Shire Council*³⁰ that environmental harm should be proactively prevented by erring on the side of caution. A party wishing to benefit from a technology or practice such as offshore mining has the burden of proof that the threat does not exist or that he/she has the means to and advice on how to remedy the threat.³¹

For any licence under the *OMA* to be granted, certain requirements must be met. Significantly, the first approval for any licence is only a provisional approval with two conditions attached for it to become final.³² The first requirement is a proper acceptance by the applicant and second is the registration of the grant. Proper acceptance of a provisional grant includes the obligations for the applicant to provide a written acceptance of the grant, to provide security as requested by the authority and to pay any fees related to the application.³³ Proper acceptance ensures that there is a record of the licence-holder's prior knowledge of the licence conditions in the event that any conditions are breached.

Each Designated Authority must keep a register of all licences. This register must contain all relevant documentation associated with the grant or renewal of a licence.³⁴

²⁸ S 54(1)(d)(iv); s 77(1)(d)(ii); 138(1)(d)(ix); s 199(1)(d)(iv); s 221(1)(d)(ii) and s 363(5)(c) of the *OMA*.

²⁹ Roux and Horsfield "Review of National Legislations Applicable to Seabed Mineral Resource Exploitation" 313.

³⁰ *Telstra Corporation Ltd. v. Hornsby Shire Council* [2006] NSW 133, reported in (2006) 146 LGERA 10, Case No. 11097 (hereafter referred to as the *Telstra* case).

³¹ The *Telstra* case at para 151.

³² S 40(1) of the *OMA*.

³³ S 40(2) of the *OMA*. Also see ss 70, 84, 151, 214, 228 and 283 of the *OMA*.

³⁴ S 328 of *OMA*.

The Designated Authority may at any time request a licence-holder to provide applicable supporting documents as well as samples of the seabed minerals pertaining to the licence.³⁵ Licence-holders are obliged to keep records of all activities³⁶ and to allow relevant inspectors to examine these without hindrance.³⁷ This is crucial for transparency. Adverse environmental impacts in the ocean are not as visible to the public, compared with terrestrial mining. Inspections of records are therefore vital to proactively detect non-compliance with licence conditions.

The above evidence suggests that licencing procedures for offshore mining are similar to those provided by the *MPRDA* in South Africa. This indicates that the *MPRDA* provisions read with the provisions of the *NEMA* in terms of the application and granting of offshore mining permits and licences are sufficient, and as compared with the *OMA*.

5.2.2 Differences in regulation

The first important aspect that stands out from the *OMA* is the demarcation of the commonwealth offshore area into defined blocks. The earth's meridian lines are used to lay out blocks of approximately 2 km² each.³⁸ Special attributes are allocated to these blocks.³⁹ The Joint Authority may declare a block as reserved.⁴⁰ These blocks are reserved for tenders to be submitted by applicants by invitation only, as published in the Gazette by the Joint Authority.⁴¹ A reserved block may also be set aside for a national purpose, environmental conservation or any other purpose deemed necessary. Should a tender be approved for a block, such a block becomes known as a tender block.⁴² All other blocks that are neither reserved nor declared as tender blocks are referred to as standard blocks.⁴³ Standard blocks are available to anyone

³⁵ Ss 370 and 371 of the *OMA*.

³⁶ S 124; s 184; s 261 and s 309 of the *OMA*.

³⁷ S 125 of the *OMA*.

³⁸ S 17 of the *OMA*.

³⁹ Ss 18 to 21 of the *OMA*.

⁴⁰ See s 18 of the *OMA*.

⁴¹ S 74 of the *OMA*.

⁴² See ss 20, 74 to 83 and s 218 of the *OMA*.

⁴³ S 19 of the *OMA*.

who complies with the requirements of the *OMA* to apply for an exploration or mining licence. Any of these types of blocks can be grouped into what is known as a discrete offshore area, to which a specific licence and licencing conditions will be applicable.⁴⁴ The allocation of blocks for an environmental conservation purpose serves the purpose of promoting the protection of the offshore marine areas and easing the environmental management in discrete offshore areas.

5.3 Matters of national environmental significance

The *EPBCA* is the key federal legislation in Australia which mandates project assessment and approval in terms of environmental protection.⁴⁵ Apart from setting out Australia's national environmental EIA regime, it makes specific provisions and criteria for the determination of whether a proposed action will have a significant impact on the environment. If it is deemed, according to these criteria, that an action will have considerable impact on the environment, a conservative and rigorous approach is followed whereby additional approval is required under the regulations of "matters of national environmental significance." At present, the Commonwealth marine environment is listed as one of nine classifications of matters of national environmental significance.⁴⁶ This suggests that offshore mining activities that are deemed to have a considerable impact on the marine environment will be classified as a matter of national environmental significance within areas which are considered as controlled action areas.

A matter of national environmental significance is referred to the Minister of Agriculture, Water and the Environment on the basis that the activity will have a significant or considerable impact on the environment and should be carefully reviewed and considered. This is determined by the evaluation of criteria provided by the Significant Impact Guidelines of the *EPBCA* for each of the nine listed matters of

⁴⁴ S 21 of the *OMA*.

⁴⁵ Simmonds et al 2019 *Conservation letters: Wiley* 2.

⁴⁶ Chapter 2 of the *EPBCA*; 'Commonwealth marine area' is defined in section 24 of the *EPBCA*.

national environmental significance.⁴⁷ The minister may classify an action as a controlled action, which must be assessed in terms of either a public inquiry, documentary information or any other accredited process.⁴⁸ The decision will be based on the scale and intensity of the activity, its impacts on the environment, and the duration and frequency of the activity. Further assessment criteria relate to the sensitivity, value and quality of the affected environment, the impact on neighbouring habitats, the landscapes, and the availability and efficacy of mitigation and remedial measures.

5.3.1 Significant impact criteria for Commonwealth marine area

According to the Significant Impact Guidelines, an action is deemed to have a significant impact on the Commonwealth marine area if the action will:

- modify, disturb, destroy, fragment or isolate an important or substantial habitat from which an adverse impact is caused on the marine ecosystem or its integrity;
- have a significant negative impact on marine species' population and spatial distribution;
- result in a significant change in water quality, which can adversely influence marine biodiversity, ecological integrity and human health; and
- result in negative impact on any heritage values in the marine area.⁴⁹

Prioritising and emphasising certain high-risk activities and areas as requiring extra scrutiny and comprehensive management procedures is significant in terms of environmental protection. This underlines the precautionary principle, the duty of care principle, as well as the sustainable development norms. It is especially relevant to offshore mining due to the unknown environmental consequences that may result. The

⁴⁷ Australian Government 2020 https://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines_1.pdf (hereafter referred to as the Significant Impact Guidelines).

⁴⁸ S 67 of the *EPBCA*.

⁴⁹ Australian Government 2020 https://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines_1.pdf.

view is therefore put forward that offshore mining is a high-risk activity that requires extensive research and comprehensive management decisions. Declaring marine areas as a matter of national environmental significance is an important Australian environmental law approach which can be implemented, in some form, into the South African framework. This will ensure proper and high-level management of the environmental impacts that offshore mining may have on the South African marine environment.

5.4 Australia's cautious approach to offshore mining

Even though the Australian framework for the regulation of offshore mining is detailed, strict and well-implemented, the Northern Territory currently has a moratorium in place on offshore mining within their territorial waters. This moratorium has been in place since 2012⁵⁰ and has been extended until March 2021.⁵¹

The moratorium provides that no titles will be granted for the exploration or mining of seabed minerals before the finalisation of reviews of the impacts of offshore mining on the environment, as well as the provision of methods and practice standards to mitigate and manage any identified impacts. It was recognised by the Northern Territory's Minister for Natural Resources, Environment and Heritage that there is limited information available on the potential impacts and the methods to manage any potential impacts.⁵² It is therefore difficult for authorities to implement proper and industry-specific regulations to manage the development and sustainable use of these resources. The moratorium was therefore placed to allow an appropriate amount of time to research international best practices, establish detrimental impacts and devise strategies to mitigate these impacts. It recognises that adequate time is required to identify the needs and social impacts on the communities affected by offshore mining. A report was produced by the Environmental Protection Agency of Australia suggesting

⁵⁰ Northern Territory 2012 https://ntepa.nt.gov.au/__data/assets/pdf_file/0006/284910/Seabed-Mining-Report.pdf.

⁵¹ Northern Territory Media release 2018 <https://newsroom.nt.gov.au/mediaRelease/25646>.

⁵² Northern Territory 2012 https://ntepa.nt.gov.au/__data/assets/pdf_file/0006/284910/Seabed-Mining-Report.pdf 93.

to the Northern Territory government that a highly cautious approach to offshore mining is necessary.⁵³ It was further suggested in the report that the moratorium be extended until adequate data is available to strategise ways to mitigate environmental damage that may occur. A moratorium is an extreme method to prevent detrimental environmental consequences. This approach propounds the view that a precautionary approach should be implemented for offshore mining by states until more research and data is available to properly address the impacts of offshore mining.

5.5 Conclusion

To conclude, the Australian offshore mining regulatory framework is regarded as a sophisticated system that has been in development since 1979. This development led to the promulgation of a national industry-specific regulatory instrument for offshore mining, the *OMA*. In analysing the provisions of the *OMA*, it was found that it is similar to the South African *MPRDA*, which is applicable to all types of mining and petroleum extraction in South Africa. On these grounds we can argue that the *MPRDA* is sufficient to regulate offshore mining in South Africa.

It was also found that the Australian government supports a cautious approach to offshore mining and the protection of the marine environment. The Commonwealth offshore area is regarded as a matter of national environmental significance, for which special regulatory action is required. The Northern Territory of Australia implemented an extreme precautionary approach on the protection of the marine environment by placing a moratorium on offshore mining in 2012 and which is currently still active. This was primarily done to gain insight into the adverse impacts that offshore mining may have on the environment and to find ways to mitigate these.

The following is pointed out in terms of the findings for the Australian offshore mining framework:

⁵³ Northern Territory 2012 https://ntepa.nt.gov.au/__data/assets/pdf_file/0006/284910/Seabed-Mining-Report.pdf 93.

- a) The *OMA* includes specific provisions governing environmental protection and the mitigation of environmental effects for each type of offshore mining licence and consent. It is, in effect, a one-stop-shop in terms of all necessary regulation applicable to offshore mining.
- b) As an exclusive regulatory instrument for offshore mining, the *OMA* instructs that industry-specific conditions be attached to licences and consents for offshore mining, which are directed with a wide discretion from the regulatory authority. This is beneficial in catering for the lack of information on the environmental impacts associated to this type of mining practice.
- c) A cautious approach is implemented by Australia in listing the Commonwealth marine area under a classification that requires more in-depth investigations and different decision-taking requirements. This, together with a moratorium on offshore mining since 2012, is convincing evidence for the strict precautionary approach that Australia takes on offshore mining.

6 Conclusion and recommendations

6.1 Conclusion

The main objective of this study was to investigate the current status of the South African legal framework pertaining to offshore mining. This was done to determine whether there are any deficiencies present and to offer suggestions towards reform and development. The process involved an investigation of South Africa's international obligations in order to determine whether the South African offshore mining regulating framework complies with the conditions.

From the findings in chapter 2 it is evident that although offshore mining promises lucrative economic benefits, there is relatively limited research and scientific knowledge currently available on the negative impacts that offshore mining may have on the marine environment. The research that is available on the methods to be used and their consequences indicate that offshore mining practices may have numerous devastating impacts on the environment. This is a cause for concern. It was shown that offshore mining practices may also lead to negative consequences on the socio-economic welfare of South Africans. Therefore, proper research must be conducted to investigate what the exact implications on the livelihoods and revenue generation of the affected population will be. Various reports indicated that regulatory caution is crucial to remedy and mitigate the adverse impacts of offshore mining practices. From the above, it can be ascertained that it is of considerable importance that an effective regulatory framework be properly implemented to specifically regulate offshore mining in South Africa.

The findings in chapter 3 provide contextual background for the determination of whether the South African regulatory framework complies with international environmental law standards for offshore mining. It provides insight specifically into the international commitments that South Africa has as a signatory of *UNCLOS*. It was found that South Africa is obliged to implement national laws that are aimed to protect the marine environment and that these national laws must be consistent with

international environmental protection standards and norms. Some of the most important principles include the state's duty to ensure that non-renewable marine resources are sustainably managed and exploited, that pollution caused by offshore mining activities is prevented, and that a precautionary approach is implemented to ensure the use of these resources for present and future generations.

Chapter 4 included a discussion of the current South African regulatory framework for offshore mining. Several regulatory instruments were discussed, including the South African Constitution, the *NEMA*, the *MPRDA* and several sector-related environmental protection instruments applicable to the conservation of the marine environment. It was found that the framework for offshore mining in South Africa is mostly compliant with the core objectives of the international norms and standards provided in chapter 3. Specific non-compliance to *UNCLOS* commitments is indicated for the obligation of states to conduct marine research for activities that may harm the environment. No specific provision in the South African regulatory system could be found that obligates marine research.

Information in chapter 5 provided insight into the Australian regulatory system for offshore mining. It was found that the *MPRDA* compared well with the *OMA* and that their provisions were similar. It was further found that the Australian Government regarded marine areas as matters of national environmental significance which warranted extra-diligent regulation for environmental protection. In addition, an extreme precautionary approach towards offshore mining is implemented by the Northern Territory of Australia. This emphasises the need for further research on mitigating the adverse impacts that may be caused to the environment due to offshore mining.

On the basis of the evidence presented in this study, the following serves as a summary of how aspects of the Australian offshore mining system may contribute towards the development of the South African framework.

6.2 Recommendations

1. Cognisant of the need to strengthen the governance framework, it is recommended that appropriate and relevant offshore mining policies, strategies and regulatory instruments are developed and implemented. These should be specifically dedicated to offshore mining and be based on the precautionary approach, with a clear and unambiguous guide for decision making. It should include specific regulations for offshore environmental management, and tailored compliance and enforcement provisions. Proper environmental management based on sustainable use of non-renewable offshore resources can only be attained with proper guidance and adequate information to predict and assess potential consequences.
2. The current EA and *EIA Regulations* should be reviewed to include specific provisions for the assessment and evaluation of the unique long-term environmental implications of offshore mining.
3. An inclusion should be provided within the South African regulatory framework that obligates research on the possible impacts that offshore mining may have on the environment. Research is necessary to identify the exact impacts on the environmental, socio-economic and cultural contexts, target minerals, and dredging technologies. This should be done with the specific aim of understanding the cumulative implications for the South African context. It is important to ensure that offshore mining does not disproportionately impact marine environments and affect parties and industries that depend on these marine environments for their livelihoods.

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ADDENDUM 1 Professional editing letter

Cell: +27 83 7888 108
Email: lauren@laurenshapiro.co.za
Web: www.laurenshapiro.co.za

laurenshapiro
FREELANCE JOURNALIST • BLOGGER • MEDIA SPECIALIST

15 December 2020

To whom it may concern:

This letter confirms that I have edited Cornette Joynt's dissertation "An analysis of the South African legal framework pertaining to offshore mining: comparative perspectives from Australia" for grammatical consistency and clarity. Due to the tight turnaround time of less than two weeks, Ms Joynt undertook to attend to the formatting of footnotes and bibliography.

I have a Master's degree in English (cum laude, UKZN 2006), and am a member of the Southern African Freelancers' Association (SAFREA) and an associate member of the Professional Editors' Guild (PEG). For more information you may visit my website: www.laurenshapiro.co.za

Please do not hesitate to contact me on lauren@laurenshapiro.co.za or 083 7888 108 if you would like to discuss anything further.

Sincerely,

Lauren Shapiro