

**REGULATION, CONTROL AND PREVENTION OF MARINE POLLUTION IN  
SOUTH AFRICA: A COMPARATIVE ANALYSIS BETWEEN NATIONAL AND  
INTERNATIONAL LEGAL FRAMEWORKS**

By  
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## **DEDICATION**

I dedicate this research to my late grandparents Lesiba Paulos Bapela and Mamokgobi Evah Bapela.

## DECLARATION

I declare that the thesis entitled **REGULATION, CONTROL AND PREVENTION OF MARINE POLLUTION IN SOUTH AFRICA: A COMPARATIVE ANALYSIS BETWEEN NATIONAL AND INTERNATIONAL LEGAL FRAMEWORK**, hereby submitted to the University of Limpopo, for the degree of Doctor of Laws has not previously been submitted by me for a degree at this or any other university; that it is my work in design and in execution, and that all material contained herein has been duly acknowledged.



09/11/2021

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BAPELA MP

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DATE

## ACKNOWLEDGEMENTS

- I am very privileged and honoured to express my grateful thanks to the Almighty God and my Ancestors not only for the guidance and protection they offered me from my infancy to this date but also for giving me the wisdom and intelligence to complete my Doctoral studies in Law.
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- To my son Kgotsifatso and my daughter Oratilwe, Daddy Cool made it.

## LIST OF ABBREVIATIONS

ABLOS	Aspects of the Law of the Sea
ACOPS	Advisory Committee on Protection of the Sea
AfCTA	African Continental Free Trade Agreement
UNC	United Nations Charter
ACCNNR	African Convention on the Conservation of Nature and Natural Resources
OASC	Organisation of American States Charter
AIMS	Africa's Integrated Maritime Strategy
CBD	Convention on Biological Diversity
CEC	Commission of the European Communities
CEG	Cooperative Environmental Governance
MSPA	Marine Spatial Planning Act 16 of 2018
CMC	Center for Marine Conservation
MZA	Maritime Zone Act
SANCOR	South African National Committee for Oceanographic Research
COBSEA	Coordinating Body on the Sustainable Development of the Seas of East Asia
COL	Council on Ocean Law
Covid 19	Coronavirus

CSR	Center for Seafarers' Rights
DAFF	Department of Agriculture, Fisheries and Forestry
DNA	Deoxyribonucleic Acid
EC	European Community
ECA	Environmental Conservation Act
EEA	European Environmental Agency
EEZ	Exclusive Economic Zone
ESM	Environmental Strategy of the Mediterranean
FAO	Food and Agricultural Organization of the United Nations
FAOUN	Food and Agricultural Organization of the United Nations
FAOUN	Food and Agriculture Organization of the United Nations
GES	Good Environmental Status
GESAMP	Group of Experts on the Scientific Aspects of Marine Environmental
GMO	Genetically Modified Organisms
GOOS	Global Ocean Observing System
GPAP	Global Plastic Action Partnership
GTWS	Global Tsunami Warning System
IAEA	International Atomic Energy Agency

IAG	International Association of Geodesy
ICJ	International Criminal Justice
IHO	International Hydrographic Organization
IKS	Indigenous Knowledge Systems
IMMA	International Marine Mammal Association
IMO	International Maritime Organisation
IMOrg	Incident Management Organisation
IOC	Intergovernmental Oceanographic Commission
IOC	Intergovernmental Oceanographic Commission
IPPC	Integrated Pollution Prevention and Control
MARPOL	Prevention of Marine Pollution from Ships
MEC	Member of Executive Committee
MLRA	Marine Living Resources Act
MPA	Marine Pollution Act
MPBLA	Marine Pollution from Land-Based Activities Act
MPRDA	Mineral and Petroleum Resources Development Act (MPRDA)
HAS	Hazardous Substances Act

FCDA Foodstuff Cosmetics and Disinfection Act

FFARSA Fertilizers, Farms, Agricultural Remedies and Stock Remedies Act

NEMA National Environmental Management Act

NEM: ICM National Environmental Management: Integrated Coastal Management

NEM: PAA National Environmental Management: Protected Areas Act

NEM: WA National Environmental Act: Waste Act

NWPA National Water Pollution Act

NOWPA Northwest Pacific Region

NWQMS National Water Quality Management Strategy

OASC Organisation of American State Charter

OSLO Convention for the prevention of marine pollution by dumping from ships and aircraft

PEMSEA Partnership in Environmental Management for the Seas of East Asia

PP Precautionary Principle

PPP Polluter Pays Principle

REDD Reduced Emissions from Deforestation and forest Degradation

RSA Republic of South Africa



SADC	Southern African Development Community
SAMSA	South African Maritime Safety Authority
SANCOR	South African National Committee for Ocean-graphic Research
SCA	Supreme Court of Appeal
SDG	Sustainable Development Goals
SIDS	Small Islands Developing States
SST	Sustainable Seas Trust
UN	United Nations
UNC	United Nations Charter
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention on the Law of Sea
UNEP	United Nation Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organisation
WMO	World Meteorological Organization
WSSD	World Summit on Sustainable Development
WWF	World Wildlife Fund

## ABSTRACT

This thesis, “**Regulation, control and prevention of marine pollution in South Africa: A Comparative analysis between national and international legal framework**” focuses on the existing laws, conventions, treaties and policies on the control and prevention of marine pollution. Various laws have been enacted in South Africa to prevent and control marine pollution. However, marine pollution continues to increase at a rapid rate. This study aims to establish a basic approach that is aimed at combating marine pollution through examining the regulation, prevention and control of marine pollution in South Africa, with a specific focus on the comparative analysis of national and international framework.

To this end, a comparison is made between South Africa and other jurisdictions in Africa, Europe, Asia and Latin America. The reason for employing a comparative approach is to learn best practices and finding solutions to the problem of marine pollution. Thus, the international legal framework, regional framework and operations of intergovernmental bodies and non-governmental bodies on the effort of combatting marine pollution were analysed. The objectives of this study were to examine how marine pollution is prevented through the existing legal framework; to identify the reason for the increasing rate of marine pollution despite the existing legal framework promulgated to curb marine pollution; to determine the effectiveness of the newly created IMOrg, juxtaposing it with similar organisations in other jurisdictions and to propose amendments to legislation that prevent and control marine pollution to ensure effective protection of the marine environment.

This study was guided by questions such as the following: Do the existing legal frameworks adequately protect and control marine pollution? What is the reason for the increase in marine pollution despite the existing legal framework regulating marine pollution? How effective is the IMOrg in ensuring that South Africa address marine pollution? Is there a need to promulgate more effective legislation preventing and controlling marine pollution?

The study adopted a non-empirical qualitative research design that does not include data collection, questionnaire, systematic data analysis, observations and/or interviews. The study relied on the library materials that include but are not limited to textbooks, reports, legislations, regulations, charters, policies, amendments to the legislation, journals or academic journals, government gazette, constitution, national and international journals. From the materials consulted, the study revealed the existence of a relationship between the national and international legal framework. However, such an existing relationship is not good enough to effectively prevent the marine environment from harm. This is because a plethora of national legislations that regulate the marine environment comprise less stringent measures to deter future contravention. The study recommends amendments to legislations that regulate marine pollution to impose penalties that have a deterrent value on parties. The study advises against the repealing of these legislations.

**Keywords:** Pollution; Marine Pollution; Environment; Marine Environment; Ecosystem; Environmental Sustainability.

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## CHAPTER 1: INTRODUCTION AND STUDY ORIENTATION

### 1.1. BACKGROUND

#### 1.1.1. General

It is apposite for the purposes of putting the need of conducting this study in context and to explain in part the rationale for this study to indicate that studies point to different activities that have the effect of causing marine pollution takes place daily.<sup>1</sup> Land-based pollution such as domestic, municipal wastes and sewage sludge, oil pollution, plastic particles, non-point sources and marine debris has become a serious threat to the marine environment.<sup>2</sup> Also, the industrial areas have become highly populated due to the need for survival. This means there is a high pollution load emanating from industrialization and accompanied by domestic and sewage pollution.<sup>3</sup>

Domestic, municipal waste and sewage sludge discharge a greater volume into the marine environment.<sup>4</sup> In the sewage effluent there are different types of wastes namely; municipal wastes, waste from domestic baths and kitchens, remains from animals, wastes from slaughterhouses, faecal matter and many others.<sup>5</sup> Sewage herein includes both treated and untreated human and animal organic waste that finds its way into the marine environment.<sup>6</sup> The high disposal of sewage into the sea causes harm to marine life through the substances entering the sea because they contain a large amount of bacteria.<sup>7</sup>

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<sup>1</sup> Thornton et al, 2001 *Directorate-General Environment Final Report* 32.

<sup>2</sup> Vikas and Dwarakish 2015 *Aquatic Procedia* 382.

<sup>3</sup> Islam 2004 *Marine Pollution Bulletin* 624.

<sup>4</sup> Thornton, et al, 2001 *Directorate General Environment Final Report* 43.

<sup>5</sup> Odeku and Bapela 2017 *Environmental Economics* 130.

<sup>6</sup> Cindy 2018 <http://www.waterencyclopedia.com/Po-Re/Pollution-of-the-Ocean-by-Sewage-Nutrients-and-Chemicals.html> (Accessed on the 26/08/2018).

<sup>7</sup> Cindy 2018 <http://www.waterencyclopedia.com/Po-Re/Pollution-of-the-Ocean-by-Sewage-Nutrients-and-Chemicals.html> (Accessed on 26/08/2018).

As highlighted by Sharmila and Narayanan, this affects the marine environment by reducing the level of oxygen in the sea, killing plant life, and reduces the quality of the sea waters.<sup>8</sup>

Oil pollution continuously receives attention as one of the primary sources of marine pollution. There is continual increase in the rate of tanker operations, the manner in which the demand for the use of oil continues to grow and the accidents that occur frequently in the sea resulting in oil spills and aggravating marine pollution problems.<sup>9</sup> Transportation of goods through ships is the most common threat to the marine environment.<sup>10</sup> South Africa, for example, is situated in the marketplace where transportation of oil takes place through ships,<sup>11</sup> and this is a source of concern.

Shipping puts the marine environment in danger because of the high possibility of marine pollution through oil spills.<sup>12</sup> Oil spills cause marine pollution and adversely affects the marine environment, marine ecosystem and human health. Likewise, marine debris is dangerous to the marine environment, this includes any processed or manufactured persistent solid material that has been disposed of into the marine environment, the disposal of such material can be due to direct or indirect, intentional or unintentional acts.<sup>13</sup> Marine species eat plastic particles that float in

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<sup>8</sup> Sharmila and Narayanan 2017 *Int J Pharma Bio Sci* 247.

<sup>9</sup> Musk 2018 <http://www.itopf.org/fileadmin/data/Documents/Papers/amop12.pdf>. (Accessed on 26/08/2018).

<sup>10</sup> Akten 2006 *Mediterranean Environment* 269.

<sup>11</sup> Botha 2016 <https://www.golegal.co.za/shipping-law-ship-market-maritime-finance-south-africa-overview>. (Accessed on 26/08/2018).

<sup>12</sup> Akten 2006 *Mediterranean Environment* 272.

<sup>13</sup> The National Oceanic and Atmospheric Administration defines marine debris “as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment. Included in these products are materials such as cigarette filters, food wrappers, beverage bottles and cans, grocery and trash bags, and fishing lines, nets and gear. These products can travel for hundreds of thousands of miles on ocean currents, posing a threat to ocean ecosystems and wildlife along the way. Consequently, marine debris has become one of the most widespread pollution problems facing the world’s oceans and waterways”.

the ocean thinking that it is their natural food.<sup>14</sup> Upon feeding on those plastics, they die.

It is to be noted that the land produces a huge percentage of pollution to the marine environment, particularly through non-point source pollution.<sup>15</sup> It includes both small sources and larger sources. Small sources include trucks, boats, cars and septic tanks whereas large sources include forest areas, farms and ranches.<sup>16</sup> A small amount of oil which is dropped by motor vehicles engines on the road and parking get washed into the sea when it rains.<sup>17</sup> This results in making water from the rivers and oceans to be hazardous for wildlife and human beings.<sup>18</sup>

There was a point in history where marine pollution studies were neglected and marine protection was not given adequate attention due to the belief that substances that enter the sea become diluted by the huge body of water, making their concentrations inconsequential.<sup>19</sup> The sea was regarded as a vast sink into which anything could be dumped with impunity. No genuine effort was taken to mitigate, curb, combat or deter perpetrators from engaging in marine pollution acts until 1950 when the most horrific mercury poisoning disaster took place in Minamata, Japan.<sup>20</sup> Minamata disease is methylmercury poisoning that is transmitted to human beings as a result of the consumption of marine species that are contaminated by toxic chemicals.<sup>21</sup>

The Minamata disease's symptoms are but not limited to the following: (a) distorted vision, (b) sensory disturbance and (c) auditory disturbance.<sup>22</sup> The disease also

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<sup>14</sup> Royte 2018 <https://www.nationalgeographic.com/magazine/2018/06/plastic-planet-health-pollution-waste-microplastics> (Accessed on 26/08/2018).

<sup>15</sup> NOAA 2018 <https://oceanservice.noaa.gov/facts/pollution.html> (Accessed on 26/08/2018).

<sup>16</sup> Clendenon 2018 <http://www.waterencyclopedia.com/Po-Re/Pollution-of-the-Ocean-by-Sewage-Nutrients-and-Chemicals.html>. (Accessed on the 26/08/ 2018).

<sup>17</sup> Dell'Amore 2014 <https://www.nationalgeographic.com/news/2014/3/140325-texas-pollution-oil-spills-animals-science> (Accessed 26/08/2018).

<sup>18</sup> NOAA 2018 <https://oceanservice.noaa.gov/facts/pollution.html>. (Accessed on 26/08/2018).

<sup>19</sup> Bapela *Legal Analysis of Prohibition of Marine Pollution* 1.

<sup>20</sup> Noriyuki 2006 *JMAJ* 113.

<sup>21</sup> Noriyuki 2006 *JMAJ* 112.

<sup>22</sup> Semionov 2018 *World Journal of Neuroscience* 178.

affected fetuses while in the uterus of their mothers and causes cerebral palsy.<sup>23</sup> Its persistent occurrence became a social problem and instigated the intervention of fishermen. Their intervention was directed at the perpetrators who discharged toxic chemicals into the water by requesting them to cease waste liquid drainage and formulate a waste liquid processing facility.<sup>24</sup> The fishermen' intervention stemmed from the fact that their livelihoods and wellbeing were extremely threatened as they neither could fish nor consume marine species.

Despite the disease's catastrophic effects on the environment and human beings, the Minamata pollution incident did not receive much attention from the world. Many countries did not take an initiative to ensure that there was protection, control and regulation of marine pollution. In the mid-1960s, the same incident that occurred in the 1950s repeated itself. The incident served as an eye-opener to the world about the danger of marine pollution and the need to protect and control marine pollution. The awareness gained momentum and other countries around the world took the initiative to promulgate laws that will protect and regulate marine pollution.

The 1967 "Torrey Canyon" vessel Kuwaiti crude oil spillage<sup>25</sup> highlighted the dire need for the protection and control of marine pollution around the world. It is after the "Torrey Canyon" incident that various legal frameworks were promulgated at the national level and international level to protect and control marine pollution. The first reported initiative to protect and control marine pollution occurred in the 1970s at an international level by the promulgation of the 1972 Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (OSLO Convention),<sup>26</sup> which was opened for signature in Oslo on 15 February 1972 and entered into force on 6 April 1974.

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<sup>23</sup> Komyo 1997 *Toxicologic Pathology* 617-619.

<sup>24</sup> Noriyuki 2006 *JMAJ* 115.

<sup>25</sup> Torrey Canyon was a Liberian vessel that caused oil spills in the year 1967. Oil of about 120, 000 tons were spilled into the ocean. This resulted from running aground of the vessel on Pollard's Rock between Land's End and the Scilly Isles. The spill took place during the emergence of environmentalism in the western society and catalysed its emergence. This disaster positively influenced and triggered investment in marine pollution research.

<sup>26</sup> Convention for the Prevention of Marine Pollution by dumping from ships and aircraft (1972) (OSLO Convention).

The OSLO Convention sought to provide a framework for controlling the dumping of harmful substances from ships and aircraft into the ocean. To this end, the Convention set a permit system for dumping substances such as arsenic, lead, copper, zinc and their compounds. Importantly, the Oslo Commission was established by the OSLO Convention to provide oversight on the implementation of the Convention. The preambular statement to the OSLO Convention makes submissions that are critical to this study *viz* (a) the importance of marine environment and the living resources to all nations, (b) the threat posed by pollution on ecological equilibrium, (c) the need to prevent and combat marine pollution through a concerted effort by the government at all spheres of government and (d) acknowledging the multifaceted sources of marine pollution and undertaking to prevent such pollution.

Another important development following the OSLO Convention is that in 1973, the Convention for the Prevention of Pollution from Ships 1973 (MARPOL)<sup>27</sup> was introduced. It is important to highlight for the purposes of this study that the MARPOL Conventions was once amended as a result of emerging pollution incidents to keep up with the current pollution outbreaks. This convention covers the following particles causing pollution to the marine environment: (i) sewage and garbage (ii) chemicals (iii) oil pollution and (iv) harmful packaged forms.

It was followed by the National Monitoring Survey Programme in 1974, which provided a framework for oversight for the protection and control of marine pollution. In 1982 the United Nations Convention on the Law of the Sea 1982 (UNCLOS)<sup>28</sup> was established. UNCLOS clearly defined the obligations of nations pertaining to their use of the world's ocean and outlined certain guiding principles to consider as part of protecting and sustaining marine natural resources.

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<sup>27</sup> International Convention for the Prevention of Pollution from Ships (1973) (MARPOL Convention).

<sup>28</sup> United Nation Convention on the Law of Sea (1982) (UNCLOS).

### 1.1.2. Overview of pollution control framework in South Africa

South Africa took the initiative to protect and control marine pollution through the promulgation of a legal framework regulating marine pollution. The idea is to curb, combat or mitigate marine pollution. The framework is constituted by instruments specific to marine protection such as for example the Marine Pollution (Prevention of Pollution from Ships) Act,<sup>29</sup> Marine Pollution (Intervention) Act,<sup>30</sup> Prevention and Combatting of Pollution of the law of Sea by Oil Act,<sup>31</sup> Civil Liability Act,<sup>32</sup> National Marine Fisheries Service,<sup>33</sup> Marine Living Resource Act (MLRA),<sup>34</sup> and Maritime Zone Act (MZA).<sup>35</sup> And instruments addressing environmental protection in general such as for example the National Environmental Management Act (NEMA),<sup>36</sup> the National Environmental Management: Integrated Coastal Management Act (NEM:ICMA),<sup>37</sup> the National Environmental Management: Protected Areas Act (NEM:PAA),<sup>38</sup> the National Environmental Management: Waste Act (NEM:WA),<sup>39</sup> the Environmental Conservation Act (ECA),<sup>40</sup> and those that incidentally addresses pollution and whose provisions can be used to combat marine pollution such as the National Water Pollution Act (NWPAA),<sup>41</sup> Mineral and Petroleum Resources Development Act (MPRDA),<sup>42</sup> Hazardous Substances Act (HAS),<sup>43</sup> Foodstuff

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<sup>29</sup> *Marine Pollution (Prevention of Pollution from Ships) Act* 2 of 1986.

<sup>30</sup> *Marine Pollution (Intervention) Act* 64 of 1987.

<sup>31</sup> *Prevention and Combatting of Pollution of the Sea by Oil Act* 6 of 1981.

<sup>32</sup> *Civil Liability Act* 41 of 1961.

<sup>33</sup> The National Marine Fisheries Service is an agency that is responsible for the conservation, protection and management of the nation's marine species and resources.

<sup>34</sup> *Marine Living Resource Act* 18 of 1998 (MLRA).

<sup>35</sup> *Maritime Zone Act* 15 of 1994 (MZA).

<sup>36</sup> *National Environmental Management Act* 107 of 1998 (NEMA).

<sup>37</sup> *National Environmental Management Integrated Coastal Management Act* 24 of 2008 (NEM:ICMA).

<sup>38</sup> *National Environmental Management Protected Areas Act* 57 of 2003 (NEM:PAA).

<sup>39</sup> *National Environmental Management Waste Act* 59 of 2008 (NEM:WA).

<sup>40</sup> *The Environmental Conservation Act* 73 of 1989 (ECA).

<sup>41</sup> *National Water Act* 36 of 1998 (NWA).

<sup>42</sup> *Mineral and Petroleum Resources Development Act* 28 of 2002 (MPRDA).

<sup>43</sup> *Hazardous Substances Act* 15 of 1973 (HAS).

Cosmetics and Disinfection Act (FCDA),<sup>44</sup> Fertilizers, Farms, Agricultural Remedies and Stock Remedies Act (FFARSRA).<sup>45</sup>

Specific to marine pollution, in 1984 South Africa promulgated the Prevention and Combating of Pollution of the Sea by Oil Act as the first step to protect and control marine pollution. Chapter VI of the South African Regulations under the Prevention and Combating of Pollution of the Sea by Oil Act of 1984 sets out steps to combat or prevent marine pollution by oil, for example. In 1985 South Africa implemented the South African National Committee for Oceanographic Research (SANCOR) as a framework for research, with the intention to provide advice to authorities on the management and effect of pollutants in the marine environment.

In July 2018 the South African National Department of Transport announced the establishment of the Incident Management Organisation (IMOrg).<sup>46</sup> This development was ground-breaking in the history of the South African maritime transport sector established. The IMOrg is a multi-stakeholder organisation constituted by the South African Maritime Safety Authority (SAMSA), National Disaster Management Centre, Petroleum Agency of South Africa, Department of Environmental Affairs and Department of Mineral & Resources. The IMOrg is tasked with the responsibility of capacitating South Africa in respect to major marine pollution national response system, and to continually assess and monitor South Africa's level of preparedness and response.<sup>47</sup> It also has the responsibility to ensure that oil and gas spillages are properly managed. Furthermore, it embarks on a mission to rescue vessels and seafarers that need the assistance if they are within 2798 kilometres South African Coastline.

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<sup>44</sup> *Foodstuff Cosmetics and Disinfection Act 54 of 1972 (FCDA).*

<sup>45</sup> *Fertilizers, Farms, Agricultural Remedies and Stock Remedies Act 36 of 1947 (FFARSRA).*

<sup>46</sup> Frankson (2018) found on <https://infrastructurenews.co.za/2018/07/06/new-body-set-to-manage-marine-pollution-in-sa>. (Accessed on 08/10/2020).

<sup>47</sup> The Incident Management Organisation (IMOrg) was announced in July 2018.

## 1.2. PROBLEM STATEMENT

There is an increasing rate of the population that resides along the coastline in South Africa. In turn, this has led to the increasing rate of industrialization and urbanization in the coastal areas, which contributes to the increasing rate of the problem of pollution in the coastal areas. Despite numerous laws and policies promulgated in South Africa to prevent and control marine pollution, as alluded to in paragraph 1.1.2 above, pollution in South Africa is increasing rapidly. Its effects on the marine ecosystem, human health and economy are dire. It destroys aquatic life, vegetation, seafood, pharmaceutical plants, recreation and tourism.<sup>48</sup> All the species and activities that marine pollution destroys contribute to the well-being of the country.

Figure 1.1 below demonstrates why South Africa is ranked amongst the top 20 worst polluters of plastics in the oceans worldwide. Such pollution finds its way into the sea to cause what is termed marine pollution. This is over and above the fact that the marine ecosystem is put under pressure due to the excessive reliance of the marine environment by the population residing in the coastal areas.

**Figure 1.1:** SA oceans fast becoming the biggest dumping sites.



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<sup>48</sup> Calvao, Pessoa and Lidon 2013 *Emir. J. Food Agric* 930.



Source: SABC - <http://www.sabcnews.com/sabcnews/sa-oceans-fast-becoming-biggest-dumping-site>

As discussed in paragraph 7.1 *infra*, there have been numerous catastrophic incidents of marine pollution that took place in South Africa. In 1994, for example, South Africa was hit by the M V Apollo oil spill which took place near Cape Town and affected the South African Coastline.<sup>49</sup> The oil leakage from the vessel was a major environmental disaster, which killed thousands of seabirds, caused the separation and migration of marine species. Marine species that rely on scent to find their babies or mothers after separation were no longer able to do so because the strong smell of oil marks their natural scent.

### **1.3. AIMS AND RESEARCH OBJECTIVES OF THE STUDY**

#### **1.3.1. Aim of the Study**

This study aims to establish a basic approach aimed at combating marine pollution through examining the regulation, prevention and control of marine pollution in South Africa. Such an approach will be informed by the current practices in different national and international jurisdictions, trends and frameworks. To this end, a comparison will be made between South Africa and other jurisdictions in Africa, Europe, Asia and Latin America.

#### **1.3.2. Objectives**

The research objectives of the study are specifically to:

- Examine how marine pollution is prevented through the existing legal framework in South Africa, and in other comparator jurisdictions in Africa, Europe and Latin America;
- To identify the reason for the increasing rate of marine pollution despite the existing legal framework promulgated to curb marine pollution;

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<sup>49</sup> Crawford et al 2000 <http://www.adu.uct.ac.za/adu/projects/sea-shore-birds/oilspill/initialeffects#:~:text=The%20bulk%20ore%20carrier%20MV,demersus%2C%20on%2023%20June%202000>. (Accessed on 30/08/2018).

- To determine the effectiveness of the newly created IMOrg, juxtaposing it with similar organisations in other jurisdictions;
- To propose amendments to legislations that prevent and control marine pollution to ensure effective protection of the marine environment.

#### **1.4. RESEARCH QUESTIONS**

This study will address the following questions:

- Do the existing legal frameworks adequately protect and control marine pollution?
- What is the reason for the increase in marine pollution despite the existing legal framework regulating marine pollution?
- How effective is the IMOrg in ensuring that South Africa address marine pollution?
- Is there a need to promulgate more effective legislation preventing and controlling marine pollution?
- What approach is best suitable to help South Africa combat marine pollution?

#### **1.5. RATIONALE AND SIGNIFICANCE OF THE STUDY**

##### **1.5.1 Contributions to existing knowledge**

The research will focus on the application of the existing legal framework preventing and controlling marine pollution in South Africa. It will also identify challenges emanating from marine pollution, the adverse effects of marine pollution. The need to take a firm stance against the increasing rate of marine pollution in the presence of the existing legal framework promulgated to prevent and control marine pollution will be highlighted. Therefore:

- The findings of this study will be used to propose a regulatory and legislative that will effectively prevent and control marine pollution in South Africa.
- The study will contribute to the reduction of marine pollution, should its recommendations be implemented.

## **1.6. THEORETICAL FRAMEWORK**

### **1.6.1. General**

The theoretical framework of this study discusses different approaches that seek to address the manner in which the marine pollution problem can be tackled. It will further seek to determine the reason for the acceleration of marine pollution in the existence of the plethora of legal frameworks that are promulgated to regulate, control and prevent marine pollution. This will afford the current researcher to diagnose the problem relating to regulation, control and prevention of marine pollution then propose a remedy to this problem at the end of this study.

### **1.6.2. The Regime Analysis Approach**

A Regime Analysis approach is a Rule-Based Method for studying institutions or normative frameworks as part of addressing a particular problem. In this study, the nature of this approach concerns itself with national and international regimes, and speak to the occurrence of cooperation among all stakeholders in environmental protection and the role they play in mitigating marine pollution and overcoming various challenges.<sup>50</sup> Considering international environmental protection regimes as an approach fits well to the current study because marine pollution is a global issue. Thus, international cooperation ought to sit at the apex of measures employed to avert marine pollution catastrophe. The definition of a regime enjoyed a considerable amount of debate amongst scholars, it is also assuming the status of a persuasive if not mostly familiar approach to marine protection and environmental policymaking.

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<sup>50</sup> The Regime Analysis approach in this study derives from or is fashioned on the so-called Regime Theory. This is “an approach within international relations theory, a sub-discipline of political science, which seeks to explain the occurrence of cooperation among States by focusing on the role that regimes play in mitigating international anarchy and overcoming various collective action problems among States (International Relations, Principal Theories; State; see also Co-operation, International Law of).” Bradford 2007 [https://scholarship.law.columbia.edu/faculty\\_scholarship/1970](https://scholarship.law.columbia.edu/faculty_scholarship/1970). (Accessed on 07/07/2021).

The current researcher aligns his idea of regime analysis approach to the definition suggested by Krasner who defined a regime as a “set of principles, norms, rules and decision-making procedures around which actors’ expectation converge in a given area of international relations”.<sup>51</sup> Authors such as Keohane who promote the existence of this approach posit that regimes give rise to myriad of benefits *to wit* (a) promotion of States cooperation, (b) mutual compliance in terms of fulfilment of obligations created amongst the state, (c) mitigation of unruly behaviour in international relations matters and many other benefits related thereto.<sup>52</sup>

In contrast, the anti-Regime Analysis Approach provides that the regime concept is a useless approach that matters only in respect of restrictive conditions. Strange vehemently presented her stance pertaining to the existence of the Regime Analysis approach by arguing in the following manner:

[T]he concept of regime is pernicious because it obfuscates and obscures the interests and power relationships that are the proximate, not just the ultimate, cause of behaviour in the international system. All those international arrangements dignified by the label regime are only too easily upset when either the balance of bargaining power or the perception of national interest change among those states who negotiate them. Regimes, if they can be said to exist at all, have little or no impact. They are merely epiphenomenal.<sup>53</sup>

In the midst of contrasting views pertaining to the approaches that may contribute immensely to the regulation, control and prevention of marine pollution problem, South Africa, and many other countries around the world aligned themselves to the

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<sup>51</sup> Krasner 1982 *International Regimes* 185.

<sup>52</sup> Ebaye, 2009 *Journal of Political Science and International Relations* 119.

<sup>53</sup> Krasner 1982 *International Regimes* 192.

pro-regime analysis. Despite the myriad of benefits presented by the pro Regime Analysis approach, marine pollution continues to increase unabated.

There are different types of international legal frameworks and initiatives that promote State cooperation and the fulfilment of mutual obligations. These include but not limited to the United Nations Convention on the Law of the Sea (hereinafter UNCLOS) and the Principle of Good Neighbourliness.<sup>54</sup> These legal frameworks and initiatives are prime examples of what Regime Analysis approach is based on. This approach, with its canon belief of state cooperation and mutual dependence in safeguarding the shared interests, has prompted the promulgation of a plethora of legal frameworks and instigated different initiatives that are currently regulating, controlling and preventing marine pollution.

Thus, it will not be far-fetched to submit that the international community has adopted the regime analysis approach in the quest of regulating, controlling and preventing marine pollution from damaging the marine environment.

What strikes at the heart of this submission is an inquiry pertaining to the apparent existence of accelerated marine pollution catastrophe despite the adoption of this approach and the existence of different legal frameworks regulating, controlling and preventing marine pollution. This inquiry motivates the current author to examine these legal frameworks and delves into their effectiveness to solve the problem of marine pollution. In doing that, it is prudent that the author employs a problem-solving approach to be able to understand the type of problem faced by the marine environment. To this end, the problem-solving approach is discussed hereunder.

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<sup>54</sup> United Nations Convention on the Law of the Sea and the Principle of Good Neighbourliness (UNCLOS) A 242, 273 & 278.

### 1.6.3 Problem-Solving Approach

If one is faced with a problem and seeks to solve it with relative ease, it is advisable to ensure that such a problem is clearly defined. It is against this backdrop that the current author intends to explain concepts that speak to different types of problems. This approach is adopted with the hope of detecting the type of problem perpetuating marine pollution in the existence of marine legal frameworks promulgated to regulate, control and prevent marine pollution.

The problem-solving approach implores one to understand the existence of different concepts relating to problems. It requires an understanding of the existence of concepts such as environmental benign problems. This concept is regarded as a less serious problem. Young provided a direct explanation of benign problem by submitting that it is a straightforward problem that can be solved with relative ease.<sup>55</sup> In contrast to the environmental benign concept, there exists a concept of environmental malign problem that is understood to be complex and needs to be approached with great circumspect. This type of a problem is likened to a situation where parties collectively share a diminishing resource and are compelled by the prevailing circumstances to vie for those resources.<sup>56</sup> A prime example may be drawn from a situation where different States are competing for scarce resources such as clean water and fishing platform.

Apart from the contrasting concepts discussed above, two more concepts still exist namely structured problem and unstructured problem. Both concepts lend themselves to different explanations. Their explanations are commonly discipline based. Hence, there are authors from different disciplines advancing different explanations. The current researcher opted to consider explanations advanced by the following authors, Hong, Hisschemöller and Gupta. These authors come from different disciplines.

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<sup>55</sup> Oran 2011 <https://www.pnas.org/content/pnas/108/50/19853.full.pdf>. (Accessed on 28/11/2020).

<sup>56</sup> Hisschemöller and Gupta 1999 *International Political Science Review* 153.

Hong provided an explanation in accordance with the teaching perspectives. She stated that a structured problem “[...] have a single correct, convergent answer to reach satisfaction in a final solution so it requires a relatively small amount of information or constrained knowledge based on material presented. A well-structured problem consists of all elements of the problem including a well-defined initial state, a known goal state, constrained set of logical state, and constraint parameters”.<sup>57</sup> Hisschemöller and Gupta explained it from a political perspective by stating that “if a problem is structured, it is to be solved by standardized techniques and procedures. The disciplines and specialisms invoked are clearly defined and the decision-making is in the hands of a single actor”.<sup>58</sup>

In respect of an unstructured problem, Hong averred that “the number of goals, which are vaguely defined, must be considered in the problem-solving process. The information available to the decision-maker is usually incomplete and inaccurate or ambiguous. In this problem, it is uncertain which concepts, rules, and principles are necessary for the solution. There is an inconsistent relationship between concepts, rules, and principles among cases.

Case elements are differentially important in different contexts based on the interaction of the elements with each other in context”.<sup>59</sup> Hisschemöller and Gupta opined that “technical methods for problem-solving of this type appear inadequate.

The boundaries of the problem are diffuse so that it can hardly be separated from other problems. To address the whole problem demands much more than addressing each of its parts. One cannot be sure what kinds of expertise are to be invoked for problem-solving. Conflicting values and facts become interwoven and many actors get involved in the policy process”.<sup>60</sup> A better understanding of the abovementioned concepts plays an important role in determining the type of

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<sup>57</sup> Hong *The Relationship Between Well-Structured And Ill-Structured Problem Solving In Multimedia Simulation* 11.

<sup>58</sup> Hisschemöller and Gupta 1999 *International Political Science Review* 155.

<sup>59</sup> Hong *The Relationship Between Well-Structured and Ill-Structured Problem Solving In Multimedia Simulation* 17.

<sup>60</sup> Hisschemöller and Gupta 1999 *International Political Science Review* 156.

problem that can be associated with marine pollution. Having a clearly defined problem assist in understanding measures to take to solve the identified problem.

The central point drawn from both the regime analysis approach and the problem-solving approach is the direction they provide in terms of the manner in which marine pollution catastrophe should be tackled and how proper regulation, control and prevention should be fostered. It was indicated that the regime analysis approach promotes cooperation between and amongst the States to safeguard the shared interest. This is a trait that cannot be discarded from due to the transboundary nature of marine pollution. This catastrophe requires collective efforts from different States for it to be curbed, mitigated, or combatted.

To this end, the existence of a plethora of legal frameworks that regulate marine pollution makes apparent the seriousness of the problem of marine pollution. These legal frameworks range from international conventions, national legislation, policies and other initiatives, all concerned with the regulation, control and prevention of marine pollution.

It is equally prudent to indicate that a considerable number of current national legislation came as per the direction or recommendations of International Conventions which different States ratify to be bound by it. This is a clear indication that the marine field and community, particularly within the context and parameters of marine pollution control, adopted the regime analysis approach. This adoption should be proving to yield positive results in terms of containing the marine pollution problem, however, the opposite is the case. Marine pollution disasters continue to accelerate in the presence of these legal frameworks. This study will delve into this concerning acceleration to find what seems to be the problem. Hence, the problem-solving approach becomes relevant to the course.

It is indisputable that marine pollution is a global problem. It is a problem that warrants an urgent solution. This is because it poses a threat to the marine environment's sustainability and marine resources' sustenance. The promulgation of legal frameworks regulating, controlling and preventing marine pollution served



as a glimmer of hope in preserving the marine environment and resources. However, the said promulgation initiative is failing to stand the test of time as marine pollution continue to rise even in the existence of these legal frameworks. It is against this backdrop that the problem-solving approach will help in determining and understanding the type of problem that the acceleration of marine pollution poses to the environment. This help will enable the interested parties to fathom the magnitude of the problem faced. Thus, in the course of averting or eradicating that problem, they are well informed and can respond with measures in commensuration to the magnitude of the existing problem.

## **1.7. DEFINITION OF KEY CONCEPTS**

An understanding of the definition(s) of some of the key concepts in the study is essential to the appraisal of the scope, nature, extent and impacts related to marine pollution in South Africa and comparative jurisdictions. This section, therefore, provides succinct definitions of key concepts that have direct implications on the regulatory scope and the overall regulatory framework applicable to marine pollution and protection.

### **1.7.1. Pollution**

The United Nation Convention in the Law of the Sea (UNCLOS) defines pollution as:

A substance that, if added to any waters, would degrade or alter or form part of a process of degradation or alteration of the quality of the waters to an extent that is detrimental to their use by humans or by an animal or a plant that is useful to humans; and any water that contains a substance in such a quantity or concentration, or that has been so treated, processed or changed, by heat or other means, from a natural state, that it would, if added to any waters, degrade or alter or form part of a process of degradation or alteration of the quality of the waters to an extent that is detrimental to their

use by humans or by an animal or a plant that is useful to humans.<sup>61</sup>

In light of Section 1 of NEMA pollution can be understood as any environmental change caused by the emission of any activity such as substances, waves, dust, odours, radioactivity, constructions and provisions of services that can be engaged upon by either an individual or the state. The results of that change must have an adverse effect on the well-being of the environment, or on human health and must also adversely affect the productivity of both natural and controlled ecosystem and materials which are useful to people. The adverse effects may take place either immediately or in future.<sup>62</sup>

On the other hand, the European Environmental Agency (EEA)<sup>63</sup> provides it to be the energy or substances that are introduced into the environment, which have the effect of causing danger to human health, cause harm to the ecosystem and living resources. Such introduction can also lead to the interference and impairment of legitimate uses of the environment and amenities.<sup>64</sup> The NEMA views it as contaminations that cause impairment and vastly alter the usefulness of the environment due to the presence of certain substances.<sup>65</sup>

The Oxford Dictionary combined keywords used by European Environmental Agency and the National Environmental Management Act respectively, namely, “introduction” and “presence”. It states that pollution is the introduction or presence

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<sup>61</sup> (UNCLOS) A 1.

<sup>62</sup> (NEMA) Section 1.

<sup>63</sup> The European Environment Agency (EEA) is an agency of the European Union established for the purpose of advancing independent information that is thorough and informative pertaining to the environment and other issues related thereto.

<sup>64</sup> The regulation establishing the EEA was adopted by the European Union in 1990 and came into force in 1993, however work became operational in 1994. The regulation further established the European environment information and observation network with the core intention to “help the Community and member and cooperating countries make informed decisions about improving the environment, integrating environmental considerations into economic policies and moving towards sustainability, coordinate the European environment information and observation network”.

<sup>65</sup> (NEMA) Section 1(1).

of harmful substances or poisonous materials into the environment.<sup>66</sup> Scholars like Nathanson make one understand pollution as an addition of any substance into the environment at a rate faster than it can be controlled, recycled, diluted or be stored in a harmless place. Such substances include liquid, gas, sound, heat, solid and radioactivity.<sup>67</sup>

### **1.7.2. Marine pollution**

UNCLOS and Group of Experts on the Scientific Aspects of Marine Pollution<sup>68</sup> (GESAMP) use the same meaning when defining marine pollution, they both defined it as “a direct or indirect introduction by humans of substances or energy into the marine environment (including estuaries), resulting in harm to living resources, hazards to human health, hindrances to marine activities including fishing, impairment of the quality of seawater and reduction of amenities”.<sup>69</sup> This is the definition used on several and key scholarship in marine protection studies. The definition is structured broadly with other terms being undefined and appears to be vague. Such terms include “substance” and “deleterious”.

Therefore, marine pollution may include the introduction into the marine life any “substance” by humans of any nature whether gaseous, liquid or solid. To this end, and as long as national jurisdictions have not specifically defined “substance”, the regulatory regime may have or reach a wider scope of pollutants.<sup>70</sup> Of course, UNCLOS qualifies the definition by having regard to the deleterious effects of the harm caused by the pollution.

Still, the word ‘deleterious’ is vague and undefined. In the African continent, the Convention for the Protection, Management and Development of the Marine and

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<sup>66</sup> Oxford Dictionary.

<sup>67</sup> Nathasan 2017 [www.britannica.com/contributor/Jerry-A-Nathanson/4206](http://www.britannica.com/contributor/Jerry-A-Nathanson/4206) (Accessed on 27/08/ 2019).

<sup>68</sup> Group of Experts on the Scientific Aspects of Marine Environmental Protection has been advising the United Nations system since the year 1969 on issues relating to environmental protection that includes scientific aspects.

<sup>69</sup> A 1(4) of the United Nations Convention on the Law of Sea (1982).

<sup>70</sup> Nagle 2009 *UCDAVIS LAW REVIEW* 37.

Coastal Environment of the Eastern African Region (Abidjan Convention)<sup>71</sup> and the Amended Nairobi Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (Nairobi Convention)<sup>72</sup> address the vagueness of the UNCLOS definition through specific obligations of Parties towards the prevention of pollution. Both instruments respectively provide that:

The Contracting Parties shall endeavour to take all appropriate measures to prevent, reduce and combat pollution of the Convention area caused by coastal disposal or by discharges emanating from rivers, estuaries, coastal establishments, outfall structures or any other land-based sources and activities within their territories.

The above-mentioned obligation directs our attention to the source-to-sea system. Both the Abidjan Convention and the Nairobi Convention when addressing the vagueness of the UNCLOS definition of marine pollution highlighted the source-to-sea attributes *to wit*: the discharge coming from (a) estuaries, (b) rivers, (c) land-based activities and (d) coastal establishment.<sup>73</sup> On the other hand, the rapid increase of industrialisation leads to high emission loads that adversely affects the chemistry and interaction of the sea with the atmosphere, thus, catalysing the occurrence of ocean acidification.<sup>74</sup> At the same height, human littering exerts severe pressure on the marine environment by finding its way into the sea through storm runoff and river flow and cause marine pollution.<sup>75</sup>

The marine ecosystem concerns highlighted above unconsciously sensitised marine environment researchers and others within the environmental field that the

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<sup>71</sup> Convention for the Protection Management and Development of the Marine and Coastal Environment of the Eastern African Region (1985).

<sup>72</sup> Convention for Co-operation in the Protection and Development of the Marine and Coastal environment of the West and Central African Region and protocol (1981).

<sup>73</sup> Scientific and Technical Advisory Panel 2017 <https://stapgef.org/sites/default/files/publications/s2sbrief.pdf> accessed on (15/10/2020).

<sup>74</sup> Kibria 2015 <https://www.researchgate.net/profile/Golam> (Accessed on 15/10/2020).

<sup>75</sup> Galgani et al 2019 *Front. Mar. Sci.* 1.

earth is a system that connects the ocean, the land and the atmosphere.<sup>76</sup> Thus, environmental law researchers must desist from the tendency of addressing one segment to the total disregard of others. This amplifies the need to develop proper governance that will address issues relating to the source-to-sea system in a manner that seeks to achieve an outcome that will benefit all the segments linked to the sea or marine environment.

### 1.7.3. Environment

Section 1 of the National Environmental Management Act defines the environment as:

The surroundings within which humans exist and that are made up of the land, water and atmosphere of the earth; micro-organisms, plant and animal life; any part or combination of the land, water and atmosphere of the earth and micro-organism, plant and animal life and the interrelationships among and between them; and the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

According to the Merriam Webster Dictionary, environment is “defined as the complex of physical, chemical, and biotic factors such as climate, soil, and living things that act upon an organism or an ecological community and ultimately determine its form and survival”.<sup>77</sup> Scholars define environment differently. Cunningham, for example, defines environment as “the circumstances and conditions that surround an organism or group of organisms or the social and cultural conditions that affect an individual or community”.<sup>78</sup>

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<sup>76</sup> Steffen et al 2004 *Global Change and the Earth System: A Planet Under Pressure*, Royal 6-7.

<sup>77</sup> The Merriam-Webster Dictionary.

<sup>78</sup> Cunningham 2004 [https://www.memoireonline.com/04/12/5617/m\\_The-sociological-study-on-environmental-conservation-as-a-means-of-achieving-sustainable-development6.html](https://www.memoireonline.com/04/12/5617/m_The-sociological-study-on-environmental-conservation-as-a-means-of-achieving-sustainable-development6.html) (Accessed on 27/08/2019).

He further indicated that since humans occupy the natural, technological and social world, all these features form important parts of our environment. In terms of Canadian Environmental Protection Act 1999, the environment is defined as components of the earth that comprise of water, air and land, including all living organisms and the all layers of the atmosphere.<sup>79</sup> Minintere defines environment as “a set of physical, chemical, biological element and socio-economic, cultural, aesthetic, intellectual factors likely to have a direct or indirect, immediate or long-term impact on the development of the environment, human beings and human activities”.<sup>80</sup>

Section 2 of the Environmental Protection and Management Act, makes us understand the environment as the combination of the elements and conditions, either natural or man-made, composed or separated such as the air, land, sea, soil and water, including the entire atmosphere and the features of landscape and biodiversity.<sup>81</sup> The 1972 Stockholm Declaration states that the term environment could cover the complex interrelationship of all elements that form the framework, setting and living condition for mankind as a result of their impact and existence.<sup>82</sup> The New Zealand Environment Act of 1986 provides that it include all the natural and physical resources, together with the economic, social and cultural conditions which impact on the environment.<sup>83</sup> The English Environment Protection Act 1990,<sup>84</sup> explain the environment as a component consisting of air, water and the land or any of the components mentioned above.

The environment should be separated into three broad categories to be able to apply environmental principles such as polluter pays principle, under the first category namely “natural environment”, protection of environmental media is

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<sup>79</sup> Section 3 of the *Canadian Environmental Protection Act* of 1999.

<sup>80</sup> Cunningham 2004 [https://www.memoireonline.com/04/12/5617/m\\_Thsociological-study-on-environmental-conservation-as-a-means-of-achieving-sustainable-development6.html](https://www.memoireonline.com/04/12/5617/m_Thsociological-study-on-environmental-conservation-as-a-means-of-achieving-sustainable-development6.html) (Accessed on 27/08/2019).

<sup>81</sup> *Environmental Protection and Management Act* 11 of 2015.

<sup>82</sup> The Stockholm Declaration is the Declaration of the United Nations Conference on the Human Environment. The Declaration was adopted in 1972 with the object of recognizing to right to a healthy environment.

<sup>83</sup> Section 2 of the *New Zealand Environment Act* 127 of 1986.

<sup>84</sup> *Environmental Protection Act* of 1990.

included, under the second category being “man-made environment” the cultural heritage is included and under the third category of “human environment”, regulations on food content, products, safety issues, leisure and economic health are included.<sup>85</sup>

#### **1.7.4. Marine environment**

The marine environment is understood to include all land and resources that are found in and under the water that the state has exclusive control and authority to manage. Such resources include but are not limited to the state’s subsoil and seabed of the outer continental shelf, fishery resources, scenic values of the waters, recreational and economic benefits.<sup>86</sup> The National Geographic Society provided a brief definition of marine environment to mean a natural or artificial connection between saline waters and all forms of marine life.<sup>87</sup>

#### **1.7.5. Ecosystem**

The ecosystem is defined in terms of Section 1 of the National Environmental Management Act as a “dynamic system of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit”. The Merriam Webster Dictionary regards it as “the complex of a community of organisms and its environment functioning as an ecological unit”.<sup>88</sup> Tinsley defined an ecosystem as a category of a physical system that includes organisms and inorganic components that are comparatively stable, open and of different sizes and kinds. He indicated that it is a community that comprises both living organisms and non-living components that interacts as a system.

He further indicated that the ecosystem is comprised of two major parts being biome and habitat and thus “all parts of such an ecosystem-organic and inorganic, biome

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<sup>85</sup> Romppanen 2010 *Nordic Environmental Law Journal* 92.

<sup>86</sup> Levin et al 2016 *Marine Policy* 246.

<sup>87</sup> The National Geographic Society forms part of the world’s largest non-profit scientific and educational organizations. Its focus is directed to two things *viz* exploration of the planet and protection of the planet.

<sup>88</sup> The Merriam-Webster Dictionary.

and habitat may be regarded as interacting factors which in a mature ecosystem, are in approximate equilibrium, it is through their interactions that the whole system is maintained”.<sup>89</sup> Stoddard on the other hand indicated that an ecosystem is a system composed of one or more living organisms functioning and interacting together within an environment that is physically and biologically effective.<sup>90</sup>

#### **1.7.6. Law Principles**

In the context of this study, the terminology "law principles" or “legal principles” speaks to environmental principles, ideas, policies and/or legal framework. Therefore, in this study, law is a general nature, objective(s) and status of law principles, especially environmental law principles, will be important because they are the important concepts that underlie all environmental legislation, policies, and programmes both openly and tacitly. International best practices in the context of an ecosystem and the prevention of marine pollution provide guidance on the effective regulation and management of the marine environment and which should be incorporated in the national regulatory frameworks pertaining to marine protection.

#### **1.7.7. Environmental Sustainability**

According to Di Vaio and Varriale, environmental sustainability received a considerable amount of attention from scholars and environmental operators in the last 30 years.<sup>91</sup> The concept derives from the broader concept of sustainable development, and “represents one of the three identified dimensions of sustainability, beyond the economic and social dimension”.<sup>92</sup> It is better explicated in the context of green ports, and as an issue, environmental sustainability is primarily and usually associated with “vessel and cargo handling operations, industrial activities in ports, port planning and extension initiatives and hinterland accessibility”.<sup>93</sup>

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<sup>89</sup> Trudgill 2007 *Progress in Physical Geography* 521.

<sup>90</sup> Malanson 2014 *Progress in Physical Geography* 252.

<sup>91</sup> Di Vaio and Varriale 2018 *Sustainability* 1.

<sup>92</sup> Di Vaio and Varriale 2018 *Sustainability* 2.

<sup>93</sup> Di Vaio & Varriale 2018 *Sustainability* 2.



In the year 2019, The Establishment of the African Continental Free Trade Agreement (AfCTA) was entered into force.<sup>94</sup> The agreement advocates for trade relationships amongst African countries in respect of goods and other services.<sup>95</sup> It is apparent that most of the South African Development Community (SADC) countries depend on minerals and natural resources to boost their respective countries' economic growth.<sup>96</sup> To this end, operational activities associated with the extraction of minerals and other natural resources poses a threat to environmental sustainability.

On the other hand, there is reasonable anticipation that the advent of the AfCTA will accelerate the export demand of minerals amongst countries in line with the trade relationship established. Thus, the demand will require an increased volume of production that will consequently hamper environmental sustainability. Shockingly, the AfCTA is silent about a plan or any measures that should be employed to ensure environmental sustainability whilst promoting trade liberalization.

In essence, the AfCTA has added itself amongst the environmental concerns that pose a threat to the sustainability of our environment. This is underscored by the years in which the agreement was discussed, established and effected. The agreement was implemented in an era where the importance of protecting the environment for the future generation is a general tune. Despite that, the agreement sacrificed the importance of environmental sustainability at the expense of economic growth.

## **1.8. RESEARCH METHODOLOGY**

This is a legal thesis that is non-empirical qualitative research. It does not include data collection, questionnaires, systematic data analysis, observations and/ or interviews. The study will be based on library materials that include but are not

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<sup>94</sup> African Continental Free Trade Agreement (2019).

<sup>95</sup> Tralac 2020 *The African Continental Free Trade Area 2*.

<sup>96</sup> Sibanda 2020 *Trade, Human Rights and Environmental Sustainability in Africa with Special Reference to the Extractive Sector* 442.

limited to textbooks, reports, legislations, regulations, charters, policies, amendments to the legislation, journals or academic journals, government gazette, constitution, national and international journals.

A comparative study of the South African legal system with different countries and international frameworks on the regulation of marine pollution will be strongly considered. As a research method or research approach “comparative analysis is conducted mainly to explain and gain a better understanding of the causal processes involved in the creation of an event, feature or relationship usually by bringing together variations in the explanatory variable or variables”.<sup>97</sup> It also helps to establish relationships between two or more phenomena and provide valid reasons.<sup>98</sup>

In this study a methodology for comparative legal research is considered in its different meanings, and how it serves the rather different goals of (a) understanding law, (b) comparing (*tertium comparationis*), (c) focusing on similarities (*praesumptio similitudinis*), building a system (of effective marine pollution in South Africa, for instance), determining the ‘better law’ or how to better the law, and others”.<sup>99</sup>

## **1.9. REVIEW OF PREVIOUS STUDIES**

### **1.9.1. Selected Marine pollution incidents in South Africa**

The University of Cape Town, for example, investigated the presence of small plastic fragments on South Africa’s beaches and repeated the investigation every 10 years since the mid-1990s. The study has found that local sources were the most contributors to plastic pollution.<sup>100</sup> Debris was sampled at 82 sandy beaches along the South African coast in 1994, 2004 and 2015. It was found that plastic material contributes an enormous amount of marine pollution making up at least 80% of

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<sup>97</sup> Pickvance 2005 *Journal of Housing and the Built Environment* 7.

<sup>98</sup> Azarian, 2011 *International Journal of Humanities and Social Science* 117.

<sup>99</sup> Michaels 2006 Oxford Handbook of Comparative law 340.

<sup>100</sup> Ryan 2018 <https://www.news.uct.ac.za/article/-2018-02-27-small-plastic-pollution-on-sa-beaches> (Accessed on 30/08/2018).

debris items at all beaches.<sup>101</sup> The magnitude of the pollution in South African beaches identified by the study has been seen somewhere else. The 2017 International Coastal Cleanup report, for example, provided that plastic comprises 80% of all marine debris with single-use food and beverages containers being one of the common items and at least 267 different species are known to have suffered because of marine debris by way of entanglement and ingestion.<sup>102</sup>

South Africa saw numerous oil pollution over the years in the presence of legal frameworks enacted to prevent and control marine pollution. The Castillo De Bellver is regarded as South Africa's biggest oil spill which took place at Saldanha Bay, Cape Town in year 1983.<sup>103</sup> As Moldan *et al* note, the accident occurred in an ecologically and economically sensitive area. The area has an abundance of fauna, flora and fish. The oil spills have adversely affected approximately 1500 gannets that were preparing for the breeding season. As a result, of the oil spill, the local fish stock was negatively affected.<sup>104</sup>

In the year 2000, South Africa experienced the M V Treasure Sank. The oil spill took place between Dassen and Robben islands. These islands support the third largest colonies of African Penguins *Spheniscus demersus*.<sup>105</sup> As a result of the oil spill, 19000 penguins were oiled. They were taken in so that they could be cleaned. Approximately 150 adult Penguins that were affected by the oil spills died in the wild and 2000 died within the first month after being taken in. At a later stage, the majority of birds were taken back to the island. However, the damage had already been done to the species as pair bonds were disrupted and breeding success decreased, and chicks and eggs were lost.<sup>106</sup>

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<sup>101</sup> Ryan et al. 2018 *Environmental Pollution* 1010.

<sup>102</sup> International Coastal Cleanup Report 2017  
Report [https://oceanconservancy.org/wp-content/uploads/2017/06/International-Coastal-Cleanup\\_2017-Report.pdf](https://oceanconservancy.org/wp-content/uploads/2017/06/International-Coastal-Cleanup_2017-Report.pdf) (Accessed on 30/08/2018).

<sup>103</sup> Chetty 2015 *Legal measures for the prevention of oil pollution by ships and civil liability for oil pollution damage in South African marine and coastal waters* 11.

<sup>104</sup> Moldan et al 1985 *Marine Pollution Bulletin* 97.

<sup>105</sup> Crawford et al 2000 <http://www.adu.uct.ac.za/adu/projects/sea-shore-birds/oil-spill/initialeffects#:~:text=The%20bulk%20ore%20carrier%20MV,demersus%2C%20on%2023%20June%202000.> (Accessed on 30/08/2018).

<sup>106</sup> Crawford, et al, 2010 *South African Journal of Marine Science* 171.

A stricken bulk carrier Seli 1 is an incident that produced thick oil in Blouberg Beach, Cape Town after the vessel having run aground due to rough sea conditions and bad weather conditions that affected the city over the past days.<sup>107</sup> The maritime authorities pumped out tons of fuel and removed the cargo to mitigate the harm that may ensue and prevent environmental disaster. By the time the city was informed of the oil leakage, 1 km of the beach strip was already affected with two seagulls dead as a result of the leakage.<sup>108</sup> The city employed precautionary measures by informing the residents to stay away from the affected area and banned swimming and any recreational activity.<sup>109</sup>

### **1.9.2. The national legislative and regulatory frameworks on marine pollution.**

Protection of the marine environment through the prevention and control of marine pollution has always been a concern to governments and other interested parties. The idea of preventing and controlling marine pollution was catalyzed by a rapid growth of marine pollution that took place around the world. Due to the important role played by the oceans, many countries around the world took a stance against marine pollution by enacting laws that prevent and control marine pollution. South Africa was one of the countries that took a stance against this outbreak.

In South Africa, various laws and policies regulate marine pollution. Those laws and policies have set out punishment for non-compliance. The main purpose of enacting laws and policies that regulate marine pollution is to ensure that the marine ecosystem, ocean economy and human health is protected.<sup>110</sup> South Africa has embraced the idea possessed by many countries around the world that the best way of preventing marine pollution depends upon the ability and willingness of the

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<sup>107</sup> Jurgens and Eggiton 2011 <https://www.timeslive.co.za/news/south-africa/2011-09-03-oil-spill-slicks-cape-town-beach/> (Accessed 30/08/2018).

<sup>108</sup> Jurgens 2011 <https://www.timeslive.co.za/news/south-africa/2011-09-03-oil-spill-slicks-cape-town-beach/>. (Accessed 30/08/2018).

<sup>109</sup> Jurgens 2011 <https://www.timeslive.co.za/news/south-africa/2011-09-03-oil-spill-slicks-cape-town-beach/> (Accessed 30/08/2018).

<sup>110</sup> Raubenheimer 2016 *Towards an improved framework to prevent marine plastic debris* 75.

states to co-operate in the common objective of preventing marine pollution by prescribing and enforcing laws and policies.<sup>111</sup>

As a result, South Africa promulgated various legal frameworks preventing and controlling marine pollution. The Constitution of the Republic of South Africa, 1996 has incorporated the protection and prevention of environmental pollution which also covers marine pollution.<sup>112</sup> The National Environmental Management Act although it does not directly deal with marine pollution, it plays an important role and assists in preventing conduct that may have adverse effects on the marine environment. The Marine Living Resource Act<sup>113</sup> was promulgated to “provide for the conservation of marine ecosystem, the long-term sustainable utilization of marine living resource and the orderly access to exploitation and protection of certain living resources. One of its objectives is the need to minimize marine pollution”.<sup>114</sup> This objective can only be met through the proper control and regulation of marine pollution.

In its pursuit of prevention and control of marine pollution, South Africa has ratified some International Conventions and enacted them as national legislation. Annexure I – IV of MARPOL was ratified by South Africa and has been enacted as national legislation through the Marine Pollution Act 2 of 1986.<sup>115</sup> Due to the world’s concern on marine pollution from oil, South Africa became a party to the International Convention for the Prevention of Pollution of the Sea by Oil. Other conventions that have been ratified or being enacted as national legislation includes the Civil Liability Act 6 of 1981, Marine Pollution Intervention Act 64 of 1987. South Africa further acceded to the Nairobi and Abidjan Convention in 2002, this was due to the country’s location at the junction of the oceans, and hence it participated. These legal frameworks are concerned with the issue of protection, management and development of the marine and coastal environment.

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<sup>111</sup> Schiffman 2001 *International Law and Institutions* 2.

<sup>112</sup> Section 24 of the *Constitution of the Republic of South Africa*, 1996.

<sup>113</sup> *Marine Living Resource Act* 18 of 1998.

<sup>114</sup> Section 2 of *Marine Living Resource Act* 18 of 1998.

<sup>115</sup> Naidoo 2015 *Should seas have standing? : A critical study of plastic marine debris and pollution laws in international and South African law* 41.

### 1.9.3. International Legal Framework and Action on Marine Pollution

Before the year 1900, the marine pollution field had few multilateral and bilateral agreements concluded to regulate marine pollution.<sup>116</sup> The focus of the environmental agreement was based on unrestrained national sovereignty, particularly over boundary waters, fishing rights, navigation and most importantly natural resources.<sup>117</sup> In the year 1900, a new attitude towards environmental protection emerged and different countries concluded agreements to protect commercially valuable species.<sup>118</sup>

The 1902 Convention for the Protection of Birds Useful to Agriculture<sup>119</sup> is one of the first international conventions. It was because of this convention that the international world realized that protecting commercially valuable species without protecting the environment in which those species lives, is not a good idea. Hence, in the year 1909, the United States made a step at an international level to act against marine pollution by promulgating a treaty called the United Kingdom Boundary Waters Treaty.<sup>120</sup> In terms of Article IV of this treaty, it is provided that “water shall not be polluted on either side to the injury of health or property of the other side”.<sup>121</sup>

However, questions have been raised if the treaty was designed to protect the environment or was a peace treaty between the two nations. In his lecture titled “The Boundary Waters Treaty 1909 – a Peace Treaty? Walker posed “the question of whether the Boundary Waters Treaty is a treaty about water resources per se or is it more accurately viewed as a Peace Treaty”.<sup>122</sup>

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<sup>116</sup> Weiss 1993 *Geo. L.J.* 675.

<sup>117</sup> Weiss 1993 *Geo. L.J.* 675.

<sup>118</sup> Weiss 1993 *Geo. L.J.* 676.

<sup>119</sup> The 1902 Convention for the Protection of Birds Useful to Agriculture is deemed to be the first multilateral international convention that sought to protect specific wildlife species.

<sup>120</sup> United Nations Boundary Waters Treaty (1909) is the treaty between two States namely the United States and the Great Britain. It establishes an International Joint Commission of Americans and Canadians between the two States for the purpose of overseeing any issue pertaining to waters on the boundary between these States.

<sup>121</sup> A IV of the United Nations Boundary Waters Treaty (1909).

<sup>122</sup> Walker 2015 *Canada-United States Law Journal* 171.

In the 1950s and 1960s the world experienced many incidents of marine pollution from oil and the international community got concerned with marine pollution from oil to such an extent that they see the need to promulgate conventions to prevent and control marine pollution, thus multilateral international environmental agreements increased significantly.<sup>123</sup> Initially, intervention through relevant conventions was negotiated based on cases such as civil liability for damages caused by oil pollution, pollution casualties and the need to control oil pollution, the position changed when the international community learns that oil is not the only source of marine pollution.

The existence of different sources of marine pollution expanded the scope of international agreements. As a result, numerous conventions were enacted by the international community to prevent and control marine pollution.<sup>124</sup>

UNCLOS was enacted and provided a broader legal regime that promotes law and order pertaining to marine and oceans around the world, it has established a set of rules that govern the operation and usage of the oceans and marine resources. The Convention advocates for a holistic approach in solving matters pertaining to the sea and this approach is prompted by the fact that most, if not all the problems within the ocean space are interrelated thus warrants to be addressed as a whole.

The advent of this Convention integrated the traditional rules that governed and regulated ocean concerns and new rules crafted to address new concerns such as marine pollution.<sup>125</sup> It provided room for the development of other areas of the law pertaining to the sea such as marine pollution and further positioned itself properly to govern other aspects of ocean space including but not limited to delimitation,<sup>126</sup>

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<sup>123</sup> Weiss 1993 *Geo. L J* 677.

<sup>124</sup> Oyende 2012 *An appraisal of the law relating to oil pollution in the inland, territorial and maritime waters of Nigeria* 82. For a general discussion in Nigeria about oil spillage and environmental pollution see Adam and Odoeme 2014 *Law and Practice of Oil Spillage Laws in Nigeria*; Adam 2016 *Compensation for Environmental Liability in Nigeria: Law and Practice*

<sup>125</sup> Xiaolu 2011 *The International Legal Framework for Prevention of Vessel-source Pollution and Its Implementation in Chinese Legislation* 25.

<sup>126</sup> UNCLOS A 15.

environmental control,<sup>127</sup> marine scientific research,<sup>128</sup> economic and commercial activities,<sup>129</sup> transfer of technology and the settlement of disputes relating to ocean matters.<sup>130</sup>

The key feature of the Convention is a commitment by the international community to prevent and control marine pollution. This is underscored by an obligation imposed on the state to ensure control, prevention and an effort to combat marine pollution within their States. The Convention further encourages States to contain pollution arising from their territories and not to spread to other States.<sup>131</sup> In maintaining the practicability of its imposed obligation, the Convention allows other States to conduct marine scientific research in the Economic Exclusive Zone and on the continental shelf subject to the consent of the coastal States, the consent of the coastal State is however peremptory if the other States are to conduct research for peaceful purposes and fulfil the specified criteria.<sup>132</sup>

The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters endeavors to protect the marine environment from the acceleration of marine pollution through waste and other resources emanating from human activities. This is apparent from the object of the Convention that emboldens effective control and management of marine pollution sources that contribute immensely to the acceleration of marine pollution.<sup>133</sup> This acceleration fuels the need for practical initiatives to be employed to mitigate or curb the acceleration and consequently prevent marine pollution from human activities.

In taking heed to the objectives ascribed in the said Convention, a positive initiative was taken in the year 1996, when the London Convention and Protocol was agreed upon amongst the contracting parties. The kernel that induced the consensus amongst the contracting parties was chiefly to remodel the Convention to align it

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<sup>127</sup> UNCLOS Part XII.

<sup>128</sup> UNCLOS A 245, 246 & 247.

<sup>129</sup> UNCLOS A 27 & 28.

<sup>130</sup> UNCLOS A 5.

<sup>131</sup> UNCLOS A 194.

<sup>132</sup> UNCLOS A 59.

<sup>133</sup> Objective of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972).



with the modern concerns pertaining to marine pollution sources. The need to remodel the Convention culminated in its existence, thus, the Protocol assumed its responsibilities. Like the erstwhile Convention, the Protocol also promotes the need to effectively control all sources of marine pollution, however, it accentuates the need for contracting parties to employ effective measures that will deter people from polluting the marine environment by dumping waste in the sea.<sup>134</sup>

Concerning dumping, the London Convention and Protocol has criteria relating to what is allowed to be dumped in the sea and what is restricted from being dumped in the sea. Materials and chemicals such as oils products, plastics and radioactive waste are found in the “black list” while materials and chemicals such as but not limited to scrap metals, acids and lead are found in the “grey list”.<sup>135</sup> Although both listed items are powerful and harmful, blacklisted items are restricted from being dumped into the sea whereas grey listed items can be dumped subject to obtaining a special permit to do so.<sup>136</sup>

The Convention for the Prevention of Pollution from Ships sensitizes parties to the Convention about the need to preserve both the human environment and the marine environment. Furthermore, parties ought to understand the dire consequences that the marine environment will suffer due to the release of oil and other harmful substances. Under the circumstances, how the release occurs is immaterial. Any release, be it negligent, deliberate or intentional constitutes a severe source of pollution. The Convention further urges the parties to appreciate the magnitude of the responsibility held by the Convention as the first multilateral mechanism to be promulgated with the core intention to protect the marine environment from pollution through oil and other harmful substances.

Thus far, the Convention has fared fairly well in the quest of ensuring the preservation and wellness of the marine environment and deserve a considerable

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<sup>134</sup> London Convention and Protocol (1996).

<sup>135</sup> Bashat 2003  
file:///G:/FINAL%20DOCTORAL%20RESEARCH/PROBLEM%20SOLVING%20A  
PPROACH/10.1.1.462.9964.pdf (Accessed on 30/08/2018).

<sup>136</sup> Kindt 1984 *Catholic University Law Review* 80.

amount of appreciation from the parties. In furtherance of the quest to preserve and protect the marine environment from marine pollution, Article I of the Convention encourages parties to embark on a mission to eliminate the occurrence of intentional discharge into the marine environment and curb the occurrence of accidental discharge.

## **1.10. SCOPE OF THE STUDY AND CHAPTER LAYOUT**

The study will be organised and or structured into five chapters as follows:

### **Chapter 1**

Chapter 1 outlines the contextualization of the study. It deals with the important aspects relating to the study. This includes the following: The problem statement of the study indicates the problem which this study seeks to address. The purpose and objective of the study indicate what this study seeks to achieve upon its completion. This chapter goes further to define the key concepts used in the study and also deals with the rationale and significance of the study which indicates the relevancy and importance of the proposed study. A theoretical framework is also indicated in this chapter. Brief content about the prevention and control of marine pollution is discussed in this chapter under the heading literature review.

### **Chapter 2**

Chapter 2 assesses both the national and international normative framework relevant to the prevention and control of marine pollution. The chapter seeks to expose the strength and weaknesses the loopholes and inconsistencies in the legal framework to determine whether marine pollution is indeed prevented and controlled under the existing legal framework. Therefore, the focus is on the efficacy of the existing legal frameworks on marine pollution prevention and control.

### **Chapter 3**

The chapter deals with an extensive discussion on the existing legal frameworks preventing and controlling marine pollution. It touches also on the regional legal frameworks. The International legal framework for addressing marine pollution, for

example, is UNCLOS which “has created a uniform system that seeks to safeguard the freedom of navigation and the interest of coastal states in protecting and preserving the marine environment within their jurisdiction”.<sup>137</sup>

#### **Chapter 4**

This chapter addresses inter-governmental bodies’ efforts in the prevention of marine pollution. Therefore, the discussion includes bodies like the Intergovernmental Oceanographic Commission (IOC), United Nations Environment Programme (UNEP), Incident Management Organisation (IMOrg), Northwest Pacific Region (NOWPA) Food and Agricultural Organization of the United Nations (FAO) and Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP). This chapter will also consider non-governmental bodies such as the supporting bodies that assist in the quest of achieving marine environment protection. Such non-governmental bodies include but are not limited to the Sea Shepherd, World Wildlife Fund (WWF), Global Ocean Observing System (GOOS), Global Tsunami Warning System (GTWS), Sustainable Seas Trust (SST), Earth Watch Institute, Beach Clean-up and Trash Bash.

#### **Chapter 5**

This chapter wraps up the study with a general conclusion and makes recommendations drawn from the discussions and findings in the different chapters of the study.

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<sup>137</sup> Onwuegbuchunam et al 2017 *American Journal of Traffic and Transportation Engineering* 62.

## CHAPTER 2

### CRITICAL APPRAISAL OF NATIONAL AND INTERNATIONAL NORMATIVE FRAMEWORKS ON PREVENTION AND CONTROL OF MARINE POLLUTION

#### 2.1. INTRODUCTION

The focus of this chapter is an in-depth assessment of both the national and international normative frameworks relevant to the prevention and control of marine pollution. The chapter will seek to expose the strengths and weaknesses, loopholes and inconsistencies in the legal frameworks to determine whether marine pollution is indeed prevented and controlled under the existing legal frameworks. Therefore, the focus will be on the efficacy of the existing legal frameworks on marine pollution prevention and control.

The relevant South African environmental protection is constituted by a panoply of instruments. Those specific to marine protection include the Marine Pollution Act, Marine Pollution Intervention Act, Prevention and Combatting of Pollution of the law of Sea by Oil Act, Civil Liability Act, MLRA, MZA. Those addressing environmental protection in general include, for example, the NEMA, NEM: ICMA, NEM: PAA and NEM: WA.

Below is an in-depth discussion of the relevant legal frameworks. It is important to note, however, from the onset and in my view that the continuance of marine pollution despite the existence of a legal framework regulating it is caused by a lack of stringent measures contained in the legal frameworks regulating marine pollution.

## **2.2 NATIONAL NORMATIVE FRAMEWORK: *CAPITA SELECTA***

### **2.2.1. General**

The sea plays an important role in the lives of South African people due to various activities that it offers such as fishing, tourism, production of seafood and some pharmaceutical objects that are used by people. Marine Pharmacology relies on the proper protection and sustainability of the marine environment for its emergence and effective operation.<sup>138</sup> Its emergence is imperative due to the changing patterns in disease ailments and the emerging of new diseases as a result of the changing environment and the rapid growth of the world population which overburdens the existing resources for drugs production of pharmaceutical products.<sup>139</sup>

The drugs' manufacturers have identified the marine environment as a solution to discover new drugs due to its enormous diverse resources.<sup>140</sup> Marine pollution poses a serious threat to these activities hence an initiative was taken to promulgate a legal framework to mitigate, curb or combat marine pollution. It is unfortunate that despite the existence of the legal framework regulating marine pollution, this problem still exists and continues to grow.

#### ***2.2.1.1. Marine Pollution (Prevention of Pollution from Ships) Act of 1986.***

The Marine Pollution Act is national legislation that emanates from the International Convention named the International Convention for the Prevention of Pollution from Ships<sup>141</sup> which has been ratified and assented to by South Africa. Article 1 of this Convention deals with the general obligations under the Convention. It puts an obligation on every party-state to prevent marine pollution. This means South Africa as a party state must come up with national legislation to prevent pollution

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<sup>138</sup> Kanase and Singh 2018 *J Med Sci* 52.

<sup>139</sup> Malve 2016 *J Pharm Bioallied Sci.* 83.

<sup>140</sup> Malve 2016 *J Pharm Bioallied Sci.* 83.

<sup>141</sup> The International Convention for the Prevention of Pollution from Ships (1973).

of the marine environment. The relevant provision of Article 1(1) of the said Convention reads as follows:

[T]he parties to the Convention undertake to give effect to the provisions of the present Convention and those Annexes thereto by which they are bound, in order to prevent the pollution of the marine environment by the discharge of harmful substances or effluents containing such substances in contravention of the Convention". This Article is commendable because it lays down universal obligations to all State Parties irrespective of their level of development. All party states are treated equally, recognised equally and are tasked with the same responsibilities under the Convention.

The problem arises when Article 4(1) of this Convention that deals with the contravention and violations of the Convention is invoked. Article 4(1) provides that:

[A]ny violation of the requirements of the present Convention shall be prohibited and sanctions shall be established therefore under the law of the Administration of the ship concerned wherever the violation occurs. If the Administration is informed of such a violation and is satisfied that sufficient evidence is available to enable proceedings to be brought in respect of the alleged violation, it shall cause such proceedings to be taken as soon as possible, in accordance with its law.

Article 4(1) gives the party states powers to deal with an act of marine pollution that occurred within its territory to exercise its laws when sanctioning violation. It is submitted that Article 4(1) introduces the Chevron-like deference to State Parties. The Chevron principles, named or established after the 1984 United States Supreme Court case *Chevron U.S.A., Inc. v. Natural Resources Defense Council*,

*In.*,<sup>142</sup> which is a principle of administrative law in terms of which courts are required to refer to the interpretation of statutes that are made by the government bodies that have been afforded the powers to ensure compliance with those statutes provided that the interpretations are not reasonable or not judiciable. The application of Article 4(1) detracts from the effectiveness of the Convention as an international instrument, and its good purport may be lost in countries with lax laws and an ineffective justice system.

Article 4(1) in my view also has the potential of opening a loophole on what this Convention seeks to achieve. This Convention seeks to “prevent” the pollution of the marine environment by the discharge of harmful substances or effluents and a loophole is created in the sense that other states may conduct thorough research on which state has the most lenient legal framework regulating marine pollution and which one has the most stringent legal framework regulating marine pollution. This might influence certain decisions particularly in terms of transportation through ships. The state with the most lenient legal framework is likely to be the most preferred route, as such it will become more vulnerable or more susceptible to marine pollution incidents. This is because other states will be aware that should they violate this Convention in the process of transporting their goods while they are within the territory of that party’s state, the sanctions that will be imposed against them will be bearable because of the leniency of that state’s regulatory legal framework.

Where a violation has occurred, the aggrieved state has two options, which are stipulated in terms of Article 4(2) paragraph (a) and (b). The Convention allows for the appropriate sanction or punishment to be determined by the State Parties either: (a) according to procedures applicable in their laws or (b) provide the relevant information to the State of the ship in question “such information and evidence as may be in its possession that a violation has occurred”. This study focuses more on Article 4(2)(b) since paragraph (a) will fall within the explanation given above pertaining to Article 4(1). The fact that a state can decide not to do anything with an

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<sup>142</sup> Chevron U.S.A., Inc. v. NRDC, 467 U.S. 837 (1984) para 843.

offender does not reflect the efforts of deterring people from engaging in marine pollution activities.

Article 4(3) (b) allows an incident that occurred in a certain state to be administered in a different state. It provides that upon the submission of evidence of a violation of the Convention by the aggrieved state or party to the administration of the ship that contravened the Convention, such administration shall duly provide the state or the party that submitted evidence of the action that has been taken against the perpetrator. This means that once the aggrieved state decides to act in accordance with Article 4(3) (b), the administration of the ship that caused damage shall have the powers to decide what to do with the perpetrator and duly inform the aggrieved state. The likelihood is that the administration may not impose strict penalties against themselves and their subjects. It is because of these types of Conventions that marine pollution will continue to be a serious problem.

South Africa as a party state to the international Convention that prevents pollution of the marine environment by the discharge of harmful substances or effluents containing such, heeded to Article 1(1) of the above mentioned Convention and outlined how its national legislation, in this case, the Marine Pollution Act, will prevent pollution of the marine environment.<sup>143</sup> Under this Act, the focus is specifically on Section 3(1) (a) and (b) under Regulations and Section 3A that deals with the “Offenses and Penalties”. In terms of Section 3(1) (a) of the Marine Pollution Act, it is provided that “the Minister may make regulations relating to the carrying out of, and giving effect to, the provisions of the Convention”.

Entrusting the Minister with a task that needs a specialised skill is worrisome especially with the political dynamics involved in our country. In South Africa, Ministers are not tasked with the responsibilities based on their expertise or field of interest, there is thus a possibility that the minister who is entrusted with the responsibility to execute Section 3(1) (a) responsibilities, has no required knowledge

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<sup>143</sup> *Marine Pollution (Prevention of Pollution from Ships) Act 2 of 1986.*



and/or expertise pertaining to the prevention of pollution of marine environment. That being said, the possibility of the existence of a team of experts working with the minister in terms of these issues is not overlooked. However, the fact that the minister has a final say is a serious concern.

Furthermore, Section 3(1) (b) allows particular ships of a particular class to be exempted from all or any of the provisions of the Convention. This section gives an impression that it is not meant to protect against pollution of the marine environment, but to protect certain states or individuals due to its lack of transparency. The Act fails to address explicitly or to clearly indicate the following: What is considered to be “a ship of a particular class”? Under what circumstances those ships must be exempted? What is the purpose of exempting those ships? How is that exemption beneficial to the main objective of preventing pollution of the marine environment?

Section 3A(1)(a) and (b) of this Act is clear on the consequences of violation by stating that “any person who contravenes any provision of this Act or the Convention or who fails to comply with any provision thereof with which it is his or her duty to comply, shall be guilty of an offence” and also that both the owner and the master will be held accountable for that contravention as it is clearly stipulated under paragraph (b) that “the owner and the master of a ship that does not comply with the requirements of this Act and the Convention shall each be guilty of an offence”.

This is a commendable section because it seeks to prosecute all the relevant parties involved in the ship that has contravened this Act or the Convention. The fact that both the owner and the master will be faced with prosecution demonstrates positive efforts towards the objective of preventing pollution of the marine environment. It is through this kind of commitment that the pollution of the marine environment will be prevented.

The Act provides that “any person convicted of an offence under subsection (1) shall be liable to a fine not exceeding R500 000, or to imprisonment for a period not

exceeding five years or to such fine as well as such imprisonment”,<sup>144</sup> the legislature’s approach failed to consider the fact that the strength of the currency differs. Punishing the perpetrator by way of a fine using the aggrieved party’s currency may not be a sufficient measure that can be used to prevent pollution of the marine environment due to the possibility that in terms of the perpetrator’s state R500 000.00 may not be sufficient enough to deter the perpetrators from causing pollution again.

Perpetrators can even go to an extent of making that amount part of their contingency plan, apart from that, it has been indicated that deterring environmental violations through fines have demonstrated disparities when coming to the imposition of those fines. Lynch examined petroleum companies that were fined for violations of the environment and found that penalties are higher in white census tracts compared to black census tracts and in high-income tracts compared to low-income tracts and these disparities could not be explained by the seriousness of the violation or the number of prior violations.<sup>145</sup>

Apart from the disparities in criminal sanctions demonstrated above, using criminal courts as a means to find justice in respect of environmental cases do not bear fruitful results due to the attitude of the prosecutors and judges. Prosecutors are reluctant to get involved in environmental cases because of the formidable attitudinal and misconception that environmental cases are complex and impossible to win because they need someone with advanced knowledge and a degree in environmental sciences.<sup>146</sup> On the other hand, judges believe that environmental cases are better handled civilly or administratively rather than in a criminal way. Moreover, they are quick to dismiss environmental prosecution in a criminal court and advise parties to institute it in a civil court or handle it administratively.<sup>147</sup>

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<sup>144</sup> Section 3A (4) of *Marine Pollution (Prevention of Pollution from Ships) Act 2 of 1986*.

<sup>145</sup> Barrett et al 2018 *Am J Crim Just* 533.

<sup>146</sup> U.S Department of justice 1994 <https://www.ncjrs.gov/pdffiles1/Digitization/143270NCJRS.pdf> (Accessed on 20/08/2019).

<sup>147</sup> U.S Department of justice 1994 <https://www.ncjrs.gov/pdffiles1/Digitization/143270NCJRS.pdf> (Accessed on 20/08/2019).

It is historically proven that when using criminal law to sanction unlawful conducts the results are capable of condemning socially objectionable conduct.<sup>148</sup> It is unfortunate that due to lack of awareness and sufficient information to the public about the importance of protecting the marine environment, marine pollution acts are not seen to be immoral thus criminal courts are not keen to prosecute cases in that field and condemn an emerging socially objectionable conduct of marine pollution. Until such time all the courts become prepared to take part in combatting marine pollution, this problem will continue to grow.

Should criminal courts become active in prosecuting environmental cases, it is common cause that they will impose criminal sanctions against the perpetrators to deter them from engaging in conduct that can cause marine pollution. In doing that, they should take cognisance of the fact that other marine pollution conducts have the effects of causing irreparable harm, as such the sanctions imposed upon the perpetrators should be harsh enough to deter future environmental crimes.<sup>149</sup> Harsh sanctions will change the perception held by the majority of people that the ocean never gets polluted because it can cleanse itself. This ignorant thought harboured by the majority perpetuates marine pollution conducts.

Like any other court, criminal law courts will also have their shortcomings in prosecuting environmental violations. The nature of a criminal sanction is that an offender will only be penalised after a successful prosecution.<sup>150</sup> The lack of expertise in this field and its under-researched nature minimises the chances of obtaining a successful prosecution. Furthermore, a criminal sanction demands prosecution to prove its case beyond a reasonable doubt.<sup>151</sup> This is a heavy burden to discharge especially if we are dealing with issues of marine pollution where there

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<sup>148</sup> Hugo 2014 *Administrative penalties as a tool for resolving South Africa's environmental compliance and enforcement woes* 11.

<sup>149</sup> Hobbs 2010 <https://marisluste.files.wordpress.com/2010/11/deterrence-theory.pdf> (Accessed 20/08/2019).

<sup>150</sup> Stanford Encyclopedia of Philosophy 2018 <https://plato.stanford.edu/entries/criminal-law/>. (Accessed 21/08/2019).

<sup>151</sup> Stanford Encyclopedia of Philosophy 2018 <https://plato.stanford.edu/entries/criminal-law/>. (Accessed 21/08/2019).

is a lot of complexity and technicalities in the legal frameworks regulating marine pollution.

The criminal law approach is naturally invoked once the damage has already been done and this is contrary to the aim of environmental law being to protect the environment. The worst problem is that even after the prosecution succeeds in advancing its case and the offender is to be penalised, the measure of punishment is not effective enough to stop the offender from repeating the same offence.

### **2.2.1.2. Marine Pollution Intervention Act of 1987**

In 1983, a tanker from Spain, the *Castillo De Bellver* e exploded near Table Bay at Cape Town. The tanker got broken into two after having drifted off the coast and caused a serious oil spill. The tanker spilled tons of oil it was carrying and sank under the sea with tons of oil that were remaining in the tanker, the ship was carrying 252,000 tons of light crude oil and caught fire. The ship wandered offshore, got damaged and caused oil spills with as much as 100,000 tons of oil ending up in deep water 24 miles off the coast. The tanker was pulled away from the coast using controlled explosive charges. It is estimated that approximately 50-60,000 tons got their way into the sea or burned.<sup>152</sup> This triggered the need to enact the Marine Pollution Intervention Act which will is active in cases of oil pollution casualties.

Thus, the Marine Pollution Intervention Act was promulgated and incorporated in the provisions of the International Convention relating to intervention on the High Seas in cases of oil Pollution Casualties, into South African legislation. The Act was promulgated to “give effect to the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, and to the Protocol Relating to Intervention on the High Seas in Cases of Marine Pollution by Substances Other than Oil”.<sup>153</sup> It affords the party-state powers to intervene in situations where there is a possibility of spillage or to circumvent spillage by a tanker.

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<sup>152</sup> Moldan et al 1985 Marine Pollution Bulletin 97.

<sup>153</sup> *Marine Pollution Intervention Act* 64 of 1987.

It is however disturbing to learn that even after the promulgation of this Act, South Africa experienced yet oil spills that caused damage to the marine environment due to its oil spill that had a great impact on the endangered African Penguins bird population nesting in Ireland in the vicinity.<sup>154</sup> In 1994, South Africa experienced another pollution from a bulk carrier named the *Apollo Sea* where the carrier was carrying a full load of iron ore.

The carrier sank and a considerable amount of oil that leaked from the vessel caused a serious environmental disaster that claimed the lives of marine species such as sea birds and African Penguins.<sup>155</sup>

The aforementioned incidents question the existence of Article I (1) of this Act, which provides that:

Parties to the present Convention may take such measures on the high seas as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution or threat of pollution of the sea by oil, following upon a maritime casualty or acts related to such a casualty, which may reasonably be expected to result in major harmful consequences.

The abovementioned incidents prove that no adequate measures were taken to prevent the occurrence of marine pollution despite the existence of Article I calling upon the states to take measures. This gives an impression that party states do not ratify the international Convention to comply with what the Convention seeks to achieve, they ratify to be seen to be doing something.

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<sup>154</sup> See Abstract of Koning 2002 *Journal of Contingencies and Crisis Management*.  
<sup>155</sup> Koning 2002 *Journal of Contingencies and Crisis Management* 118-122.

Section 4(1) and (2) state as follows:

(1) Any offence in terms of this Act shall, for purposes in relation to the jurisdiction of a court to try the offence, be deemed to have been committed within the area of jurisdiction of the court in which the prosecution is instituted and

(2) Notwithstanding anything to the contrary contained in any other law, a magistrate's court shall have jurisdiction to impose any penalty provided for in this Act.

Not taking away anything from the competency and standing of Magistrates' Courts as triers of fact and law. It is submitted that, the mere fact that the Act directs contravention of legislation protecting marine environments from pollution to the lower courts manifest lack of seriousness in the quest of protecting the marine environment from pollution. It is a clear demonstration that marine pollution is trivialised and the impact that it is having is taken for granted by the South African government. This is despite the Constitution of the Republic of South Africa stating in terms of Section 24 that "Everyone has the right- (a) to an environment that is not harmful to their health or well-being; and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that - (i) prevent pollution and ecological degradation; (ii) promote conservation and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development".

Furthermore, Section 232 of the Constitution of the Republic of South Africa provides that "customary international law" is recognized as part of South African law without the need for it to be incorporated unless it is inconsistent with the Constitution. In testing the existence of customary international law, reference can be made to the case of *the North Sea Continental Shelf (Federal Republic of Germany v. Denmark; the Federal Republic of Germany v. the Netherlands)* where the court held that:

Not only must the acts concerned amount to a settled practice, but they must also be such, or be carried out in such a way, as to be evidence of a belief that this practice is rendered obligatory by the existence of a rule of law requiring it. The need for such a belief, i.e., the existence of a subjective element, is implicit in the very notion of the *opinio juris sive necessitatis*.

The States concerned must therefore feel that they are conforming to what amounts to a legal obligation. The frequency or even habitual character of the acts is not in itself enough. There are many international acts, e.g., in the field of ceremonial and protocol, which are performed almost invariably, but which are motivated only by considerations of courtesy, convenience or tradition, and not by any sense of legal duty.<sup>156</sup>

International Conventions demonstrate a need to protect the marine environment from pollution by calling upon all the party states to ensure that they promulgate national legislation that will assist in reaching what the International community seeks to achieve. It is a common cause that the International Conventions fall within the auspices of customary international law. This is readily ascertainable under the narration of the following cases:

The *Corfu Channel Case, United Kingdom of Great Britain and Northern Island v the People's Republic of Albania*<sup>157</sup> involved a dispute between the Government of United Kingdom of Great Britain and the government of the People's Republic of Albania. The dispute came as a result of an explosion allegedly caused by two British destroyers after having stricken mines. Because of the incident, many

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<sup>156</sup> *Federal Republic of Germany v. Denmark; Federal Republic of Germany v. Netherlands* 1969 International Court of Justice (ICJ) para 77.

<sup>157</sup> *United Kingdom v Albania Judgment on Preliminary Objection* 1948 International Court of Justice [ICJ]: I.C. J. Reports 1948.

people lost their lives and vessels were damaged.<sup>158</sup> The International community played an important role by prosecuting this matter and giving judgement based on the proceedings and submissions made by the parties.

The manner in which this case was handled underscored the involvement and participation of the international community in the quest of protecting the environment. The *Trail Smelter Case, United States of America v Canada* is a case involving a dispute between Canada and the USA in respect of which the former State was emitting harmful gases that caused pollution to the latter State.<sup>159</sup> The case reached the arbitration stage where international law principles such as the State's obligation to prevent environmental harm through transboundary effects<sup>160</sup> and the obligation imposed on the State to pay for the damage caused<sup>161</sup> emerged. The advent of the International Convention was due to the existence of these case laws.

Section 39(1) of the Constitution, mandates the courts to consider international law when interpreting the Bill of Rights by stating that "when interpreting the Bill of Rights, a court, tribunal or forum (a) must promote the values that underlie an open and democratic society based on human dignity, equality and freedom; (b) must consider international law and (c) may consider foreign law".<sup>162</sup> This section confirms the idea that international law is recognized and acknowledged under the South African Constitution.

In the case of *Dladla and Another v City of Johannesburg and Others (CCT124/16) [2017] ZACC 42; 2018 (2) BCLR 119 (CC); 2018 (2) SA 327 (CC)*

The applicants had been evicted from a building in which they were residing. The eviction was accompanied by an obligation

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<sup>158</sup> (*The Corfu Case*) para 16.

<sup>159</sup> *The Trail Smelter Arbitration Case (United States Vs Canada)* 1941, U.N. Rep. Int'l Arb. Awards 1905.

<sup>160</sup> (*The Trail smelter case*) para 1962.

<sup>161</sup> (*The Trail Smelter case*) para 1980.

<sup>162</sup> The Constitution of the Republic of South Africa, 1996.



on the City of Johannesburg to provide them with temporary alternative accommodation. The city provided temporary accommodation at Ekuthuleni Shelter.

At that shelter, the Applicants had to comply with certain rules including the separation of dormitories based on sex. The Centre for Applied Legal Studies submitted that the conditions imposed at Ekuthuleni Shelter run contrary to international law on the right to adequate housing which calls upon the States to implement gender-sensitive housing laws and policies that respond to the particular housing needs and vulnerabilities of women and children.<sup>163</sup>

Article 11(1) of the 1966 International Covenant on Economic, Social and Cultural Rights<sup>164</sup> is the essential codification of the right to adequate housing in international law.

South Africa ratified the Convention on 12 January 2015, rendering the Covenant binding under South African law with effect from 12 April 2015.<sup>165</sup> In the end, the court ruled that the Shelter's rules did not meet the "reasonableness" criterion elucidated in this Court's jurisprudence and considered that this is sufficient to justify a holding that the Shelter's rules are constitutionally invalid.

The inclusion of environmental rights in the Constitution of the Republic of South Africa means that environmental issues are justiciable in South Africa and may be adjudicated by any competent court. It is disturbing to see the Marine Pollution Intervention Act subjecting contraventions to lower courts that deal with less serious matters. It will be acceptable if the Marine Pollution Intervention Act directs environmental issues to superior courts because by their very nature, environmental

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<sup>163</sup> Dladla v City of Johannesburg 2017 42 SA (CC) para 2.

<sup>164</sup> Article 11(1) obliges each State Party "to take steps to the maximum of its available resources, with a view to achieving progressively the full realisation of the rights recognised in the present Covenant by all appropriate means, including particularly the adoption of legislative measures".

<sup>165</sup> (*Dladla case*) para 9.

issues are very serious. Its serious nature was evidenced by research conducted by Can der Elst on the marine life of South Africa.<sup>166</sup>

The research indicated that South Africa has got at least eleven thousand one hundred and thirty (11 130) species of marine animals and numerous species of marine plants and seaweeds. The research also indicated that there are two thousand (2 200) species of fish, which makes about 15% of the total number of marine fish species worldwide. In addition, there are two hundred and seventy (270) families of fishes represented in South Africa, equivalent to 83% of all marine fish families known of which 13% are endemic, ranking amongst the highest anywhere.

Moreover, there are several families considered to be typically South African. These families are named as follows: klipfishes, thirty eight (38 species); gobies, twenty eight (28 species); seabreams, twenty five (25 species); catsharks, eleven (11 species) ; toadfishes, seven (7 species) and invertebrates with an estimated 36% considered endemic. Other notable families such as sea cucumbers, one hundred and twenty two (122 species), squids, one hundred and ninety five (195 species), jellyfishes, four Hundred and sixty nine (469 species) and pelagic copepods, three hundred and fifty four (354 species).<sup>167</sup>

This marine species richness represents a variety of valuable resources that South Africa, through its legal frameworks regulating marine pollution needs to protect. It is apparent that subjecting perpetrators who contravene marine pollution legislation and cause pollution to the environment that poses a serious threat to the above-mentioned species to lower courts does not in any way demonstrate the need and importance of protecting these valuable marine species.

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<sup>166</sup> See Can der Elst 2007 [http://www.enviropaedia.com/topic/default.php?topic\\_id=156](http://www.enviropaedia.com/topic/default.php?topic_id=156) (Accessed on 21/08/2019).

<sup>167</sup> Can der Elst 2007 [http://www.enviropaedia.com/topic/default.php?topic\\_id=156](http://www.enviropaedia.com/topic/default.php?topic_id=156) (Accessed on 21/08/2019).

### **2.2.1.3. Prevention and Combatting of Pollution of the law of Sea by Oil Act of 1981**

Specific to marine pollution, in 1984, South Africa promulgated the Prevention and Combating of Pollution of the Sea by Oil Act of 1984 as a step to protect and control marine pollution.<sup>168</sup> Chapter II of the regulation deals with the issue of a certificate of insurance or other financial security.

The regulation under the application for a certificate provides that every application referred to in Section 14(1)(a) of the Act shall be accompanied by “the name and address of the owner of the tanker concerned and also the address of his principal place of business and of his registered office in the Republic, a certified copy of the certificate of registry issued in respect of such tanker, the original and a certified copy of the contract of insurance or other financial security issued in respect of such tanker, the name and address of the person who issued the contract of insurance or other financial security referred to in paragraph (c) and also the address of his principal place of business and of his registered office in the Republic, a certificate signed by the person referred to in paragraph (d) stating that such contract of insurance or other financial security is in force and that it satisfies the requirements of Article VII of the Convention and Section 13 of the Act, the period of validity of such contract of insurance or other financial security, and finally an amount of R1 000.”<sup>169</sup>

The purpose of the certificate of insurance is to produce tangible evidence or give assurance to the party-state that should there be an oil spill, there is insurance that had put measures in place to remedy the damage caused by the oil spill. Furthermore, it seeks to conform to Section 13 of the Act named compulsory insurance against liability for loss, damage or costs as provided in terms of section 13(1). The section provides that “no tanker carrying more than 2 000 long tons of oil

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<sup>168</sup> Chetty 2015 *Legal measures for the prevention of oil pollution by ships and civil liability for oil pollution damage in South African marine and coastal waters* 32.

<sup>169</sup> *Prevention and Combatting of Pollution of the law of Sea by Oil Act* 6 of 1981.

in bulk as cargo shall enter or leave a port in the Republic unless it carries on board a valid certificate of the contract of insurance issued by the competent authority stating that there is insurance in respect of such tanker for an amount not less than an amount fixed in accordance with the provisions of Section 9 (5) to cover any liability, loss or damage in respect of any incident which may occur”.

The Act demands that such a certificate must be operative and effective and active at that time as it is stipulated under Section 13(3). The section provides that a “certificate shall not be regarded as a valid certificate if the period of validity of the insurance or other financial security to which it relates, will expire while the tanker concerned will be within the territorial waters of the Republic at a time before a new contract for such insurance or other financial security becomes operative”.

The Act went further in section 13(6) to criminalise the absence of the said certificate or punish parties who are not in a position of a valid certificate, being “guilty of an offence and Section 13 (7) by indicating that “if the master of a tanker refuses or fails to produce a certificate when requested to do so, the said master shall be guilty of an offence”.

Chapter V of the Act deals with the transfer of oil from a ship or tanker to another ship or tanker within prohibited areas. It stipulates the terms under which an application for the transfer of oil can be conducted. Section 14(1) provides that “an application for the transfer of oil from a ship or tanker to another ship or tanker within the prohibited area shall be addressed to the Minister through the intercession of the Director-General and must be lodged with the principal officer at the port nearest to where the transfer operation is to take place”.<sup>170</sup> This section is important in curbing the haphazard and untraceable movement of ships and tankers in prohibited areas.

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<sup>170</sup> Regulations under the Prevention and Combating of Pollution of the Sea by Oil Act 59 of 1984.

The application will assist in a situation where a party has contravened the Act and action needs to be taken against that party. In the process of making such an application, certain particulars stipulated under Section 14(2) must be part of the application and must be in writing.

This includes “the reasons for the transfer operation and a description of the damage, if any, or the ship or tanker, the name of the laden ship and the receivership, their respective ports of registry, their official numbers, their gross register tons and drafts. The names of their owners and the type and quantity of oil to be transferred, the intended place and date and the estimated duration of the transfer operation, the names and addresses of the agents or representatives in the Republic who will act on behalf of the owner, the cargo owner and the charterer of the laden ship and the receivership, the name of the Club with which the laden ship and the receivership are entered and the name and address, in the port nearest to the place of transfer, of the representatives of such a Club”.

The information needed in terms of Regulation 14(2) in Chapter V of the regulation is important for the state to be able to exercise its right in terms of Section 2 of the Act. Section 2(1) provides that “If any oil is discharged from a ship, tanker or offshore installation the master and the owner thereof shall be guilty of an offence unless it is proven that the oil in question was discharged for safety purposes or prevention of damage or saving of lives and that reasonable steps were taken to prevent spillage and the spillage was not due to lack of reasonable care on the master or owner”.

Chapter VI of the South African Regulations under the Prevention and Combating of Pollution of the Sea by Oil Act of 1984 provides that “upon a discharge of oil from an offshore installation having been reported to a principal officer, the master or the owner of such offshore installation shall, unless such principal officer directs otherwise, take such steps as may be described in the contingency plan referred to in Regulation 22(f) to combat the pollution or to prevent pollution by any further such discharge of oil”. Regulation 22(f) provides for a contingency plan that must be approved by the Director-General, that will be used to combat the pollution of oil

discharge emanating from sources such as ships, tankers, offshore installations and other sources within the surrounding of such offshore installations.

Having dealt with this Act and its regulation, it is clear that there is a synergy between the two. Despite the two pieces of regulation complementing each other, oil spill is still a problem that poses catastrophic effects to the marine environment in South Africa. Perhaps applauding the artisanship alone is not enough, one also needs to keep an eye on it and encourage proper execution and implementation. In this instance, the problem faced under this Act and its regulation is the enforcement.

It is disturbing to see well-drafted legislation together with its regulations that complement each other but fails to curb the problem of pollution by oil. Our focus must now turn to the enforcement of this Act. After the promulgation of this Act and its regulation, South Africa experienced oil spills,<sup>171</sup> however, information relating to the trial of those oil spills is not found. Having read the Act and its regulations and having read about the incidents of oil spills in South Africa, it should not be difficult for one to be able to find numerous cases where the South African courts are dealing with an act of marine pollution by oil spills, but the opposite is the case. The question is, what happens to the people who commit an act of marine pollution by oil spills?

#### **2.2.1.4. Marine Pollution (Control and Civil Liability Act) Act of 1981**

In terms of Section 21 of Marine Pollution (Control and Civil Liability) Act, the Department of Transport is entrusted with the duty to take all the necessary steps available to mitigate and reduce the growing effect of harmful substances emanating from sources such as offshore installations, tankers and ships.

The South African Maritime Safety Authority (SAMSA) is entrusted with these administrative functions.<sup>172</sup>

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<sup>171</sup> See Sea Alarm Foundation 2010 <https://www.sea-alarm.org/wp-content/uploads/2010/07/south-africa.pdf> (Accessed on 27/08/2018).

<sup>172</sup> The mission of the South African Maritime Safety Authority (SAMSA) is to “advance the interests of South Africa’s Maritime and ensure its development and safety. Furthermore, it promotes environmental protection in national and international

An initiative taken by the Act to task different stakeholders with different roles and duties manifests a meaningful quest in the process of finding a better approach towards the protection of the marine environment from pollution. It demonstrates the need for seriousness and good resolve from all stakeholders to curb, mitigate or eradicate the plight of marine pollution. The implementation of this initiative became apparent when the Act afforded SAMSA the power to prevent marine pollution with specific focus channelled at spaces or places where the harmful discharge from tankers or ships have occurred or is likely to occur. The steps thereof are indicated in terms of Section 4(1) (a) of the Act as follows:

If any harmful substance is being discharged or is in the opinion of the Authority likely to be discharged from a ship or a tanker the Authority may, with a view to preventing the pollution or further pollution of the sea by such substance, require the master or the owner of such ship or tanker or both such master and owner-

- (i) to unload the harmful substance from the ship or tanker or any such substance from a specified part of the ship or tanker;
- (ii) to transfer any harmful substance from a specified part of the ship or tanker to another specified part of the ship or tanker;
- (iii) to dispose of any harmful substance so unloaded or transferred, in such manner and within such period as the Authority may direct.

The Act is further concerned about other factors such as but not limited to the movement of the ship or tanker to a location allocated by the Authority, prevention to unload any harmful substances specified by the Authority from the ship or

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spheres. It advocates for the implementation of public awareness activities and education pertaining to marine safety and pollution prevention”.

tanker, carrying out operations specified by the Authority pertaining to the sinking of the ship or tanker.

The Act did not give SAMSA hard and fast rules or steps to follow. SAMSA was also given room to apply its own discretion in certain circumstances as stipulated under Section 4(2) of the Act. These include, but not limited to:

(a) If in the opinion of the Authority, the master and the owner of the ship or tanker in question are or would be incapable of complying with a requirement made or contemplated in terms of subsection (1) or could not reasonably be expected to comply with such requirement, or the powers conferred upon the Authority by subsection (1) are inadequate for the purpose contemplated in that subsection, the Authority may cause any such steps to be taken as it has power to require to be taken in terms of the said subsection (b) Any reference in paragraph (a) to the power of the Authority to require steps to be taken under subsection (1), includes a reference to the power of the Authority under that subsection to require that a specified step be not taken.

The Act further stated how to deal with a situation where the state is liable or is partially liable and the other party has already suffered the expenses. This is in terms of Section 4(3) "If the owner of a ship or a tanker, in complying with the Act, incurs any expenses and the discharge of the harmful substance was wholly or partly the fault of the State, the amount or the proportion of such expenses shall be determined in accordance with the provisions of the Apportionment of Damages Act 1956 and the determined amount shall be paid to the owner by the State".<sup>173</sup>

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<sup>173</sup> Section 4(3) of the *Marine Pollution (Control and Civil Liability) Act* 6 of 1981.



It makes perfect sense when the Department of Transport is charged with the duty to ensure that marine pollution is prevented. This is because the majority of marine pollution incidents by oil occur through shipping. Shipping is important to world trade, however, it is coupled with the risk to cause pollution to the marine environment. The shipping industry needs to be kept alive due to its immense contribution to the country's economy, it is however, and very unfortunate that in the process of preserving the shipping industry, environmental protection has been compromised and to some extent neglected, particularly, the marine environment.

The legislation that is supposed to protect the marine environment are relaxed to accommodate industrialisation or shipping. This is demonstrated by the inclusion of the right to limitation of liability under the Civil Liability Act in terms of Section 10(1) to (4). The relevant provision reads as follows:

(1) When an incident has occurred in respect of a ship, tanker or offshore installation the owner of the such ship, tanker or offshore installation shall not be liable otherwise than under the provisions of this Act to any person for any (a) loss or damage referred to in Section 9(1)(a) or (c); or (b) costs referred to in Section 9(1)(b), suffered or incurred as a result of that incident.

(2) No servant or agent of the owner of a ship, tanker or offshore installation shall be liable to any person for any loss, damage or costs referred to in subsection (1).

(3) Any person performing salvage operations in connection with a ship, tanker or offshore installation with the agreement of the owner or master thereof, shall, for the purposes of subsection (2), be regarded as the agent of such owner.

(4) Any person in the service or acting on the authority of the State or the Authority or any person engaged in terms of section 27(1) read with Section 4(2)(a) or Section 22(1), as the case may be, to perform any act required to be performed in terms of Section 4(1), shall not be liable (except in the case

of any wilful act or omission on the part of any such person) to any person for any loss of or damage to any ship, tanker or offshore installation or, in the case of such ship or tanker, its cargo or harmful substances, caused by or arising out of or in any manner connected with the performance of such an act.

It is apparent that the above-stated limitations of liability in terms of section 10 are meant to encourage new potential ship owners and investors into the industry not to be scared to join the market due to potentially high liability claims should marine pollution incidents occur. Indeed, to some extent, the limitation preserves shipping industrialisation but renders the marine environment more vulnerable and susceptible to marine pollution.

On average, South Africa has an estimation of 12000 vessels carrying tons of oils that visit its ports in a year.<sup>174</sup> This is a highlight of the risk faced by South African ports posed by oil spills. To understand the extent of the risk posed upon the South African coastline, a closer look should be taken at the monetary value associated with an oil spill of minor proportions. For minor oil spills, a lot of money can be needed to cure that oil spill. An example may be the MV Seli incident that took place in Bloubergstrand, Cape Town.<sup>175</sup>

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<sup>174</sup> Simpson 2017  
<http://kzntopbusiness.co.za/site/businessfit/view/4856/2017/10/16/IS>  
(Accessed on 30/04/2019).

<sup>175</sup> On 02 September 2009 Panama owned bulk carrier M.V. "Seli 1" after loading coal in bulk from port Durban, South Africa sailed for port Gibraltar. On the passage the vessel experienced partial failure of turbo charger. Since the vessel could not proceed further on her full engine power / speed, she diverted to nearest port Cape Town for repairs. On 07 September evening the vessel anchored off Cape Town at no.4 anchorage, about 1.2 miles from shore. The weather on 07 September was with near gale North West with wave height of 5.5 meters. The visibility was less than 2 miles due to rain. One hour after anchoring, the vessel dragged her anchor. Master attempted to pick up anchor but could recover only 4 shackles after which the anchor chain snapped, and vessel continued drifting towards the coast and at 2140 hrs the vessel grounded / stranded on the Table Bay beach. On 08 September three hours after the incident the engine room started flooding as a result of crack in ship's hull. At 0230 hrs all Turkish crew members including Master were evacuated from the vessel by shore assistance".

The estimated expenditure by the South African authorities in oil pollution clean-up and eventual removal of the wreck amounted to R40 million.<sup>176</sup>

South Africa is a party to numerous international conventions dealing with the prevention of marine pollution. One of the international conventions that South Africa has incorporated into South African legislation is the International Convention for the Prevention of Pollution from Ships (MARPOL) with its core intention being to do away with the intentional pollution of the marine environment by oil and other substances. This was done to keep up with the international standard. At an international level, regimes dealing with civil liability are the Civil Liability Convention and the Fund Convention.

They both deal with liability for oil pollution from bunkers and cargos of oil tankers. The two conventions are used to hold tanker owners and oil companies liable for damage caused by oil pollution and further come up with a solution to the risks occasioned thereof.

It took South Africa a long time before it could accede to both the Civil Liability Convention limits and the Fund Convention limits. This is not surprising because South Africa had chosen to opt against being a party to numerous international conventions dealing with liability namely, the 1957 International Convention Relating to the Limitation of Liability of Owners of Seagoing Ships, the 1976 Convention on Limitation of Liability for Maritime Claims and the 2001 International Convention on Civil Liability for Bunker Oil Pollution Damage. It is submitted that this explains why till to date the South African legislature still fails to enact the required domestic legislation that will conform to the relevant conventions dealing with civil liability and their updated limits part of our national law.

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<sup>176</sup> Simpson 2017  
<http://kzntopbusiness.co.za/site/businessfit/view/4856/2017/10/16/IS> (Accessed  
on 30/04/2019).

The absence of proper legislation that contains updated limits means that claimants will always be subjected to inadequate or insufficient claims in terms of compensation because Section 9(5)(b)(i) of Marine Pollution (Control and Civil Liability Act) provides that “if the owner of any ship, tanker or offshore installation incurs a liability in terms of the provisions of the Act, for any costs incurred, loss or damage suffered due to the occurrence of an incident that is not the owner’s fault, the amount payable by such owner shall not exceed 133 (One Hundred and Thirty-Three) units of each ton of the of the ship’s tonnage or 14 000 000 (Fourteen Million) units of account whichever is lesser”. The rate at which the shipping industry grows makes it imperative to enact proper legislation dealing with liabilities for claims and stop housing it in the Marine Pollution (Control and Civil Liability) Act and the Marine Pollution (Intervention) Act.

#### **2.2.1.5. The Marine Living Resource Act 18 of 1998**

The marine sector in South Africa provides for food, job opportunities, tourism and indigenous cultural practices.<sup>177</sup> Along the coastlines, for centuries, the indigenous communities had always and still rely on marine resources as their only source of living and the only means of making an income.<sup>178</sup> Apart from the food supply, job opportunities and tourism, indigenous communities use marine resources to perform their cultural practices and customs in connection with their African beliefs. The advent of the Constitution of the Republic of South Africa triggered a need to revise policies and regulations that governed marine resources during the pre-colonial and the apartheid era.<sup>179</sup>

The Constitution of the Republic of South Africa prioritised the protection of the environment by including it in the Bill of Rights under Section 24 of the Constitution. This motivated a move to promulgate legislation that will regulate marine resources in South Africa. That was the birth of the MRLA. Its purpose as set out in the Act

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<sup>177</sup> Cochrane et al 2017 *South Africa and the Responsible Fisheries Alliance* 1.

<sup>178</sup> Ota and Cisneros-Montemayor 2017 <https://theconversation.com/for-indigenous-communities-fish-mean-much-more-than-food-70129> (Accessed on 22/03/2019).

<sup>179</sup> Maluleke 2018 *Rethinking Protected Area Co-Management In Region, South Africa* 105.

is “to provide for the conservation of the marine ecosystem, the long-term sustainable utilisation of marine living resources and the orderly access to exploitation, utilisation and protection of certain marine living resources. And for these purposes, to provide for the exercise of control over marine living resources in a fair and equitable manner to the benefit of all the citizens of South Africa; and to provide for matters connected therewith”.<sup>180</sup>

Disappointingly, the Act is in contradiction with its purpose because it failed to cater for the rights of indigenous communities to freely benefit from marine resources. Writers like Young support the current author’s assertion by stating that a “large number of traditional fishing was marginalized by the Act”.<sup>181</sup> For many centuries fishing has always been part of the indigenous communities’ history and identity. They have been long-standing and deeply rooted traditional ties not only to the land but also to the more transcendent realm of identity. Indigenous communities believe that traditional fishing is integral to the cultural continuity of their communities’ and it is linked to their spiritual identity.<sup>182</sup>

Their belief is recognised and protected under Section 30 of the Constitution of the Republic of South Africa. This section states, “everyone has the right to use the language and to participate in the cultural life of their choice, but no one exercising these rights may do so in a manner inconsistent with any provision of the Bill of Rights”. Furthermore, section 31 of the Constitution of the Republic of South Africa states that “Persons belonging to a cultural, religious or linguistic community may not be denied the right, with other members of that community (a) to enjoy their culture, practise their religion and use their language; and (b) to form, join and maintain cultural, religious and linguistic associations and other organs of civil society. (2) the rights in subsection (1) may not be exercised in a manner inconsistent with any provision of the Bill of Rights”.

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<sup>180</sup> See the preamble of Marine Living Resource Act 18 of 1998.

<sup>181</sup> Young 2013 *PER Journal* 289.

<sup>182</sup> Feris 2013 *PER Journal* 558.

Chapter 4 of the MLRA deals with Marine Protected Areas which limits the free usage and access to marine resources by indigenous communities. The limitations are stipulated under Section 43 of the Act stating that the Minister may declare an area to be a marine protected area for the protection of marine species, facilitation of fishery management and research purposes.<sup>183</sup> After the minister has declared a certain area protected area, no person shall access that area without permission to perform any activity that may involve marine species protected in that area or adversely affect the ecosystem of that area.

These limitations create a competing interest between the customary law rights of the indigenous communities and the need for the preservation of marine resources. These competing rights were discussed under the case of *Gongqose & others v Minister of Agriculture, Forestry & Fisheries and others; Gongqose & others v State & others June 2018*) where the accused were charged and prosecuted for "entering a Marine Protected Area (Dwesa-Cwebe Nature Reserve) without authorization" and "fishing or attempting to fish in a marine protected area in contravention of section 43 of MLRA".<sup>184</sup> The case was held at the district court of Willowade in the Eastern Cape and the accused pleaded not guilty raising customary law fishing as their defence.<sup>185</sup>

The case provided a platform for customary law practices to be entertained and protected as indicated in the Constitution of the Republic of South Africa.<sup>186</sup>

Based on the evidence submitted by the defence, the court satisfied itself that the accused were performing their customary law right to fishing, however, it went on to convict the accused, gave them a suspended sentence and granted them leave to appeal.<sup>187</sup> The case reached the Supreme Court of Appeal (SCA) where the court's judgement indicated that indeed the Act did not take cognisance of the indigenous communities' customary rights of fishing when creating the marine

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<sup>183</sup> MLRA section 43.

<sup>184</sup> *Gongqose & others v Minister of Agriculture, Forestry & Fisheries and others 2018 ZASCA 87 para 14.*

<sup>185</sup> (*Gongqose case*) para 15.

<sup>186</sup> (*Gongqose case*) para 1.

<sup>187</sup> (*Gongqose case*) para 15.

protected areas. A person fishing by way of exercising his/her customary right to fish will not be declared unlawful.

It must be noted, however, that Section 43 of the MRLA did not indicate whether or not unlawfulness is an element of the offence. In the absence of such indication, generally, the courts ought to interpret legislation to determine whether there exists an innocent violation of legislation or not. Where there is an innocent violation of legislation such violation must not be punishable unless a contrary view exists.<sup>188</sup> In this case, it is clear from the facts that the accused were exercising their customary right to fishing as protected by the Constitution and that right cannot be superseded by legislation that does not specifically deal with customary law.<sup>189</sup>

Worth noting is that, the MRLA is drafted in a manner that disregard the importance of Indigenous Knowledge Systems (IKS). This is despite the IKS's nascence in the environmental field. Jegede and Masoga correctly posited that, the disdain of the IKS by the legislature stems from its lack of peer reviewed publications, lack of scientific documentation and its informal nature.<sup>190</sup> These scholars, acknowledge the nascence of IKS in the environmental field and asserts that it should no longer be ignored in the environmental discourses.<sup>191</sup> This is a sentiment that the current researcher upholds in the marine field.

Bruchac defined Indigenous Knowledge Systems as follows:

A network of knowledge, beliefs, and traditions intended to preserve, communicate and contextualize Indigenous relationships with culture and landscape over time.

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<sup>188</sup> (Gongqose case) para 61.

<sup>189</sup> (Gongqose case) para 63-64.

<sup>190</sup> Jegede and Masoga 2016 *Indilinga African Journal of Indigenous Knowledge Systems* 2.

<sup>191</sup> Jegede and Masoga 2016 *Indilinga African Journal of Indigenous Knowledge Systems* 14.

Indigenous knowledge is conveyed formally and informally among kin groups and communities through social encounters, oral traditions and ritual practices.

They include oral narratives that recount human histories, cosmological observations and modes of reckoning time, symbolic and decorative modes of communication, techniques for planting and harvesting, hunting and gathering skills and specialized understandings of local ecosystems.<sup>192</sup>

These are systems that have been successfully used by the indigenous communities from times immemorial for the preservation and protection of natural resources including marine resources. The majority of the African population use traditional medicines for health, social-cultural and economic reasons, this has always been the practice that has been sustained for centuries and South Africa is not an exception.<sup>193</sup> In South Africa, the sales of traditional and indigenous products play an important role by reducing the level of poverty in indigenous communities and create employment for the unemployed.<sup>194</sup> These beneficial effects have been kept alive and sustained by the use of IKS.

It is submitted that when drafting the MLRA it would have been prudent of the legislator to consider the IKS because of its demonstrable ability to come up with strategies used to preserve and protect marine species from danger and extinction. This is motivated by one of the submissions made in the *Gonqose* case by the Dwesa and Cwebbe Communities when they stated that their forefathers have taught them that when they are fishing, they are not allowed to catch juvenile fishes and pregnant fishes. It is a practice that when you catch a juvenile fish you must return it into the water to allow it to grow and have an opportunity to reproduce.

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<sup>192</sup> Bruchac, 2014 *Encyclopaedia of Global Archaeology* 3.

<sup>193</sup> Oyebode et al 2016 *Health Policy and Planning* 985.

<sup>194</sup> Sigcau 2019 <https://www.thediplomaticsociety.com/home/16-home/270unlocking-opportunities-through-indigenous-knowledge-to-address-current-economic-challenges> (Accessed on 25/03/2019).



This practice has sustained the Dwesa and Cebe fishing lives and has passed from generation to generation. This should serve as an eye-opener to the legislator that when dealing with issues that either directly concern, relate to or involves indigenous communities it is always advisable to first investigate what indigenous communities know pertaining to the issue in question. The tendency of ignoring and misunderstanding the IKS and opt to prefer the scientific knowledge system and policy documentation poses a threat to many traditional lifestyles with the possibility of extinction of that lifestyle or marginalisation of certain practices.

### **2.2.2. Legislation Protecting the Environment in General**

In South Africa, we have the legal framework that deals with the protection of the environment in general namely the National Environmental Management Act, National Environmental Management Integrated Coastal Management Act, National Environmental Management Protected Areas Act and National Environmental Management Waste Act. All these legislations will be discussed underneath.

#### ***2.2.2.1. The National Environmental Management Act 107 of 1998***

The preamble of the National Environmental Management Act in essence tasks the Act with the duty to ensure cooperative environmental governance. To achieve that, the Act must establish a decision-making body that concerns itself with matters that affects the environment. Furthermore, a need for the establishment of institutions that will deal with procedures for coordinating environmental functions exercised by organs of the state is of paramount importance. This will assist in providing administrative duties pertaining to environmental management laws.

To start with, the Act is significant in that it covers Cooperative Environmental Governance (CEG), which echoes the principles of co-operative governance embedded in Section 41 of the Constitution of the Republic of South Africa.

Du Plessis and Aberts indicated that CEG plays an instrumental role where government agents with different agendas, varying ideals and distinguishable mandates come across challenges resulting from issues such as the separate

training of experts, habitual collection of data and the division of government mandates.<sup>195</sup> CEG together with inter-governmental decision-making bodies come together to arrive at a collective and implementable decision based on an integrated understanding of sustainability.<sup>196</sup>

In an attempt to realise the environmental right in Section 24 of the Constitution, the National Environmental Management Act was promulgated to ensure an integrated ecosystem-orientated legal regime that allows a complete view of the ecosystem together with its interrelationship and interactions.<sup>197</sup> As legislation that directly governs environmental matters in South Africa, it has set out environmental principles such as the Polluter Pays Principle (PPP) and the Precautionary Principle (PP). I now turn to the discussion of these principles.

(a) The Polluter Pays Principle (*PPP*)

This principle was introduced to hold the polluters liable for their pollution conduct. In South Africa, the subject of liability towards environmental pollution is a complex issue in our legal system due to a lack of knowledge pertaining to environmental liability. Liability is mostly associated with the law of delict, a position that renders liability on environmental pollution a difficult subject to deal with.<sup>198</sup> The law of delict, by its very nature, is narrow, it requires that a party who sues in terms of delict must have a special interest in the matter at hand. This means anyone who wants to sue for environmental pollution must have a special interest in the matter at hand.

Effectively this suggests that if a party wants to sue for environmental pollution by following the law of delict route, the party will have to comply with all the elements of delict to succeed with the matter.

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<sup>195</sup> Du Plessis and Alberts 2014 *Southern African Public Law* 454.

<sup>196</sup> Du Plessis and Alberts 2014 *Southern African Public Law* 455.

<sup>197</sup> Muir 2014 *An interpretation of the South African Constitutional 'Environmental Right' (Section 24 of the Constitution of the Republic of South Africa, 1996) and an Assessment of its relationship to Sustainable Development* 13.

<sup>198</sup> Nabileyo 2009 *The Polluter Pays Principle and Environmental Liability in South Africa* 2.

For a delictual claim to succeed the party must prove that there was a fault, that caused harm or damage, the wrongdoer's action or non-action was wrongful and was the cause of the harm or damage done and as a result of that damage or harm, the party suffered an economic loss.<sup>199</sup> All these elements are difficult to prove in court when dealing with environmental pollution liability. This led to the introduction of the PPP. This principle was introduced as a means to hold polluters liable for their pollution conduct. PPP is an acceptable principle that compels perpetrators producing pollution to bear the costs of remedying and managing it to prevent damage to human health or the environment.<sup>200</sup>

NEMA covers the PPP under Section 2(4) (p) by stating that “the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment”. The main concern with the PPP is that its implementation and execution is dependent on the vigilance of relevant state functionaries. It is apparent that the state fails to carry out this function effectively due to a lack of resources.

#### (b) The Precautionary Principle (*PP*)

Before a person can perform any activity that may cause damage to the environment, precautionary measures need to be taken to avoid environmental harm.<sup>201</sup> Alegebe et al assert that, the Environmental Impact Assessment (EIA) is another form of advancing the PP. The logic behind this assertion stems from the EIA's nature of protecting the environment by compelling people to consider all environmental impacts prior the commencement of projects. This is because, the EIA, may in the process therefore, reveal environmental perils that were not going to be detected had it not been conducted.<sup>202</sup> These researchers bragged about the

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<sup>199</sup> Wessels 2019 *Fundamina* 234.

<sup>200</sup> Lawson 2017 *The doctrine of absolute liability and the right to a safe environment: issues and challenges in the liability of environmental polluters in Nigeria* 234.

<sup>201</sup> Gullet 1997 *Environmental and Planning Law Journal* 54.

<sup>202</sup> Alegebe et al 2020 *Kirk Environmental Law Across Cultures; Comparisons for*

benefit offered by both the PP and EIA. They stated that, the PP and the EIA give rise to a shift in burden. The state is relieved of the burden to prove that the potential polluter has contravened the law. The burden is now placed on the potential polluter to convince the state that neither the law shall be contravened nor pollution shall be caused as a result of the project.<sup>203</sup> In South Africa, the PP is reflected under the NEMA in terms of Section 2(4) (a) (vii) which stipulates that a “risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions”. The PP states that measures are being regarded as precautionary if they aim to anticipate, mitigate or avert a potential threat to environmental damage.

#### **2.2.2.2. The National Environmental Management Integrated Coastal Management Act 24 of 2008**

South Africa’s coastal marine environment is a “rich and diverse national asset”.<sup>204</sup> It provides social opportunities to the population of South Africa and makes a huge contribution to the economy and livelihood of South African people.<sup>205</sup> This triggered an accelerated demand on the reliance on coastal resources in terms of commercial activities, recreation, food and transportation.<sup>206</sup> Due to this, coastal lands gain momentum in terms of population growth in search of coastal resources. This motivated the need to vigorously regulate and protect our coastal zones and resources.

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<sup>203</sup> Legal Practice. Routledge Routledge London.  
<sup>204</sup> Alegebe et al 2020 Kirk Environmental Law Across Cultures; Comparisons for Legal Practice. Routledge Routledge London.

<sup>204</sup> Marine and Coastal Resources “date unknown”  
[https://www.environment.gov.za/sites/default/files/docs/part2 marine and coastal resources pdf](https://www.environment.gov.za/sites/default/files/docs/part2_marine_and_coastal_resources.pdf) (Accessed on 27/08/2019).

<sup>205</sup> Marine and Coastal Resources “date unknown”  
[https://www.environment.gov.za/sites/default/files/docs/part2 marine and coastal resources pdf](https://www.environment.gov.za/sites/default/files/docs/part2_marine_and_coastal_resources.pdf) (Accessed on 27/08/2019).

<sup>206</sup> Marine and Coastal Resources “date unknown”  
[https://www.environment.gov.za/sites/default/files/docs/part2 marine and coastal resources pdf](https://www.environment.gov.za/sites/default/files/docs/part2_marine_and_coastal_resources.pdf) (Accessed on 27/08/2019).

The NEM: ICMA was promulgated in order to realize the need of protecting and regulating coastal zones and its resources. It helps by protecting the ecological integrity, natural and economic character of the coastal zone, social and aesthetic value of the coastal public property. It further avoids the increasing effect or severity of natural hazards in the coastal zone and maintains the productive capacity of the coastal zone by protecting the ecological integrity of the coastal environment.<sup>207</sup> The protection of the coastal zones is demonstrated in terms of Section 16(1) of the Act.<sup>208</sup>

The regulation and protection of coastal zones extends to the municipalities as stipulated in terms of Section 20 (1) of the Act. In terms of Section 20(1) “municipality in whose area coastal access landfalls, must signpost entry points to that coastal access land, control the use of, protect and enforce the rights of the public to use that land to gain access, maintain that land, where appropriate provide facilities such as parking areas, boardwalks and toilets, other amenities, ensure that the provision and use of coastal access land and associated infrastructure do not cause adverse effects to the environment”.

This Section is backed up by Section 50 of the Act which gives powers to the municipality to “administer its coastal management programme and may make by-laws to provide for the implementation, administration and enforcement of the coastal management programme”. The approach of entrusting municipalities with the responsibilities as set out in terms of Section 20 and 50 of this Act is commendable. The applaud rises from the fact that South Africa has many coastal lands that need to be protected and regulated equally. If the powers were to be centralised at the national level, protection and regulation would prove to be a difficult task to execute effectively. Furthermore, the approach demonstrates the good spirit amongst the governmental spheres and promotes the principles of co-

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<sup>207</sup> See preamble of the *National Environmental Management Integrated Coastal Management Act 24 of 2008*.

operative governance elucidated in terms of Section 41 of the Constitution of the Republic of South Africa.

### **2.2.2.3. The National Environmental Management Protected Areas Act 57 of 2003**

The International Union for Conservation of Nature defines protected areas as “a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values”.<sup>209</sup> South Africa regulates protected areas in terms of Section 9 of the NEM: PAA.

The Act declares in terms of Section 9 that it regulates “special nature reserves, world heritage sites, specially protected forest areas, forest nature reserves and forest wilderness areas that are declared in terms of the National Forests Act, 1998 and mountain catchment areas declared in terms of the Mountain Catchment Areas as the kinds of protected areas that it regulates”.

Section 2(a)-(g) of the NEM: PAA succinctly sets its objectives. These include providing “within the framework of national legislation, including the National Environmental Management Act, for the declaration and management of protected areas”; providing CEG “in the declaration and management of protected areas” putting in place strategic national system “to manage and conserve its biodiversity”; “to be mindful and “promote sustainable utilisation of protected areas for the benefit of people, in a manner that would preserve the ecological character of such areas”; and ensuring inclusive participation in the management of protected areas with local communities being part of the key participants. The objectives of the Act are commendable as they are structured in a manner that seeks to promote and advance ecological preservation that will in turn be beneficial to the marine environment.

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<sup>209</sup> The International Union for Conservation of Nature is a membership union comprising of government and civil societies working towards the conservation of nature and the acceleration of sustainable development.

It is however disturbing but prudent to highlight that Section 45(1) of the Act which provides that “no person may enter a special nature reserve, reside in a special nature reserve or perform any activity in a special nature reserve. And Section 46(1) of the same Act which provides that “despite any other legislation no, person may without the written permission of the management authority of a nature reserve or world heritage site enter or reside in the reserve or site” have a prejudicial effect on indigenous communities living around protected areas. This prejudicial effect occurs in the sense that these sections respectively prevent indigenous communities to freely access the areas as they used to because those areas have been declared “protected areas”. This will stop indigenous communities to perform their cultural practices such as fishing, “*go thwasa*”, spiritual cleansing, hunting, conducting initiation schools and other cultural practices.

The denial of access to protected areas in indigenous communities is not beneficial to them. It has the potential to lead to the negative alteration of indigenous communities’ way of life. Furthermore, other objectives such as “to promote the participation of local communities in the management of protected areas, where appropriate” are not implemented, this is made apparent by the number of cases that are brought before the courts to resolve disputes between indigenous communities and the state pertaining to protected areas exposes lack of participation by indigenous communities concerning the management of protected areas as indicated in terms of Section 2 of the Act”.

#### **2.2.2.4. The National Environmental Management Waste Act 59 of 2008**

There are different sources of waste namely: municipal source of waste, medical/clinical source of waste, agricultural waste, industrial waste, construction and demolition source of waste, electronic source of waste, sanitary waste and incineration method of waste management.<sup>210</sup> These different types of waste and

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<sup>210</sup> Ferronato and Torretta 2019  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6466021/>  
(Accessed on 28/04/2020).

the need to manage them led to the promulgation of the NEM: WA. The Act in its preamble states that “waste management practices in many areas of the Republic are not conducive to a healthy environment and the impact of improper waste management practices are often borne disproportionately by the poor.

It further indicates that poor waste management practices can have an adverse impact both locally and globally. This means the issue of waste management is a global concern, furthermore, it states that sustainable development requires that the generation of waste is avoided, or where it cannot be avoided, that it is reduced, reused, recycled or recovered and only as a last resort treated and safely disposed of”.<sup>211</sup>

Despite the existence of this Act and its convincing measures to deal with waste management, the reality is that waste management is a growing concern across the world and South Africa is not immune. It was due to the problem of waste management that the concept of environmental justice gained its popularity in the USA. This popularity was gained in the mid-eighties when people organize environmental campaigns to prevent the usage of hazardous substances such as the poisoning of pesticides in their communities. Scholars started to investigate the link between race and hazardous environmental exposure and found that Blacks and other people of colour were more likely to be exposed to environmental hazards than Whites.<sup>212</sup>

This concept motivated what is indicated in the preamble of the Act as follows “improper waste management practices are borne disproportionately by the poor communities”. The majority of poor communities dominated by Blacks are located next to the municipality dumping sites or closer to the industrial areas, which proves the disproportionality of improper waste management practices.

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<sup>211</sup> See *preamble of National Environmental Management Waste Act 59 of 2008.*

<sup>212</sup> Beretta 2012, Some Highlights  
<https://journals.openedition.org/eces/1135#tocto1n2>  
(Accessed on 23/08/2019).





Figure 2. 1: An informal settlement situated next to a dumping site in Sondela, Rustenburg (29 April 2016).

These dumping sites prove to be dangerous to the environment and people living around them. The danger emanates from different categories of wastes which comprise of different characteristics and elements of toxins. The lack of waste management techniques contribute negatively to the environment.

The Act deals with penalties and provides that “a person convicted of an offence referred to in Section 67(l) (a), (g) or (li) is liable to a fine not exceeding R10 000 000 or to imprisonment for a period not exceeding 10 years, or to both such fine and such imprisonment, in addition to any other penalty or award that may be imposed or made in terms of the National Environmental Management Act”.<sup>213</sup> It further provides that “a person convicted of an offence referred to in Section 67(1) (b) to (l) or Section 67(2) (a) to (e) is liable to a fine not exceeding R5 000 000 or to imprisonment for a period not exceeding five years, or to both a fine and such imprisonment, in addition to any other penalty or award that may be imposed or made in terms of the National Environmental Management Act”.

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<sup>213</sup> NEMA Section 68.

The language used in this section is open for abuse since there is no fixed amount or period pertaining to the punishment of a person who has contravened this Act. It is because of the lack of stringent punishments that must be used to deter persons from contravening this Act that pollution from waste is accelerating.

### **2.3. CONCLUSION**

The existence and continuous promulgation of marine pollution legal frameworks is a positive step towards the prevention of pollution of the marine environment. The effectiveness and efficiency of these legal frameworks can be enhanced by proper enforcement and stringent punishment towards the perpetrators. This will encourage compliance with legal frameworks dealing with marine pollution and deter contraventions. There is a lacuna between international treaties and national legislation that is created by the absence of a common penalty that applies to all party states of a particular Convention in the event of contravention.

The lacuna was created by conferring the Party States with absolute powers pertaining to the enactment of their National legislation. This resulted in the existence of different enforcement practices accompanied by different punishments directed to perpetrators, consequently leading to what is termed “lenient” and “harsh” enforcement and punishment. The existence of the differentiation in terms of “enforcement” and “punishment” amongst the Party States divorces itself from the international practice of solidarity when embarking on the quest of preventing the pollution of the marine environment.

Concerning national legislation, the drafters when drafting other legislations failed to appreciate the diverse and pluralistic nature of our country. They failed to acknowledge the presence and importance of Indigenous Knowledge Systems and this led to the promulgation of Acts that give rise to competing rights. A clear failure is demonstrated under the Marine Living Resources Act that incorporated the Marine Protected Areas which had the effect of protecting the environmental right at the expense of cultural rights.

## CHAPTER 3

### INSTRUMENTS AUGMENTING THE PREVENTION AND CONTROL OF MARINE POLLUTION ON INTERNATIONAL AND REGIONAL LEVEL

#### 3.1. INTRODUCTION

The regulation, control and prevention of marine pollution governance is somehow fragmented and is subject to many institutional frameworks within the auspices of international, regional, national and inter-governmental bodies. What is apparent is that, several of these bodies pivot their activities on conventions, such UNCLOS, and the 1992 United Nations Conference on Environment and Development (UNCED). They also use sectoral approaches predominate, undergird by initiatives and co-activities designed to foster improvement between different organizations that deal with maritime and marine management within and outside the United Nations system pertaining to integration, cooperation, coordination and coherence of policies and strategies.

This Chapter provides a discussion on the existing legal frameworks preventing and controlling marine pollution. It will touch both the regional and international legal frameworks. The International legal frameworks considered will particularly include UNCLOS, which has formed a constant system that seeks to safeguard the freedom of navigation and the interest of coastal states to protect and preserve the marine environment within their jurisdiction.<sup>214</sup>

UNCLOS provides the international and national legal marine framework that is required in coastal countries for issues pertaining to their sovereign rights and responsibilities relevant to the management of the marine environment and its resources.<sup>215</sup> Within its general framework, UNCLOS includes several worldwide agreements with respect to issues pertaining to the management of fisheries

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<sup>214</sup> Onwuegbuchunam, Ogwude, and Ibe 2017 *American Journal of Traffic and Transportation Engineering* 62.

<sup>215</sup> Grip 2017 *Ambio* 415.

resources and maritime traffic including the safety thereof. It further concerns itself with issues relating to the control of pollution, climate change, the protection of biodiversity, together with the need to conserve it and the advancement of regional agreements to protect and develop regional seas. This proliferation of agreements and associated arrangements have determined the number and nature of international bodies.

### **3.2. INTERNATIONAL MARINE GOVERNANCE – LEGAL FRAMEWORKS**

#### **3.2.1. United Nations Convention on Law of the Sea: UNCLOS**

Marine governance is concerned with the coordination of various uses of the ocean and the protection of the marine environment. Its effectiveness demands international rules and procedures that will regulate the ocean and that have been agreed upon by the State Parties. Due to mutual understanding by the State Parties pertaining to issues relating to the sea, a need arose for a new and generally acceptable Convention on the law of the sea. This gave birth to the existence of the UNCLOS Convention that concerns itself with issues such as but not limited to the (a) Exclusive Economic Zone and (b) Protection and preservation of the marine environment. These two pillars of the Convention are discussed separately below.

##### **3.2.1.1 Exclusive Economic Zones**

An Exclusive Economic Zone (EEZ) is a concept that was adopted at the Third United Nations Conference on the Law of the Sea 1982 as pointed out by Tommy T.B Koh.<sup>216</sup> He indicated that one of the most important achievements of the conference was the agreed-upon limits on different maritime zones in coastal states such as the EEZ.<sup>217</sup> The EEZ allows coastal states to assume jurisdiction in adjacent sections of the continental shelf up to 200 miles from the shore to exploit

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<sup>216</sup> Koh “date unknown”  
[https://www.un.org/depts/los/convention\\_agreements/texts/koh\\_english.pdf](https://www.un.org/depts/los/convention_agreements/texts/koh_english.pdf)  
(Accessed 23/08/2019).

<sup>217</sup> Koh 1983 46 *Law and Contemporary Problems* 7.

and explore marine resources.<sup>218</sup> Article 56 of the UNCLOS confers the rights, jurisdiction and duties of the coastal state to explore, exploit, conserve and manage all the natural resources of the waters within its territorial seabed and subsoil to exercise its economic exploitation and exploration.<sup>219</sup>

The extension of state's sovereignty through the EEZ is a commendable approach by the Convention. Through the extension of sovereignty, the state is compelled to ensure the protection of the marine environment. This is done through the imposed duty set out in Article 61 of the UNCLOS which states that "the coastal state shall determine the allowable catch of the living resources in its exclusive economic zone by ensuring proper conservation and management measures that ensure that the living resources in the exclusive economic zone are not endangered by over-exploitation".

This conservation and management of living resources as set out in Article 61 are informed by the EEZ's role on the livelihood of many countries through marine environment activities such as fisheries, natural gas reserves, tourism and the shipping of goods. The reliance on marine environment activities by different countries catalysed conflicts amongst and between the states.<sup>220</sup> Despite the Convention's efforts to incorporate a provision of dispute resolution amongst and between conflicting states in terms of Article 59, the international community witnessed a dispute over sea issues between China and the Philippines *South China Sea Arbitration, Philippines v China, Award, PCA Case*.

In this case, the two states had a dispute pertaining to maritime entitlements in the South China Sea. China claimed to have maritime entitlement within the South China Sea and the Philippines disputed the claim.<sup>221</sup> Philippines relied on the UNCLOS, stating that China's claim is inconsistent with the UNCLOS thus invalid. Philippines submitted that China is interfering with its sovereign rights in its

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<sup>218</sup> Bailey 1983 *Louisiana Law Review* 1270.

<sup>219</sup> United Nation Convention on the Law of Sea (1982).

<sup>220</sup> Song and Tonnesson 2013 *Ocean Development & International Law* 237.

<sup>221</sup> *South China Sea Arbitration, Philippines v China, Award* 2016 Permanent Court of Arbitration para 28.

Economic Exclusive Zone (EEZ) and continental shelf.<sup>222</sup> It opined further that even if for argument's sake, China had sovereign rights, the extent of maritime jurisdiction claimed by China is not within the entitlements permitted by the UNCLOS in respect of maritime zone. Apart from that, China has been preventing them from exploiting both living and non-living resources found in the waters that lie within its EEZ.

On the other hand, China relied on historical rights in respect of the South China Sea. It further raised an issue of jurisdiction by objecting that the tribunal has no jurisdiction to hear the matter.<sup>223</sup> One of the reasons advanced under the said objection was that Philippines and China had previously reached a consensus in terms of the China Asian Declaration on the Code of Conduct. The parties agreed to maintain the usage of the framework of regional rules to foster proper management and control of disputes arising between and amongst the parties to this agreement, to develop practical maritime cooperation and to ensure that peace and stability are maintained within the South China Sea.<sup>224</sup>

The objection was rejected on the basis that the agreement entered into and between the parties was political and lacked a binding effect on the parties, thus the tribunal will hear the matter. The tribunal heard the matter and came to the following considerations:

- That the Tribunal is asked to adjudge and declare that China shall respect the rights and freedoms of the Philippines under the Convention;
- that the Tribunal is asked to adjudge and declare that China shall comply with its duties under the Convention, including those relevant to the protection and preservation of the marine environment in the South China Sea.

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<sup>222</sup> (*Philippines v China case*) para 28.

<sup>223</sup> (*Philippines v China, case*) para 13.

<sup>224</sup> (*Philippines v China, case*) para 13.

- that the Tribunal is asked to adjudge and declare that China shall exercise its rights and freedoms in the South China Sea with due regard to those of the Philippines under the Convention;
- that all of these propositions fall within the basic rule of “pacta sunt servanda”, expressed in Article 26 of the Vienna Convention on the Law of Treaties as: “Every treaty in force is binding upon the parties to it and must be performed by them in good faith.” In essence, what the Philippines is requesting is a declaration from the Tribunal that China shall do what it is already obliged by the Convention to do and
- that as both Parties have pointed out, the Convention itself expresses in Article 300 that States Parties shall fulfil in good faith the obligations assumed under this Convention and shall exercise the rights, jurisdiction and freedoms recognized in this Convention in a manner which would not constitute an abuse of right.<sup>225</sup>

After having made the considerations, the Tribunal indicated that it was aware that different conventions placed a duty on the State to ensure that they peacefully resolved their disputes and when exercising their rights they must take due regard to the rights of other states.<sup>226</sup> To this end, the Tribunal realised that the dispute between China and the Philippines was not premised on the parties’ intention to infringe upon each other’s legal rights but was based on a different understanding relating to the Parties’ rights under the Convention pertaining to the South China Sea.<sup>227</sup> Thus, it was the responsibility of the Tribunal to provide parties with clarity in respect of the same.

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<sup>225</sup> (*Philippines v China case*) para 202-206.

<sup>226</sup> (*Philippines v China case*) para 1197.

<sup>227</sup> (*Philippines v China case*) para 1198.

In its conclusion, the Tribunal stated that both parties must resolve their dispute peacefully and to comply with the Convention in good faith.<sup>228</sup>

After considering the submissions made by the parties, the Tribunal made the declarations and findings in respect of the Parties' dispute by providing that " the United Nations Convention on the Law of the Sea defines the scope of maritime entitlements in the South China Sea, which may not extend beyond the limits imposed therein, concerning the historic rights, sovereign rights or jurisdiction, maritime areas and the nine-dash line are contrary to Convention and do not have any legal effect because they exceed the geographical limits of China's Maritime entitlements under the Convention".

The Tribunal further stated that the Convention superseded any historic rights, sovereign rights or jurisdiction, over the limits imposed therein. The promulgation of China's 2012 moratorium on fishing in the South China Sea without considering the areas falling within the Exclusive Economic Zone of the Philippines breached its obligation under Article 56 of the Convention pertaining to the Philippines sovereign rights over the living resources of its exclusive economic zone".

The Tribunal further provided that "China has contravened Articles 60 and 80 of the Convention in respect of the Philippines sovereign rights in its exclusive economic zone and continental shelf. And that China has breached its duty according to Articles 279, 296, and 300 of the Convention, as well as pursuant to general international law, to desist from any measures that have the potential of exercising a prejudicial effect regarding the execution of the decisions to be given and in general, not to allow any step of any kind to be taken which might aggravate or extend the dispute during such time as dispute resolution proceedings were ongoing".<sup>229</sup>

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<sup>228</sup> (Philippines v China case) para 1200.

<sup>229</sup> (Philippines v China case) para 202-206.



Despite the declarations and findings made by the Tribunal, China elected not to heed the Tribunal's declaration and findings.<sup>230</sup> De Castro indicated that China's election to ignore the Tribunal's declarations and findings might give rise to a possible eruption of war. He eloquently condemned China's Realpolitik approach by stating "the reliance realpolitik approach by China makes South China Sea dispute the most dangerous source of instability in East Asia and the most likely place where an armed conflict might erupt".<sup>231</sup> Allison also echoed his sentiments about China's election to ignore the Tribunal's ruling by stating, "China will be doing what other great powers have done before". He further stated that "... [t]he great powers may ignore international law but the effect will bear a stimulation of suspicions and counter activities that would work against their interests".<sup>232</sup> The two scholars condemn China's decision to ignore the Court's ruling.

The *Dispute Concerning Delimitation of the Maritime Boundary between Ghana v. Côte d'Ivoire*<sup>233</sup> addressed in part the marine area dispute pertaining to the Exclusive Economic Zone. In this case, it is averred that the parties reached a consensus pertaining to a dispute relating to the establishment of a single maritime boundary to delimit the territorial sea, Economic Exclusive Zone, and the Continental Shelf that includes the Continental Shelf beyond 200 nautical miles between themselves in the Atlantic Ocean.<sup>234</sup>

The parties did not agree on the issue of the establishment of the maritime boundary through tacit agreement. Ghana contended that both parties enjoyed and respected the maritime boundary that existed in the area based on a tacit agreement that existed between the parties emanating from the oil activities of both parties over the years.<sup>235</sup> Côte d'Ivoire averred that no tacit agreement existed between the two

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<sup>230</sup> Buszynski and Roberts *the South China Sea Maritime Dispute Political, Legal and Regional Perspectives* 128.

<sup>231</sup> De Castro 2012 *Pacific Focus Inha Journal of International Law* 278.

<sup>232</sup> Buszynski and Roberts *the South China Sea Maritime Dispute Political, Legal and Regional Perspectives* 139.

<sup>233</sup> *Dispute Concerning Delimitation of the Maritime Boundary between Ghana and Côte D'ivoire in The Atlantic Ocean* (2017) International Tribunal for The Law of the Sea.

<sup>234</sup> (*Ghana/Côte D'ivoire case*) paragraph 4.

<sup>235</sup> (*Ghana/Côte D'ivoire case*) paragraph 102.

parties, thus, Ghana's practice in the disputed area should be deemed as a contravention of international law.<sup>236</sup> After consideration of the parties submissions, the Special Chamber concluded that there was no tacit agreement between the Parties to delimit their territorial sea, the exclusive economic zone and the continental shelf both within and beyond 200 nm.<sup>237</sup> Judge Mensah concurred with the conclusion made by Special Chamber and stated that:

I agree with the Special Chamber that Ghana has not provided sufficiently convincing reasons to establish that there is in fact a tacit agreement between Ghana and Cote d'Ivoire for the delimitation of their Territorial Sea, Exclusive Economic Zone and Continental Shelf within 200nm.<sup>238</sup>

Ma in his opinion on this case stated that the discussions of oil activities are unilateral because of the lack of any provisional arrangement between Ghana and Cote d'Ivoire.<sup>239</sup> The case consists of two connected legal issues about the unilateral oil activities in the disputed marine areas. The first issue is concerned with the legal effect of unilateral oil activities and the second issue is on the legality of unilateral oil activities. These two issues are connected to an extent that if they are both considered illegal, they cannot make any contribution to the improvement of the legal position of the party who undertakes them.<sup>240</sup>

The Special Chamber first addressed the issue concerning the legal effect of unilateral oil activities. It provided that, in order to establish a tacit agreement pertaining to the maritime boundary, the evidence establishing the same should be compelling.<sup>241</sup> In this case, the consistent and mutual oil practices that occurred for

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<sup>236</sup> (*Ghana/Côte D'ivoire case*) paragraph 103.

<sup>237</sup> (*Ghana/Côte D'ivoire*) paragraph 228.

<sup>238</sup> See separate judgment of Judge Mensah on the International Tribunal For The Law of the Sea. [https://www.itlos.org/fileadmin/itlos/documents/cases/case\\_no.23\\_merits/C23\\_J230917\\_SOMensah\\_orig.pdf](https://www.itlos.org/fileadmin/itlos/documents/cases/case_no.23_merits/C23_J230917_SOMensah_orig.pdf) (Accessed 19/01/2020).

<sup>239</sup> Ma 2017 <http://opiniojuris.org/2017/11/09/ghana-v-cote-divoire-unilateral-oil-activities-in-disputed-marine-areas/> (Accessed on 19/01/2020).

<sup>240</sup> Ma 2017 <http://opiniojuris.org/2017/11/09/ghana-v-cote-divoire-unilateral-oil-activities-in-disputed-marine-areas/> (Accessed on 19/01/2020).

<sup>241</sup> (*Ghana/Côte D'ivoire*) paragraph 212.

a long time as alleged by Ghana cannot be conclusive proof of the existence of a maritime boundary.<sup>242</sup> Thus, the Special Chamber was doubtful that there ever existed a tacit agreement pertaining to a maritime boundary in the area concerned. It was also held that the nature of the maritime boundary would mean that evidence concerning the specific purpose of oil activities in the seabed and subsoil could clearly define the extent of the boundary”.<sup>243</sup>

According to Ma, in “principle, the location of oil resources could not be considered a relevant circumstance in maritime delimitation and that the only exception to this principle is that the delimitation was likely to entail catastrophic repercussions for the livelihood and economic well-being of the population of the countries concerned”.<sup>244</sup> The Special Chamber further dealt with the issue of legality during the proceedings of provisional measures where Côte d’Ivoire requested the Chamber to prescribe provisional measures requiring Ghana to the following:

Take all steps to suspend all ongoing oil exploration and exploitation operations in the disputed area, refrain from granting any new permit for oil exploration and exploitation in the disputed area, take all steps necessary to prevent information resulting from past, ongoing or future exploration activities conducted by Ghana, or with its authorization, in the disputed area from being used in any way whatsoever to the detriment of Côte d’Ivoire and, generally, take all necessary steps to preserve the continental shelf, its superjacent waters and its subsoil; and desist and refrain from any unilateral action entailing a risk of prejudice to the right of Côte d’Ivoire and any unilateral action that might lead to aggravating the dispute.<sup>245</sup>

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<sup>242</sup> (*Ghana/Côte d’Ivoire*) paragraph 215.

<sup>243</sup> (*Ghana/Côte d’Ivoire*) paragraph 226.

<sup>244</sup> Ma 2017 <http://opiniojuris.org/2017/11/09/ghana-v-cote-divoire-unilateral-oil-activities-in-disputed-marine-areas/> (Accessed on 28/01/2020).

<sup>245</sup> See Press Release on International Tribunal for The Law of the Sea Special Chamber 2015 Dispute Concerning Delimitation of the Maritime Boundary Between Ghana and Côte d’Ivoire in the Atlantic Ocean Request for the prescription of

In response to the provisional measures sought above, the Special Chamber reserved the subsequent procedure for further decision.<sup>246</sup> Later on, the Special Chamber when addressing provisional measures made an order against Ghana requesting it to cease conducting any new drilling in the disputed area. However, it permitted Ghana to proceed with the ongoing drilling in the disputed area, provided that, there is continuous monitoring of those activities to avoid the occurrence of harm to the environment.<sup>247</sup>

### **3.2.1.2. Protection and Preservation of the Marine Environment**

Article 192 of the UNCLOS unequivocally imposes a duty on the states to ensure the protection and preservation of the marine environment. On this issue, Joanna Massop argued that:

There is no doubt that UNCLOS was a momentous step towards the environmental protection of the oceans. Subsequent developments include the negotiation of a myriad of new, sectorally-focused treaties, many of which have the environment as a key consideration. Despite these advances, however, the state of the ocean environment has worsened in a number of important respects. The number of fish stocks that are overfished has increased over time rather than decreased, despite the existence of a number of regional fisheries management organisations which are responsible for achieving sustainable catches. It is estimated that 90 per cent of top predators in the oceans have been depleted from pre-industrial levels. In many parts of the world, destructive fishing practices heavily impact on marine ecosystems. Plastic

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provisional measures submitted by the Republic of Côte d'Ivoire Under Article 290 of The United Nations Convention on The Law of the Sea 3.

<sup>246</sup> *Delimitation of the Maritime Boundary in the Atlantic Ocean (Ghana/Côte d'Ivoire)*, Order of 6 March 2015, ITLOS Reports 140.

<sup>247</sup> (*Ghana/Côte d'Ivoire case*) order of 25 April 2015 ITLOS Reports 108.

pollution of the ocean has become recognised as one of the biggest threats to healthy oceans [...]<sup>248</sup>

In the quest of remedying the abovementioned utterance about the protection and preservation of the marine environment, Parties States are implored to ensure that activities under their control and jurisdiction are conducted in a manner that does not cause damage by pollution to other States and their environment.<sup>249</sup> This calls for the interplay between Article 192 which imposes a duty on the States to ensure protection and preservation of the marine environment and Article 194(1) which imposes a duty to come with measures to prevent, reduce and control marine environment pollution.<sup>250</sup>

Furthermore, emphasis on this issue is given by Article 195 of the UNCLOS which condemns the transfer of damage or hazards into another State. Despite the keenness of the above-stated Articles to protect and preserve the marine environment, it is herein observed that their success in terms of execution relies heavily on the incorporation of international law into domestic law by the States. This is backed by Gullett stating that:

...[t]he dualism theory holds that international law and domestic law operate in two separate, independent spheres because of the different sources of the two fields of law (domestic law is sourced in the will of the sovereign State whereas international law is sourced in the collective will of individual states). This means that developments in international law do not automatically affect change to a State's domestic laws. Rather, international law needs to be 'transformed' or 'incorporated' into domestic law by a specific action of the State, typically by the enactment of implementing legislation.<sup>251</sup>

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<sup>248</sup> J Mossop 2018 *VUWLR* 574.

<sup>249</sup> Article 194(2) of the United Nations on the Law of Sea (1982).

<sup>250</sup> UNCLOS A 194(1).

<sup>251</sup> Gullett 2013 *The University of Tasmania Law Review* 186.

Apart from the above-stated averments, States may resort to the use of international principles to implement the duties imposed on them by the Convention. The international principles are relevant to the course due to their long-standing history of deterring pollution of the marine environment. Amongst other international principles relevant in this regard includes the principle of good neighbourliness and international co-operation which deals with the concept of State responsibility in cases where violation of rights of a neighbouring state occurred. In this instance, the principle calls for an international legal obligation flowing from the international neighbour-relations to ensure that the damaged State is compensated for the damages suffered as a result of its neighbouring State's conduct.<sup>252</sup>

This promotes what Article 197 of the UNCLOS seeks to achieve by providing that "States shall cooperate on a global basis and, as appropriate, on a regional basis, directly or through competent international organizations, in formulating and elaborating international rules, standards and recommended practices and procedures consistent with this Convention, for the protection and preservation of the marine environment [...]", (b) the principle of preventive action that obliges the State Party to pro-actively prevent environmental damage within its jurisdiction to halt the occurrence of irreparable harm and obviate a reactive method of restoration.<sup>253</sup> (c) the precautionary principle which promotes the classical adage "better safe than sorry" because it encourages the States to take precautionary measures against incidents that may be harmful to the environment without waiting for clear evidence of harm.<sup>254</sup>

This principle requires the state to exercise precautions without any consideration of the costs involved in exercising those precautionary measures.

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<sup>252</sup> Wolfrum 1990 *German Yearbook of International Law* 316.

<sup>253</sup> Soto 1996 3 *ILSA J. Int'l & Comp. L.* 199.

<sup>254</sup> R Sustain 2003 *The University of Pennsylvania Law Review* 1003-1004.

### **3.2.2. The 1992 United Nations Conference on Environment and Development (UNCED)**

Chapter 17 of Agenda 21 (UNCED) seeks to protect the ocean. In the quest of doing the same, it emphasized important principles of sustainable development. It provided for the advancement of programme areas *to wit* “(a) Integrated management and sustainable development of coastal and marine areas, (b) Marine environmental protection; Sustainable use of marine living resources of the High Seas (c) Sustainable use and conservation of marine living resources under national jurisdiction, (d) Addressing critical uncertainties for the management of the marine environment and climate change, (e) Strengthening international, including regional, cooperation and coordination and (f) Sustainable development of Small Islands Developing States (SIDS)”. For a better understanding of the importance of these principles brought forward by the UNCED, each principle shall be discussed separately below.

#### ***3.2.2.1. Integrated management and sustainable development of coastal areas, including Exclusive Economic Zones***

Coastal environments around the world are under immense pressure due to issues such as but not limited to unsustainable fishing, unplanned development, marine pollution and extension of different marine species.<sup>255</sup> These issues made an imperative call for the integrated management of coastal areas through policies, legislations and management actions in the quest of protecting coastal areas. Integrated Coastal Management refers to the “dynamic process in which a coordinated strategy is developed and implemented for the allocation of environmental, socio-cultural and institutional resources to achieve the conservation and sustainable multiple uses of the coastal zone”.<sup>256</sup>

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<sup>255</sup> Quesada, Klenke and Mejía-Ortíz 2018 *Sustainability Journal* 1.

<sup>256</sup> Food and Agricultural Organization (FAO) 2006 <http://www.fao.org/3/a-a0863e.pdf> (Accessed on 28/01/2020).

This definition requires one to fathom the complexity and the dynamic system of the coasts that comprise of different interactions that are useful to both humans and the ecosystem. Mohammed El-Sabh, Serge Demers and Danielle Lafontaine stated that:

[a]round one-third of the world's coastal region, including coastal ecosystems and the accompanying biodiversity are particularly vulnerable to land-based sources of pollution and infrastructure development related to human activities. Consequently, the rich natural resources of coastal regions, like those of coastal waters, are under very strong pressure. The threats to the coastal zone are enormous and include not only wastes from densely populated coastal areas but also many other factors, such as upstream pollutants carried by rivers and released into coastal waters, municipal and industrial effluent discharges, oil spills, urban encroachment, erosion, ships' ballast discharges, deforestation and hydro-electric projects.<sup>257</sup>

The above-stated situation necessitates the need to manage the coast as an integrated whole. Failure to heed the call of integrated management will have a knock-on effect on the sustainability of coastal resources thus adversely affecting peoples' source of living and contribution to the economy. In South Africa, the proper management and responsible use of coastal resources benefits the well-being of the country's economy and its citizens.

On the part of the citizens, the benefits arise from the creation of employment in the fishing industries for people around the coastal areas and afar, whereas, on the well-being of the economy, marine resources production make a positive

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<sup>257</sup> El-Sabh, Demers and Lafontaine 1998 *Ocean Coast. Manage* 2.



contribution through marine sales such as seafood, port and harbor development, recreational and tourism opportunities.<sup>258</sup>

In response to the call for integrated management of coastal areas, South Africa took a step in the right direction by promulgating MLRA. Although the Act does not directly deal with the integrated management of coastal zones, it does however amongst its objectives deal with how to achieve sustainable development through the optimum usage and ecological consideration of marine living resources and its conservation for the benefit of both the present and future generations.<sup>259</sup> These objectives will have a positive bearing on the sustainability of marine living resources, including those that reside within the coastal areas.

A direct legal framework relevant to the issue in hand is the National Environmental Management: Integrated Coastal Management Act 24 of 2008 with its preamble indicating:

The constitutional right to have the coastal environment, protected for the benefit of present and future generations; that integrated management of the coastal zone as a system is essential to achieve the constitutional commitment to improving the quality of life of all citizens while protecting the natural environment for the benefit of present and future generations; that the coastal zone is a unique part of the environment in which biophysical, economic, social and institutional considerations interconnect in a manner that requires a dedicated and integrated management approach; that much of the rich natural heritage of our coastal zone is being squandered by overuse, degradation and inappropriate management; that the conservation and sustainable use of the coastal zone requires the establishment of an innovative

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<sup>258</sup> Department of Environmental Affairs 2014 [https://www.environment.gov.za/sites/default/files/reports/nationalcoastal\\_managementprogramme\\_ofsouthafrica.pdf](https://www.environment.gov.za/sites/default/files/reports/nationalcoastal_managementprogramme_ofsouthafrica.pdf) (Accessed 28/01/2020).

<sup>259</sup> MLRA section 2.

legal and institutional framework that clearly defines the status of coastal land and waters and the respective roles of the public, the State and other users of the coastal zone and that facilitates a new co-operative and participatory approach to managing the coast.

It is submitted that the crafting of this preamble presents a promising commitment to achieving the goal of integrated coastal management. It has reasonably attempted to accommodate delicate issues about this endeavor. Thus, it opens room for meaningful deliberations and contributions towards the integrated coastal management issues. A positive step that produced a glimmer of hope towards the proper governance of integrated coastal management is encapsulated in Chapter 6 of the Act that has conferred all the spheres of government with the responsibility of coastal management.

At a national level, the Act obliges the minister to prepare and adopt a national coastal management programme for managing the coastal zones within four years after the Act becomes effective.<sup>260</sup> Such a programme must be reviewed at least once every five years.<sup>261</sup> At a Provincial level, the MEC must also prepare and adopt a provincial coastal management programme for managing the coastal zones within four years of the Act becoming effective.<sup>262</sup> The MEC is also obliged to review the programme at least once every year.<sup>263</sup> In Municipalities, the obligation is on the coastal municipality itself.

The municipality is obliged to prepare and adopt a municipal coastal zone within four years of the coming into operation of this Act<sup>264</sup> and review any programme adopted once every five years.<sup>265</sup> Furthermore, Sections 79 and 80 deal with offences and penalties respectively, both have demonstrated a satisfactory approach in the deterrence of the deterioration of coastal resources through

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<sup>260</sup> *NEM:ICMA* section 44(1)(a).

<sup>261</sup> *NEM:ICMA* section 44(1)(b).

<sup>262</sup> *NEM:ICMA* section 46(1)(a).

<sup>263</sup> *NEM:ICMA* section 46(1)(b).

<sup>264</sup> *NEM:ICMA* section 48(1)(a).

<sup>265</sup> *NEM:ICMA* section 48(1)(b).

conducts declared to be offences and stringent penalties in respect of those offences. On the whole, South Africa did reasonably well in respect of integrated coastal management.

### **3.2.2.2. Marine environmental protection**

The international law community is applauded for an astounding development pertaining to the consciousness of the marine environment. This consciousness has eradicated a misconception that the ocean is so vast that everything can be dumped with impunity. It has sensitized people about the inextricable relationship between humans and the ocean through marine activities *viz* food, transportation, medicine, recreation and energy. This relationship is threatened by marine pollution and other marine environment stressors.

Hence, it is imperative to trust in the legal framework to regulate, protect and preserve the marine environment. The trust in legal frameworks is abridged in Part XIII of the UNCLOS which provides for the general obligation imposed on the states to protect and preserve the marine environment.<sup>266</sup> This is an obligation that South Africa has complied with by enacting legal frameworks aimed at protecting the marine environment.

These include MLRA and Marine Spatial Planning Act 16 of 2018 (MSPA) amongst others. These legislations immensely contributed to the protection of the marine environment. Chapter 4 of MLRA specifically deals with marine protected areas with the core intention to protect the marine environment and its resources.<sup>267</sup> Wood *et al* stated that marine protected areas play an important role in managing and controlling the reduction rate of species decline in the marine environment.<sup>268</sup>

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<sup>266</sup> UNCLOS A 192.

<sup>267</sup> Section 43(1) of *MLRA* states that “The Minister may, by notice published in the Gazette, declare an area to be a marine protected area for the protection of fauna and flora or a particular species of fauna or flora and the physical features on which they depend;(b) to facilitate fishery management by protecting spawning stock, allowing stock recovery, enhancing stock abundance in adjacent areas, and providing pristine communities for research; or(c) to diminish any conflict that may arise from competing uses in that area”.

<sup>268</sup> Wood et al 2008 *Fauna & Flora International*, *Oryx*, 340.

Regulations of marine protected areas also reduce possible conflicts that may arise within that area by restricting certain activities to be conducted within the marine protected areas without the permission of the Minister.<sup>269</sup>

In assessing the effectiveness of Marine Protected Areas (MPA), researchers need to regularly collect evidence to determine whether they are achieving the outcomes that they have set by comparing the outcomes before and after the implementation of MPAs.<sup>270</sup> Furthermore, the intervention of MSPA will also assist in providing a framework for marine spatial planning and governance of the use of the ocean by different sectors.<sup>271</sup> Of late, marine spatial planning has gained momentum in the achievement of different objectives pertaining to ocean management.<sup>272</sup> The intervention of MSPA is done with the objects to conserve the ocean for the current and future generations.<sup>273</sup>

Thus, indigenous knowledge will contribute positively to the course because the indigenous people who live, work or involved in different activities around the ocean observe changes over their lifetimes. This allows them to accumulate generations of knowledge regarding previous baselines of marine resources. Indigenous knowledge, wisdom and practices are passed generationally, hence they should be considered important in informing the goals and objectives of marine spatial planning.<sup>274</sup>

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<sup>269</sup> Section 43(2) of the *MLRA* states that “No person shall in any marine protected area, without permission in terms of subsection (3) (a) fish or attempt to fish;(b) take or destroy any fauna and flora other than fish;(c) dredge, extract sand or gravel, discharge or deposit waste or any other polluting matter, or in any way disturb, alter or destroy the natural environment; (d) construct or erect any building or other structure on or over any land or water within such a marine protected area; or (e) carry on any activity which may adversely impact on the ecosystems of that area”.

<sup>270</sup> Pendleton et al 2018 *CES Journal of Marine Science* 1157.

<sup>271</sup> The Preamble of *Marine Spatial Planning Act 16 of 2018 (MSPA)*.

<sup>272</sup> Lombard et al. 2019 *Frontiers in Marine Science* 2.

<sup>273</sup> *MSPA* section 2.

<sup>274</sup> Lombard et al 2019 *Frontiers in Marine Science* 2.

### **3.2.2.3. Sustainable use and conservation of marine living resources of the high seas**

Marine living resources form part of the important species of the earth and play an important role to human beings around the world. The increasing demand for the utilization of marine living resources makes them susceptible to harm thus placing conservation and sustainable use at the apex of regulation. The UNCLOS in its preamble included the conservation of marine living resources as part of the aim of the Convention.<sup>275</sup> This explains the inclusion of Part XII, Section 2 of the UNCLOS that deals with the conservation and management of the living resources of the high seas. In this part and section, all the states are given the right to fish on the high sea, however, such right is not absolute.<sup>276</sup> They are also tasked with a duty to adopt their nationals' measures for the conservation of the living resources of the high seas and to cooperate with other States in taking such measures.<sup>277</sup>

On the issue of cooperation between the states, Article 118 of the UNCLOS succinctly expresses the approach to be followed by the states stipulating that "states shall cooperate with each other in the conservation and management of living resources in the areas of the high seas and that states whose nationals exploit identical living resources, or different living resources in the same area, shall enter into negotiations with a view to taking the measures necessary for the conservation of the living resources concerned. They shall, as appropriate, cooperate to establish sub-regional or regional fisheries organizations to this end". Furthermore, the states are tasked with a responsibility to determine the allowable catch and establish other conservation measures for the living resources in the high seas.

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<sup>275</sup> UNCLOS Preamble.

<sup>276</sup> UNCLOS A 116 provides that "All States have the right for their nationals to engage" "in fishing on the high seas subject to: (a) their treaty obligations, (b) the rights and duties as well as the interests of coastal States provided for, inter alia, in article 63, paragraph 2, and articles 64 to 67; and (c) the provisions of this section".

<sup>277</sup> UNCLOS A 117 provides that "All States have the duty to take, or to cooperate with other States in taking, such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas".

The relevant provision of Article 119 of the UNCLOS states that “in determining the allowable catch and establishing other conservation measures for the living resources in the high seas, States shall (a) take measures which are designed, on the best scientific evidence available to the States concerned, to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yields, as qualified by relevant environmental and economic factors, including the special requirements of developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether sub-regional, regional or global, (b) take into consideration the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened”.

Furthermore, the same section provides that “available scientific information, catch and fishing effort statistics, and other data relevant to the conservation of fish stocks shall be contributed and exchanged regularly through competent international organizations, whether sub-regional, regional or global, where appropriate and with participation by all States concerned and that States concerned shall ensure that conservation measures and their implementation do not discriminate in form or in fact against the fishermen of any State”.

In light of the abovementioned Article, different scholars have respectively ventilated on the issue of allowable catch from different angles. Cohen and Alexander discussed the issue of catch rates, composition and fish size from reefs managed with periodically harvested closures.<sup>278</sup> Young *et al* focused on the adaptation strategies of coastal fishing communities as species shift poleward.<sup>279</sup> Jauhari *et al* addressed the fish catch quota assessment for sustainable marine fisheries resources in East Java.<sup>280</sup>

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<sup>278</sup> Cohen and Alexander 2013 <https://doi.org/10.1371/journal.pone.0073383> (Accessed on 30/01/2020).

<sup>279</sup> Young et al 2019 *Journal of Marine Science* 99.

<sup>280</sup> Jauhari et al 2018 *International Journal of GEOMATE* 40.

South Africa made a considerable effort to heed the call of conservation and sustainable use of marine resources of the high seas. Part 7 of MLRA prohibits people from fishing or conducting any related activities on the high seas in the Republic without a license issued for fishing.<sup>281</sup> That license is regulated in terms of Section 41(1) – (4) of the MLRA which stipulates the following:

(1) The Minister may issue a high seas fishing license in respect of a local fishing vessel, subject to the conditions that he or she considers appropriate.

(2) A high seas fishing license shall be valid for a period not exceeding one year.

(3) A high seas fishing license shall only be issued in respect of a local fishing vessel.

(4) A high seas fishing license shall terminate-

(a) on the expiration of the period for which it was valid;

(b) should the vessel cease to be registered in the Republic;  
or

(c) should the master, owner or charterer of the high seas fishing vessel be convicted of an offence in terms of Section 39(5)".

The Act also acknowledges the importance of international law by recognizing the implementation of international conservation and management measures by providing information to an international organization which the state is a party to. Furthermore, by sharing information with other states that are Parties to the same

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<sup>281</sup> See Section 40 of *MLRA* states that "No person shall undertake fishing or related activities on the high seas by means of a fishing vessel registered in the Republic unless a high seas fishing vessel licence has been issued in respect of such a fishing vessel".

Convention to assist them to implement measures to that can effectively promote conservation and sustainable use of marine resources on the high seas.<sup>282</sup>

#### **3.2.2.4. Sustainable use and conservation of marine living resources under national jurisdiction**

Marine living resources under national jurisdiction face different challenges such as but not limited to under evaluation of catch, overfishing, insufficiently selective gear and unreliable database.<sup>283</sup> These challenges if they are not mitigated, combatted or eradicated, may have a knock-on effect on the ecological functions played by marine resources including coastal protection, food security, tourism and economic development. To respond to these challenges, a precautionary approach may be adopted.

Yoshifumi Tanaka explains the advantage of a precautionary approach by stating that its benefit is that once a risk has been identified one need not wait until damage occurs before taking action to protect the environment rather action is taken before damage can occur.<sup>284</sup>

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<sup>282</sup> See Section 42 of *MLRA* which provides that “The Minister may provide appropriate information in terms of international conservation and management measures to an international organisation of which the Republic is a member, or to states parties to such international conservation and management measures. (2) The Minister may exchange information, including evidentiary material, with other states that are parties to international conservation and management measures to enable the Republic and such other states to better implement the objects of such international conservation and management measures. (3) If the Director-General has reason to suspect that a foreign fishing vessel was involved in a contravention of an international conservation or management measure, he or she may (a) provide to the appropriate authorities of the flag state of the foreign fishing vessel concerned, such information, including evidentiary material, relating to that contravention; and (b) when such foreign fishing vessel is voluntarily in a port of the Republic, promptly notify the appropriate authorities of the flag state of the vessel accordingly. (4) The Minister may from time to time publish by notice in the Gazette particulars of any international conservation and management measures or international agreement concerning marine living resources”.

<sup>283</sup> Report of the United Nations Conference on Environment and Development 1992 [https://www.un.org/Depts/los/consultative\\_process/documents/A21-Ch17.htm](https://www.un.org/Depts/los/consultative_process/documents/A21-Ch17.htm) (Accessed on 30/01/2020).

<sup>284</sup> Y Tanaka 2011 *ZaöRV* 312.



In an attempt to promote sustainable use and conservation of marine living resources, Article 145 of the United Nations Convention on the Law of Seas encourages States to ensure protection and preservation of the marine environment by stating that:

Necessary measures shall be taken in accordance with this Convention with respect to activities in the Area to ensure effective protection for the marine environment from harmful effects which may arise from such activities. To this end, the Authority shall adopt appropriate rules, regulations and procedures for inter alia:(a) the prevention, reduction and control of pollution and other hazards to the marine environment, including the coastline, and of interference with the ecological balance of the marine environment, particular attention being paid to the need for protection from harmful effects of such activities as drilling, dredging, excavation, disposal of waste, construction and operation or maintenance of installations, pipelines and other devices related to such activities;(b) the protection and conservation of the natural resources of the Area and the prevention of damage to the flora and fauna of the marine environment.

The above-mentioned Article motivated the emergence of Declarations such as the CANCUN Declaration where countries around the world committed themselves to the sustainable use of marine resources in a harmonious way with the environment.<sup>285</sup>

On the guidance for mainstreaming conservation and sustainable use of biodiversity in the fisheries and aquaculture sector, the CANCUN Declaration provided that “...Fisheries and aquaculture depend on the sustainable use of biodiversity and ecosystems to maintain economic, social and ecological benefits in the long term.

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<sup>285</sup> Cancun Declaration 2016 <https://www.cbd.int/cop/cop-13/hls/in-session/cancun-declaration-draft-dec-03-2016-pm-en.pdf> (Accessed on the 24/11/2019).

Biodiversity is the source of wild fisheries, and mainstreaming biodiversity in fisheries policies, programmes and plans is key to sustain the habitats which serve as feeding, spawning and nursery sites that are essential for wild fish populations. Sustainable fisheries and aquaculture are key components of sustainable development”.<sup>286</sup>

The Declaration further indicated the need to enhance sustainable fishing and aquaculture to positively contribute to food security by employing a strategy of integrating fisheries policies and programmes. This is done in the quest of protecting the employment and the livelihood of the fishing communities and also for the conservation of the marine environment, particularly the endangered species and aquatic ecosystem.<sup>287</sup>

On the national level MLRA, in terms of Chapter 3, contributes positively to the quest towards sustainability and conservation of marine resources by including the provision of management of marine living resources that comprise of fisheries planning which concerns itself with the determination of allowable catches and applied effort,<sup>288</sup> fisheries management areas,<sup>289</sup> emergency measures,<sup>290</sup> priority fishing areas,<sup>291</sup> granting of rights,<sup>292</sup> subsistence fishing,<sup>293</sup> commercial fishing,<sup>294</sup> and leasing the rights.<sup>295</sup>

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<sup>286</sup> Cancun Declaration 2016 <https://www.cbd.int/cop/cop-13/hls/in-session/cancun-declaration-draft-dec-03-2016-pm-en.pdf> (Accessed on the 24/11/2019).

<sup>287</sup> Cancun Declaration <https://www.cbd.int/cop/cop-13/hls/in-session/cancun-declaration-draft-dec-03-2016-pm-en.pdf> (Accessed on 24/11/2019).

<sup>288</sup> Section 14 (1) and (2) of *MLRA* which gives the Minister the powers to determine the total and portions of allowable catch, the applied effort or a combination of both. See also Section (3) which provides that when the Minister executes his/her powers in respect of this section, he/she must determine in which particular area and what type species or group of species allowed for a total or portion allowable catch or combination thereof.

<sup>289</sup> *MLRA* section 15.

<sup>290</sup> *MLRA* section 16.

<sup>291</sup> *MLRA* section 17.

<sup>292</sup> *MLRA* section 18.

<sup>293</sup> *MLRA* section 19.

<sup>294</sup> *MLRA* section 20.

<sup>295</sup> *MLRA* section 21.

### **3.2.2.5. Addressing critical uncertainties for the management of the marine environment and climate change**

In a topic that involves the management, sustainability and conservation of natural resources such as the marine environment, a dialogue about climate change is always inevitable. Hence, Agenda 21 of UNCED embarks on exploring plausible solutions and finding measures to address the uncertainties faced by the marine environment in the ever-changing world. The marine environment was commonly threatened by activities such as marine pollution emanating from land-based activities, sea bed activities and vessel source pollution until climate change proved itself to be an additional stress to the sustainability and conservation of the marine environment.<sup>296</sup> As a result, sea surfaces temperatures and sea surface salinities in most regions have changed.<sup>297</sup> Continuous climate change will have an impact on marine socio-ecological systems such as the shift in species. This will result in the local extinction of other marine species populations and an alteration of primary productivity.<sup>298</sup>

The results will particularly cause uncertainty in the commercial yield of marine species. The international community has always demonstrated clear calls to act against the impacts of climate change on the marine environment. This issue found itself in the passage of the World Summit on Sustainable Development (WSSD) held in South Africa in the year 2002, The Cancún Oceans Day event held in Mexico in the year 2010 and the United Nations Conference on Sustainable Development held in Brazil in the year 2012.

**(a)** *World Summit on Sustainable Development, South Africa, 2002 (WSSD).*

The main aim of the WSSD was to introduce co-operation between the states on environmental issues such as conventions and protocols ratification,

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<sup>296</sup> Tanaka 2006 *Heidelberg Journal of International Law* 536.

<sup>297</sup> Stauber and Apte, 2016 <https://www.sciencedirect.com/topics/biochemistry-genetics-and-molecular-biology/sea-surface-temperature> (Accessed on 25 November 2019).

<sup>298</sup> Doney et al 2012 *Annual Review of Marine Science* 22.

implementation and proper execution of environmental principles, strengthen the interdependent pillars of sustainable development, social development and environmental protection at all levels. The Secretary-General in his speech at this summit sensitized the states about the conflicting interest between the benefits of economic development and environmental protection by stating that:

'[H]umans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history, largely to meet rapidly growing demands for food, fresh water, timber, fibre, and fuel. This has resulted in a substantial and largely irreversible loss in the diversity of life on Earth. Admittedly, some of these changes have contributed to substantial net gains in human well-being and economic development, but the balance is rapidly tilting in the opposite direction. The gains were achieved at the cost of the degradation of many ecosystem services, increased risks of nonlinear changes, and indeed the exacerbation of poverty for some groups of people. Unless addressed, the benefits and possibly even the possibility of survival of future generations will be seriously eroded. From climate change and its myriad impacts, through to the destruction of and damage to ecosystems, the loss of biodiversity and the degradation of the natural environment'.<sup>299</sup>

The above-mentioned utterance set in motion the commitment of governments to adopt goals and targets that may assist in the sustainability and conservation of the marine environment in the world largely affected by climate change. Amongst other goals, the Summit emphasized marine integrated management; protection of the marine environment from land-based activities, biodiversity and marine protected areas, fisheries and aquaculture.

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<sup>299</sup> Andrews *Managing the Environment, Managing Ourselves: A History of American Environmental Policy* 396.

b) *The Cancún Oceans Day event held in Mexico in the year 2010*

The World Ocean Day<sup>300</sup> event was held in Mexico to deal with topics affecting the oceans. Ocean acidification and climate change were amongst the issues discussed in that event. Osterloff describes ocean acidification to be caused by the dissolution of carbon dioxide into the ocean with the effects of decreasing the water's PH and making the ocean more acidic.<sup>301</sup> There are identified major sources of ocean acidification *viz* fossil fuel burning, oil and gas from human industry and to some extent, deforestation plays a role.<sup>302</sup>

The impact of ocean acidification poses dire consequences to a variety of marine environments including the coral reef ecosystems and species residing in the deep sea to name a few. Acidification on the coral reef ecosystem occurs quickly and easily tampers with the calcification rate of marine organisms and reproduction. In the worst-case scenarios, it can destroy coral reef structures and leave marine organisms without shelter.<sup>303</sup> In contrast, deep-sea acidification occurs at a slow rate than coral reefs, however, the consequences are likely to be at par. This is supported by Dalhoff when she indicated that:

[T]he environmental stability of the deep sea over long time scales is postulated to have reduced the tolerance of deep-

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<sup>300</sup> The aim of World Ocean Day is to foster awareness pertaining to the importance and the role of the oceans. This initiative is there to advocate for the conservation and protection of marine environment. This is done on the strength of the resolution that was of the United Nations General Assembly to declare that declared the 8<sup>th</sup> June of each year to be the World Ocean Day. This prestigious day affords marine environmentalist an opportunity to share ideas and initiatives pertaining to the protection of marine environment. Different themes are suggested annually for the day of celebration, in 2018 the World Ocean Day theme was "Preventing plastic pollution and encouraging solutions for healthy ocean", in 2019 the theme was "Gender and the Ocean and in 2020 theme was "Governance, Finance and Innovation, however in 2020 the Covid-19 Pandemic compromised the Big Day. The 2021 theme for the World Ocean Day is "The Ocean: Life & Livelihoods".

<sup>301</sup> Osterloff 2017 <https://www.nhm.ac.uk/discover/what-is-ocean-acidification.html> (Accessed on 26/11/2019).

<sup>302</sup> Osterloff 2017 <https://www.nhm.ac.uk/discover/what-is-ocean-acidification.html> (accessed on 26/11/2019).

<sup>303</sup> National Academy of Sciences 2010 <https://www.nap.edu/catalog/12904/ocean-acidification-a-national-strategy-to-meet-the-challenges-of>.(Accessed on 26/11/2019).

sea species to environmental extremes through the loss of more tolerant genotypes, thus, decreasing the potential for adaptation to future ocean acidification.<sup>304</sup>

Based on the above-mentioned assertion, it is submitted that the international community on the marine environment should opt to adopt a proactive ecological resilience approach to mitigate, combat or deter the consequences of acidification. This approach is feasible due to manifestations of acidification including the capability of producing irreversible harm. Thus, reactive resilience will prove to be futile in the cause of remedying such manifestations.

In an attempt to come with measures that may mitigate acidification, Harrould-Kolieb spoke at the Cancun Ocean Day event held in Mexico in the year 2010 supporting the idea of bringing the growing concern of ocean acidification into the United Nations Framework Convention on Climate Change (UNFCCC) policy discussions. She further advised against the rejection of geoengineering as a solution to climate change, but rather, to turn the focus on the identification of biochemical targets and indicators.

Mabudafhasi also speaking at the Cancun Ocean Day held in Mexico concurred with Harrould-Kolieb reiterating the importance of including the oceans in the UNFCCC discussions and added that due to her country's (South Africa) proximity with the Indian Ocean and the Pacific Ocean she has lived to learn that many people's livelihoods depend on the marine environment. In addition, she highlighted that a link between the ocean and climate change needs to be effectively managed to achieve the benefits of food security and carbon sequestration.

The issue of carbon sequestration invited a discussion on carbon storage in mangroves, salt marshes and seagrass by invoking the concept of Reduced Emissions from Deforestation and Forest Degradation (REDD)<sup>305</sup> to carbon

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<sup>304</sup> Dahlhoff 2004 <https://doi.org/10.1146/annurev.physiol.66.032102.114509> (Accessed on 26/11/2019).

<sup>305</sup> REDD is an initiative that rewards a change in attitude in the manner in which the forest resources are used for the purpose of reducing and eliminating carbon dioxide (CO<sub>2</sub>) emissions.

captured by marine species. The basic concept of REDD is that companies, forest owners and governments deserve an incentive for not cutting their forests down to reduce emissions from deforestation and forest degradation. If such incentives can be extended to blue carbon, there is a high possibility that global climate mitigation efforts could change the attitude towards coastal protection.<sup>306</sup>

c) *United Nations Conference on Sustainable Development held in Brazil in the year 2012.*

In 2002 WSSD, one of the targets was for the states to implement MPA. South Africa managed to achieve that target by including MPA under the NEM: PAA. It is commonly known that “one swallow does not make a summer”, hence South Africa is still lacking in other parts that were declared as targets to be achieved before the 2012 conference. The protection of marine pollution from land-based activities is still a challenge in South Africa due to the lack of sufficient awareness of marine pollution by the majority of South African people. However, South Africa is grappling relatively well with this issue by attempting to address it through the NEM: WA. The Act prohibits people from disposing of waste that may cause pollution to the environment, health or wellbeing without authorisation.<sup>307</sup>

This assists in mitigating the amount of waste disposal that may find its way into the sea causing marine pollution. The Act also attaches consequences in a form of offences in terms of Section 67 of the Act. It deems a person to be committing an offence if that person fails to comply with the provisions dealing with consequences of the declaration of promoting waste, the duties in respect of waste management, consequences of listing waste management activities, prohibition of unauthorised disposal together with the consideration of site assessment, reports, recycling and procedural responsibilities imposed by the Act. Section 68 of the Act imposes a penalty of R10 000 000 or to imprisonment not exceeding 10 years or to both

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<sup>306</sup> Cancún World Oceans Day event 2010  
<https://www.yumpu.com/en/document/read/33569348/oceans-day-at-cancun-summary-global-ocean-forum> (Accessed on 28/11/2019).

<sup>307</sup> *NEM:WA* section 26.

imprisonment and fine on perpetrators who committed an offence in terms of section 67.

Though the Act is trying its best to mitigate marine pollution from land-based activities, the course proves to be overwhelming due to its plethora of sources that constitute land-based activities. When shifting our focus to fishing we find that during the 2002 summit, when the targets were made, South Africa already had an Act that regulates fisheries which are called MLRA. Its preamble is concerned with the conservation and long-term sustainable utilisation of marine ecosystem and fosters equitable access to the exploitation of marine living resources amongst the South African citizens.<sup>308</sup> This addresses the majority of concerns that the international community seeks to address such as but not limited to high sea fishing,<sup>309</sup> foreign fishing<sup>310</sup> and judicial matters.<sup>311</sup>

The 2012 United Nations Declaration Conference did not dwell much on the link between the marine environment and climate change, if anything, the conference dealt with these issues as exclusively different without any link thus under the circumstances this study is therefore channelled to focus only on the marine environment. In addressing the issues relating to the sea, the focus was on the identification of a target date for the resilience of oceans and marine ecosystems.

Furthermore, to check the feasibility and possibility of implementing an agreement within the prism of the UNCLOS that will deal with conservation and sustainable use of marine biodiversity beyond national jurisdiction.

This is a concern that the MLRA has managed to address in relation to fishing under Chapter 7. On the outcomes pertaining to the sea few issues were stressed *viz* (a) the recognition of the importance of the UNCLOS and the implementation of obligations on the state under the Convention. (b) commits to take action to reduce marine pollution, (c) the importance of the conservation and sustainable use of the

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<sup>308</sup> *MLRA* the Preamble.

<sup>309</sup> *MLRA* part 7.

<sup>310</sup> *MLRA* part 6.

<sup>311</sup> *MLRA* chapter 7.



oceans, seas and coastal areas, (d) access to fisheries and markets by subsistence, small-scale and artisanal fishers and indigenous peoples. South Africa has made an effort to ensure that the above-mentioned issues are addressed through its national legal framework.

**3.2.2.6. Strengthening international, including regional, cooperation and coordination**

The ocean plays an important role in the lives of human beings through its contribution towards food security, pharmacology, cultural usage, recreational activities and international trade. This vital role is however, threatened by marine stressors such as climate change, acidification, overfishing and marine pollution at large.<sup>312</sup> These threats earned the marine environment topic a spot in the Sustainable Development Goals (SDG) in order to strive for the sustainability of a healthy marine environment and ecosystem.

The table below indicates the SDG 14 targets in 2015.

**Table 3. 1: SDG targets of 2015.**

14.1	By 2025, ensure the prevention and high reduction of all marine pollution.
14.2	By 2020, achieve sustainable management and protection of marine and coastal ecosystems from harmful impacts.
14.3	Reduce ocean acidification effects through enhanced scientific cooperation at all levels.

<sup>312</sup> Food and Agriculture Organisation of the United Nations 2015 <http://www.fao.org/sustainable-development-goals/overview/fao-and-the-post-2015-development-agenda/fisheries-aquaculture-oceans-seas/en> (Accessed on 31/01/2020).

14.4	By 2020, achieve effective regulation in respect of harvest and eradicate overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans that can assist in producing maximum sustainable yield as determined by their biological characteristics
14.5	By 2020, retain at least 10% conservation of coastal and marine areas, consistent with national and international law.
14.6	By 2020, ensure the prohibition of other forms of fisheries subsidies that contribute to overcapacity and overfishing. Opt for the elimination of subsidies that contribute to illegal, unreported and unregulated fishing and cease to introduce new subsidies.
14.7	By 2030, ensure that the economic benefits to small island developing States are increased and that developed countries attain sustainable use of marine resources.

The sustainability of the marine environment cannot be achieved by the efforts of a single state without the cooperation of other states. This is due to the transboundary nature of marine resources which effectively impose a duty of cooperation and coordination amongst the states.<sup>313</sup>

Agenda 21 encourages the strengthening of international, including, regional co-operation and coordination.<sup>314</sup> This is in appreciation of the interconnected nature

<sup>313</sup> Pradhan et al 2017 *Earth's Future* 1177.

<sup>314</sup> Chapter 17 of the *United Nations Conference on Environment and Development* (1992).

of the marine ecosystem. This interconnection translates to varying responsibilities and measures that may be adopted by the states in the management, conservation and sustainability of oceans, coasts and marine resources. The existing varying responsibility is informed by different factors such as spatial extent, scope and mandate of the states.

Thus, different approaches will be explored by the states in the quest of achieving proper management, conservation and sustainability of the ocean, coasts and marine resources. These approaches include but are not limited to the International Conventions and Regional Conventions. These are amongst others, instruments that can be used to strengthen cooperation and coordination amongst the states.

One of the leading Conventions dealing with the sea is the UNCLOS. This Convention, immensely contributes to the strengthening of international cooperation and co-ordinates as evidenced in its preamble. It states the desire to settle, in a spirit of mutual understanding and cooperation, all issues relating to the law of the sea by being alive to the fact that the problems of ocean space are closely interrelated and need to be considered as a whole. This statement is backed by the inclusion of Article 194 of the UNCLOS that specifically deals with the measures that may be adopted by the states to prevent, control and reduce the endemic pollution of the marine environment.

According to Article 94(1), States have an obligation to “take, individually or jointly as appropriate, all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities, and they shall endeavour to harmonize their policies in this connection”.

The Article further requires States to “take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the

areas where they exercise sovereign rights in accordance with this Convention”.<sup>315</sup> Interestingly, Article 94(3) provides States with guidance on the measures that can be taken by indicating a non-exhaustive list of issues that these measures may address. For example, these measures must include those designed to “minimize to the fullest possible extent”:

- (a) the release of toxic, harmful or noxious substances;
- (b) pollution from vessels, in particular measures for preventing accidents and dealing with emergencies, ensuring the safety of operations at sea, preventing intentional and unintentional discharges, and regulating the design, construction, equipment, operation and manning of vessels;
- (c) pollution from installations and devices used in exploration or exploitation of the natural resources of the seabed and subsoil, in particular measures for preventing accidents and dealing with emergencies, ensuring the safety of operations at sea, and regulating the design, construction, equipment, operation and manning of such installations or devices and
- (d) pollution from other installations and devices operating in the marine environment, in particular measures for preventing accidents and dealing with emergencies, ensuring the safety of operations at sea, and regulating the design, construction, equipment, operation and manning of such installations or devices.

Article 94(4) introduced the obligation of non-interference in other’s States’ efforts to also put in place measures designed to secure compliance with their obligations in terms of the Convention. Moreover, Article 94(5) requires that such measures implemented States be necessary “to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life”.

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<sup>315</sup> UNCLOS A 94(2).

Article 195 of the same Convention which states that “in taking measures to prevent, reduce and control pollution of the marine environment, States shall act so as not to transfer, directly or indirectly, damage or hazards from one area to another or transform one type of pollution into another”. This Article advances the course of strengthening international co-operation and coordination by imposing a duty on the states to co-operate with one another and refrain from transferring damages or hazardous substances into the territory of other states. It is the author’s opinion that through this kind of initiative, the fostering of international cooperation will remain alive, relevant and achievable. However, these positive outcomes will be met if proper enforcement for contravention of the Convention is implemented and properly executed.

Regional Conventions also plays a role in the strengthening of cooperation and coordination amongst the states. Unlike the International Conventions that seeks to address global problems as a whole, Regional Conventions are established by member States in the same region or sub-region to use existing regional cooperation structures to co-ordinate amongst themselves. The efforts shown by member states for cooperation and coordination through existing regional frameworks gave birth to different types of Regional Conventions that proved to be effective in the protection, conservation and sustainability of the marine environment.

Those regional frameworks include but are not limited to the Convention for the Protection of the Marine Environment in the North-East Atlantic of 1992,<sup>316</sup> the Convention on the Protection of the Marine Environment in the Baltic Sea Area of 1992,<sup>317</sup> the Convention for the Protection of Marine Environment and the Coastal Region of the Mediterranean of 1995<sup>318</sup> and the Convention for the Protection of the

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<sup>316</sup> The Convention for the Protection of the Marine Environment of the North-East Atlantic (1992).

<sup>317</sup> Convention on the Protection of the Marine Environment of the Baltic Sea Area, (1992).

<sup>318</sup> The Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (1995).

Black Sea of 1992.<sup>319</sup> The initiative of Regional Conventions is supported by Article 197 of the UNCLOS which requires cooperation amongst the states at all levels for the purpose of formulation and elaboration of international procedures, rules, standards and recommendations. This is done to foster alignment with the principles of this Convention pertaining to the protection and preservation of the marine environment.

Though the majority of marine Regional Conventions has contributed positively to the protection, conservation and sustainability of the marine environment, not every attempt to establish a Regional Convention yielded positive results. Some of the initiatives failed because of funding and failure of their respective governments to place protection of the environment at the apex of their priority lists.

### **3.2.2.7. Small Islands Developing States (SIDS)**

The SIDS are a group of developing countries that are confronted with economic, environmental and social vulnerabilities.<sup>320</sup> They are represented by fifty-two countries as indicated by the United Nations Office of the High Representative for the Least Developed Countries and Small Island Developing States.<sup>321</sup> Apart from having a narrow resource base which deprives them from benefiting on the economic scale, they are faced with challenges such as natural hazards which results in the occurrence of social and economic disruption including transportation, famine and communication.<sup>322</sup>

A narrow resource base set up invites more challenges viz high cost for energy, long-distance from export markets and import resources due to their location.

Sustainable Development of the SIDS must be fostered not only for the benefit of the SIDS but also for the benefit of the whole world. The benefit to the whole world stems from the fact that SIDS plays an important role in the maintenance of the

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<sup>319</sup> The Convention on the Protection of the Black Sea against Pollution (1992).

<sup>320</sup> F. Ghina 2003 *Environment, Development and Sustainability* 140.

<sup>321</sup> Small Island Developing States date unknown <http://unohrlls.org/custom-content/uploads/2013/08/SIDS-Small-Islands-Bigger-Stakes.pdf> (Accessed on 28/11/2019).

<sup>322</sup> Sjostedt and Povitkina 2017 *Journal of Environment & Development* 84.

water cycle and nutrients cycle.<sup>323</sup> This role affirms the need for the sustainability of the SIDS. A positive step that can usher the goal of these states' sustainability is to curb all activities that render the SIDS vulnerable and promote possible sharing of resources between the states through negotiation. In the case of *Obligation to Negotiate Access to the Pacific Ocean (Bolivia v. Chile)*, Judgment, I.C.J. Reports 2018,<sup>324</sup> Bolivia instituted an application of proceedings against Chile concerning a dispute about "Chile's obligation to negotiate in good faith and effectively with Bolivia to reach an agreement granting Bolivia a fully sovereign access to the Pacific Ocean".<sup>325</sup>

In establishing the jurisdiction of the Court, the Applicant relied on Article XXXI of the Pact of Bogotá of 30 April 1948, to which both States are parties. Chile referred to Article 79, paragraph 1, of the Rules and objected preliminarily on the issue of the Court's jurisdiction in this case. Considering Article 79 paragraph 5, the proceedings on the merits were then suspended. At a later stage, the preliminary objection raised by Chile was rejected and stated that the Court has jurisdiction based on Article XXXI of the Pact of Bogotá, to entertain an Application filed by Bolivia.<sup>326</sup>

The court submitted that Chile was not legally obliged to enter into negotiations with Bolivia on the issue pertaining to Bolivia's sovereign access to the Pacific Ocean. Therefore, the bilateral instruments advanced by Bolivia do not establish any obligation on Chile to enter into negotiations with Bolivia.<sup>327</sup> Thus, negotiations in respect of Bolivia's sovereign access do not have any bearing on Chile's unilateral acts. Allegations levelled against Chile indicating that it entered into some agreement cannot serve as a legal basis to ensure that negotiations between Chile

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<sup>323</sup> UNEP 2014. Emerging issues for Small Island Developing States. Results of the UNEP/UN DESA Foresight Process. United Nations Environment Programme (UNEP), Nairobi, Kenya.

<sup>324</sup> *Obligation to Negotiate Access to the Pacific Ocean (Bolivia v. Chile)* 2018 Judgment, I.C.J. Reports.

<sup>325</sup> (*Bolivia v Chile case*) paragraph 1.

<sup>326</sup> (*Bolivia v Chile case*) paragraph 6.

<sup>327</sup> (*Bolivia v. Chile case*) para 175.

and Bolivia take place.<sup>328</sup> Estoppel cannot offer a legal basis for Chile's obligation to negotiate Bolivia's sovereign access to the sea.<sup>329</sup>

Generally, there is no principle under international law that permits an obligation to be made based on legitimate expectation hence Bolivia's argument cannot be sustained because it relies on legitimate expectation.<sup>330</sup> The court held further that the United Nations Charter (UNC) and the Organisation of American State Charter (OASC) cannot be used as legal tools to impose an obligation on the parties to enter into negotiations.<sup>331</sup> It is apparent from the entire legal basis advanced that an obligation for the parties to negotiate Bolivia's sovereign access to the sea failed to be established. Thus, Chile had no obligation to enter into negotiations with Bolivia in respect of sovereign access to the sea.

It is submitted that this judgement diverges from the UNCED principles that encourage the support of Small Island Developing States and the Landlocked States. Although the Court may have been restricted by the concept of judicial overreach or refraining from acting ultra-vires, it should have passed the above Judgement in light of the principles of UNCED. These principles are invoked because the concerned state is within the territory of SIDS. These states face the limitation of economic benefits due to their location. The court should have recommended that Chile enters into negotiations with Bolivia, maybe not because of the reasons advanced by Bolivia but by virtue of the promotion of the principles of UNCED.

Since the Courts are not keen to promote negotiations between and the affected states, it is imperative to curb activities such as overfishing that adversely impacts the inshore marine ecosystem. This is because SIDS heavily rely on the inshore marine ecosystem for their food security and overfishing will threaten their livelihoods. Although an effort to regulate the fishing industry has been explored by many countries through different legal frameworks, little has been done to deal with

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<sup>328</sup> (*Bolivia v Chile*) para 13,14 and 15.

<sup>329</sup> (*Bolivia v Chile*) para 153-159.

<sup>330</sup> (*Bolivia v. Chile*) para 160-162.

<sup>331</sup> (*Bolivia v. Chile*) para 163-167.



the impact of overfishing on the inshore marine ecosystem.<sup>332</sup> A promising suggestion that offers a glimmer of hope on the sustainability of the inshore marine ecosystem is the harmonisation of fishing regulations and legal frameworks to counter unsustainable fishing practices practised by industrialised states to the developing states.<sup>333</sup>

### 3.3. REGIONAL MARINE GOVERNANCE

#### 3.3.1. Marine Management in Africa

Africa has an abundance of natural resources. However, those resources barely benefit African people due to lack of funds, productivity and infrastructure thus adversely affecting the wellbeing of the African economy. The continent is dominated by developing countries, the majority of which are confronted with socio-economic problems, environmental problems any many other issues. Of late, the blue economy<sup>334</sup> has been an emerging topic that warrants special attention by African countries. The Blue Economy can boost the Continent's economic stature and improve the livelihoods of its people through its role in structural transformation, social development and sustainable economic progress.

The improvement of the people's livelihood is informed by the different activities that the ocean can offer *viz* tourism attraction, fisheries coast mining, aquaculture, energy, ports and transport.<sup>335</sup> All these activities come with the potential of job creation.

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<sup>332</sup> UNEP 2014 Emerging issues for Small Island Developing States. Results of the UNEP/UN DESA Foresight Process. United Nations Environment Programme (UNEP), Nairobi, Kenya.

<sup>333</sup> UNEP 2014. Emerging issues for Small Island Developing States. Results of the UNEP/UN DESA Foresight Process. United Nations Environment Programme (UNEP), Nairobi, Kenya.

<sup>334</sup> The World Bank provides that "blue economy is the sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem".

<sup>335</sup> Institute of Marine Sciences 2018 <https://wedocs.unep.org/handle/20.500.11822/25703> (Accessed 27/11/2019).

The impediment towards benefitting from the blue economy is the issue of ocean governance challenges including the lack of common political and economic agenda on ocean exploitation, maritime security approach and infrastructure.<sup>336</sup> In South Africa, through the Operation Phakisa initiative, six focus areas were identified for the purposing enhancing South Africa’s contribution to the Blue economy.<sup>337</sup> Those focused areas include marine protection services and ocean governance, offshore oil and gas exploration, small harbours, marine transport and manufacturing and coastal and tourism and Aquaculture.<sup>338</sup>

Although some of Operation Phakisa’s focal points lost value in the main stock markets across the world, marine protection services and ocean governance were not adversely affected. On the whole, Africa is demonstrating a commitment to the course on the marine environment through the implementation of different initiatives championed by different African countries in the quest of achieving the common goal of protecting, conserving, preserving and sustaining the marine environment. Those initiatives include but are not limited to the African Union’s 2050 Africa’s Integrated Maritime (2050 AIM strategy) and African Convention on the Conservation of Nature and Natural Resources.

### **3.3.1.1. The 2050 Africa’s Integrated Maritime Strategy**

The 2050 Africa’s Integrated Maritime Strategy was adopted in 2014 by the African Union with respect and honour specifically the loss of lives that occurred at the sea for various reasons such as the search for a better life, consequences of colonialism, the slave trade and fight for Africa’s independence and self-determination.<sup>339</sup> Furthermore, to have in place an integrated and multi-dimensional approach to proper ocean governance, sustainability and security. In Africa, international trade plays an important role in the revenues of the African economy

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<sup>336</sup> Akpomera 2020 *Review of African Political Economy* 655-658.

<sup>337</sup> Operation Phakisa Ocean Economy <https://www.environment.gov.za/projectsprogrammes/operationphakisa/oceansecconomy> (Accessed 31/01/2020).

<sup>338</sup> Operation Phakisa Ocean Economy <https://www.environment.gov.za/projectsprogrammes/operationphakisa/oceansecconomy> (Accessed 31/01/2020).

<sup>339</sup> 2050 Africa’s Integrated Maritime Strategy 6.

through imports and exports that are conducted at the sea. As a result of an existing interlink amongst the world' oceans, any action conducted in one sea can have an impact on the other sea.

All the states need to take an initiative to embark on a common goal of protecting, conserving and promoting the sustainability of the marine environment. Notably, the Strategy has influenced the initiation of several other multidimensional approaches leaning maritime security instruments, for example, the Intergovernmental Authority on Development's (IGAD) Integrated Maritime Strategy 2016.<sup>340</sup>

Another notable example is the 2009 Code of Conduct concerning the Repression of Piracy and Armed Robbery against Ships in the Western Indian Ocean and the Gulf of Aden<sup>341</sup> (the Djibouti Code of Conduct), under the auspices of the International Maritime Organisation (IMO), which was amended in 2017<sup>342</sup> to aligning with the 2050 Strategy. The Code, adopted by certain African and Arab states, is aimed at the repression of piracy and armed robbery against ships. Also, several of the aspects of the 2050 AIM Strategy were incorporated in a legally binding treaty known as the Lomé Charter,<sup>343</sup> which was adopted by the AU in 2016.

It is submitted the African Union took a positive initiative by setting goals to build by the year 2050, in the quest of achieving the global common goal of promoting marine environment conservation, protection and sustainability the goals call for:

A comprehensive understanding of existing and potential challenges, including allocation of resources to identified priorities over a pre-determined time-frame, a comprehensive, concerted, coherent and coordinated approach that improves

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<sup>340</sup> IGAD 2016 <https://igad.int/documents/6-igad-rs-implementationplan-final-v6/file> (Accessed 21/04/2021).

<sup>341</sup> Djibouti Code of Conduct is an agreement entered into by different countries that intend to co-operate with each other in order to suppress piracy and armed robbery against ships.

<sup>342</sup> Djibouti Code of Conduct 2017 <https://www.imo.org/en/OurWork/Security/Pages/DCoC.aspx> (Accessed 21/04/2021).

<sup>343</sup> African Charter on Maritime Security and Safety and Development in Africa (2016).

maritime conditions with respect to environmental and socio-economic development as well as the capacity to generate wealth from sustainable governance of Africa's seas and oceans and a common template for the African Union and relevant Organizations; and Member States, to guide maritime review, budgetary planning and effective allocation of resources in order to enhance maritime viability for an integrated and prosperous Africa.<sup>344</sup>

These goals are informed by the existing reality faced by the African marine environment such as illegal actions occurring at the sea namely, piracy and armed robbery, human trafficking, and smuggling of arms and drug traffic.<sup>345</sup> All these criminal activities beg a question to the existing maritime safety measures. On the other hand, climate change and energy exploitation do not make the embarked journey less difficult, they contribute to the vastly available stressors of the marine environment.

Overall, these activities challenge Africa to revisit how they manage their seas and oceans and adopt an approach that can mitigate the existing ocean concerns and where possible eradicate the same. This is a challenge that Africa has bravely accepted and responded to by developing the 2050 Africa's Integrated Maritime Strategy (2050 AIM Strategy) with the vision of fostering the creation of increased wealth from African oceans and the development of a sustainable flourishing Blue economy in an environment that is secure and sustainable.<sup>346</sup>

In appreciation of the role of citizens towards the possibility of mitigating marine environmental challenges and promoting its sustainability, the AIM strategy incorporated an issue of public awareness through the "no more sea blindness" campaign. This campaign is geared towards sensitising the public on the importance of the seas and oceans by incorporating the significance of this field into

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<sup>344</sup> Goals 2050 Africa's Integrated Maritime Strategy 11.

<sup>345</sup> Randrianantenaina *Maritime Piracy and Armed Robbery against ships: Exploring the Legal and the Operational Solutions* 3-4.

<sup>346</sup> Mission 2050 Africa's Integrated Maritime Strategy 11.

their education system at all levels as part of territorial geography.<sup>347</sup> It submitted that this is a positive step that the majority of scholars advocating for the protection of the marine environment will wish to witness and be part of it.

### **3.3.1.2 African Convention on the Conservation of Nature and Natural Resources**

The Preamble of the African Convention on the Conservation of Nature and Natural Resources 1968 (ACCNNR) makes an important statement that is unapologetic about advancing the interest of Africa as a whole in as far conservation of the African natural resources is concerned. It indicates its consciousness about the natural environment of Africa and its natural resources as an irreplaceable part of the African heritage. Furthermore, the accelerated growing importance of natural resources' contribution towards economic, social, cultural and environmental stability need to be used as a motivation for the conservation of the African environment.<sup>348</sup>

The objectives of this convention are “to enhance environmental protection; foster the conservation and sustainable use of natural resources; and to harmonize and coordinate policies in these fields to achieve ecologically rational, economically sound and socially acceptable development policies and programmes”.<sup>349</sup> In order to be able to realise these objectives, the Convention opted to adopt a broader approach in the conservation of the natural resources in terms of Article IX. It stated that “... the Parties shall establish and implement policies for the conservation and sustainable use of resources with special attention given to species that play social, economic and ecological role and which are threatened.

They shall foster the conservation of species with sustainable development as a fundamental principle to ensure conservation”. The Convention has made it

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<sup>347</sup> Outreach Initiative 2050 Africa's Integrated Maritime Strategy 11.

<sup>348</sup> Preamble of the African Convention on the Conservation of Nature and Natural Resources (1968).

<sup>349</sup> ACCNNR A II.

peremptory for the states to ensure sustainable development of the natural resources by stating that the parties must prioritise conservation and management of natural resources in their development plans executed at all spheres of government. Furthermore, culture, ecology and social dynamics should be considered when implementing those development plans to promote sustainable development.<sup>350</sup> This peremptory requirement is in line with many global Conventions on the issue of sustainable development.

Article XVII of this Convention<sup>351</sup> is laudable for its appreciation of the long-standing wisdom of the indigenous people by providing the following:

(1) the Parties shall take legislative and other measures to ensure that traditional rights and intellectual property rights of local communities including farmers' rights are respected in accordance with the provisions of this Convention;

(2) the Parties shall require that access to indigenous knowledge and its use be subject to the prior informed consent of the concerned communities and to specific regulations recognizing their rights to, and appropriate economic value of, such knowledge and

(3) The Parties shall take the measures necessary to enable active participation by the local communities in the process of planning and management of natural resources upon which

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<sup>350</sup> ACCNNR A XIV.

<sup>351</sup> ACCNNR provides that "... The Parties shall take legislative and other measures to ensure that traditional rights and intellectual property rights of local communities including farmers' rights are respected in accordance with the provisions of this Convention. Such Parties shall require that access to indigenous knowledge and its use be subject to the prior informed consent of the concerned communities and to specific regulations recognizing their rights to, and appropriate economic value of, such knowledge. The Parties shall take the measures necessary to enable active participation by the local communities in the process of planning and management of natural resources upon which such communities depend with a view to creating local incentives for the conservation and sustainable use of such resources".

such communities depend to create local incentives for the conservation and sustainable use of such resources.

Despite living in a world that is dominated by science and technology, the Convention made a concerted effort to protect Indigenous Knowledge Systems pertaining to the conservation of natural resources. Indigenous people know how to protect, preserve and conserve their natural resources through Indigenous Knowledge Systems.

This indigenous knowledge is passed from generation to generation to ensure sustainability. The indigenous people's long-standing practice of promoting sustainability in as far as conservation, preservation and protection of natural resources is concerned, underscores an African adage "*bagolo rutang bana ditaola le se ye le tsona badimong*". Loosely translated to mean "elders should teach children the practices and rituals while they are still alive, before their bones are interred and joining the realm of ancestors". This saying simply emphasises and encourages sustainability in the African context.

The Convention's approach on the promotion of the interest of indigenous people in so far as conservation of natural resources is concerned is supported by a judgement passed in the Supreme Court of Appeal in South Africa in the case of *Gongqose & others v Minister of Agriculture, Forestry & Fisheries and others; Gongqose & others v State & others (1340/16 & 287/17) [2018] ZASCA 87 (01 June 2018)*. This case is an appeal case based on a judgement that was handed over at Elliotdale magistrate court and upheld in the High Court. The appellants were charged and convicted on different counts *to wit*, (a) fishing in a marine protected area without a permit, (b) entering wildlife reserved area without permission and (c) entering wildlife reserved area while carrying weapons in contravention with the MLRA.<sup>352</sup>

The Supreme court of Appeal (SCA) held that the MLRA's prevention of indigenous people to fish in a marine protected area does not supersede their existing rights to

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<sup>352</sup> (*Gongqose case*) para 14.

access the area to exercise their customary rights.<sup>353</sup> The SCA further held that the right to practice culture and the right to preserve the environment can co-exist and be harmonised.<sup>354</sup> Irrespective of the fact that there is a dire need to protect and preserve the environment for future generations, in this case, opting to preserve the environment at the expense of the cultural rights of the appellants would be unfair and unjust.

This stems from the existence of the appellants' long-standing connection with the utilisation of marine resources in marine protected areas that existed since time immemorial.<sup>355</sup> The marine resources are interlinked and intertwined with the appellants' customs, traditions and practices that were passed to them by their forefathers long before the establishment of marine protected areas through the generational passage.<sup>356</sup> It is against this backdrop that the court found the appellant's conduct to be lawful because they were exercising their customary rights and that customary right cannot be extinguished by legislation that does not specifically deal with customary law.<sup>357</sup>

### 3.3.2. Marine Management in Europe

History has proved that Europe has always taken interest in the protection of the environment. It has multiple environmental protection initiatives such as but not limited to the Hague Declaration on the environment,<sup>358</sup> the Helsinki Convention,<sup>359</sup> the OSPAR Convention<sup>360</sup> and the Bergen Declaration.<sup>361</sup> Its keen interest in the protection of the environment, particularly the Seas and Oceans attracted the European Union to also play an important role by establishing regional marine

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<sup>353</sup> (*Gongqose case*) para 28.

<sup>354</sup> (*Gongqose case*) para 56.

<sup>355</sup> (*Gongqose case*) para 56.

<sup>356</sup> (*Gongqose case*) para 56.

<sup>357</sup> (*Gongqose case*) para 64.

<sup>358</sup> Hague Declaration on environment (1989).

<sup>359</sup> Convention on the Protection and Use of Transboundary Watercourses and International Lakes Helsinki (1992).

<sup>360</sup> The Convention for the Protection of the Marine Environment of the North-East Atlantic (1992).

<sup>361</sup> Bergen Declaration Fifth International Conference on the Protection of the North Sea (2002).



environment agreements viz the Convention of Marine Environment and Coastal Region of the Mediterranean Sea, the Convention on the Protection of the Black Sea against Pollution, the Convention for the Protection of Marine Environment of the North-East Atlantic and the Marine Strategy Framework Directives.

With the existence of this plethora of legal frameworks promulgated to ensure and foster the protection of the marine environment, the threats facing the marine environment always find a way to repel against the intention of these legal frameworks. Hence, the marine environment is still a burning issue in Europe.

The Mediterranean countries and the European Community adopted the Mediterranean Action Plan (MAP) under the Convention on Marine Environment and Coastal Region of the Mediterranean Sea in 1975.<sup>362</sup> The emergence of Sustainable Development ushered the Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas.<sup>363</sup> The latter plan's objectives were progressive because amongst others they intended to ensure that natural marine and land use policies are managed sustainably, there is the integration of environment in social and economic development and also to ensure the protection of the marine environment and coastal zones through prevention, mitigation and where possible eradication of all marine pollution.<sup>364</sup>

These objectives strengthened the Convention and attracted many countries to become Party states, the contracting Parties to the Barcelona Convention are 22 as indicated by the United Nations Environment Programme which was last updated on 24 April 2019.<sup>365</sup> Amongst Parties States to this Convention, include states outside Europe such as Libya, Algeria, Egypt and Tunisia. This manifests the promotion of cooperation, coordination and coherence in marine governance practice.

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<sup>362</sup> The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (1995).

<sup>363</sup> Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean (1995).

<sup>364</sup> Objectives of the Action Plan for The Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean.

<sup>365</sup> United Nations Environment Programme <http://web.unep.org/unepmap/who-we-are/legal-framework/status-signatures-and-ratifications> (Accessed on 02/12/2019).

The promotion of cooperation amongst the states is transparent in the OSPAR Convention that aims a proper execution of the prevention and elimination of pollution and the protection of maritime areas against adverse effects of human activities. For these aims to be achieved the Convention calls on the State Parties to take measures individually and collectively to adopt initiatives that can harmonize their policies and strategies.<sup>366</sup> The Convention on the Protection of the Black Sea against Pollution also emphasises an act of cooperation, coordination and coherence in terms of Article V of the Convention. It compels Contracting Parties to apply the Convention in all areas where the Convention has sovereignty, however, such application must not fall foul of the rules of international law. Furthermore, Contracting Parties are urged to understand the consequences of pollution and employ measures, be it individually or as a collective, that can assist in preventing, controlling, reducing pollution and protecting the marine environment.

Furthermore, on the co-operation issue, Article IX provides that “[t]he Contracting Parties shall cooperate to prevent, reduce and combat pollution of the marine environment of the Black Sea resulting from emergencies in accordance with the Protocol on Cooperation in Combatting Pollution of the Black Sea by Oil and Other Harmful Substances in Emergency Situations which shall form an integral part of this Convention”.<sup>367</sup> The fostering of co-operation, coordination and coherence in marine governance practice informed how the Marine Strategy Framework Directives is structured. This framework is enacted to effectively regulate marine issues across Europe hence it refrained from providing hard and fast rules on the Members State pertaining to what constitutes Good Environmental Status (GES).

The directive allows each member state to define its GES. Due to the transboundary nature of marine resources and challenges, the Member States sharing the same regions are always encouraged to co-operate and coordinate their activities through

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<sup>366</sup> Objectives of The Convention for the Protection of the Marine Environment of the North-East Atlantic (1992).

<sup>367</sup> The Convention on the Protection of the Black Sea against Pollution (1992).

the existing regional structures.<sup>368</sup> On the whole, the European initiatives on the protection, conservation and sustainability of the marine environment are crafted in a manner that breeds synergy amongst the existing legal framework promulgated to achieve the same agenda.

### 3.3.3. Marine Management in Asia

The sea provides many kinds of resources such as food, transportation, employment, recreational activities and pharmacological products to human beings.<sup>369</sup> Thus, pollution of the sea and unsustainable use of marine resources can serve as an impediment to the benefits that are accorded to human beings. Hence, it is imperative to ensure a clean and sustainable condition of the sea and its resources. In Asia, the majority of people rely on marine resources for survival.

This accelerates marine resource demand that leads to the degradation of the marine environment due to over-reliance on its resources.<sup>370</sup> Thus, marine governance becomes imperative. Despite the existence of international Conventions such as the United Nations Convention on the Law of the Sea with its Part XII<sup>371</sup> addressing the protection of and preservation of the marine environment, Asia crafted environmental initiatives at a regional level dealing with the protection, preservation, conservation and sustainability of the marine environment.

Those regional initiatives include but are not limited to the Partnership in Environmental Management for the Seas of East Asia (PEMSEA),<sup>372</sup> Putrajaya Declaration of Regional Cooperation for the Sustainable Development of the Seas

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<sup>368</sup> Marine Strategy Framework Directive 2008  
[https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index\\_en.htm](https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm) (02/12/2019).

<sup>369</sup> Arif and Karim 2013 *Macquarie Journal of International and Comparative Environmental Law* 1.

<sup>370</sup> Arif and Karim 2013 *Macquarie Journal of International and Comparative Environmental Law* 1.

<sup>371</sup> Article 192 of the United Nations Convention on the Law of the Sea (1982) obliges the States to ensure the protection and preservation of marine environment.

<sup>372</sup> Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) is an “intergovernmental organization that operates in East Asia to promote and sustain healthy and resilient oceans, coasts, communities and economies across the region”.

of East Asia<sup>373</sup> and the Coordinating Body on the Sustainable Development of the Seas of East Asia (COBSEA).<sup>374</sup> Although not all of these regional instruments are binding, they have a common goal of ensuring the well-being of the sea and its resources.

The PEMSEA comprises the integration of state and non-state parties to eliminate threats to the environment and ensure sustainable development of the sea in East Asia. The combination of both state and non-state parties in the quest of protecting the marine environment proves that in Asia marine issues is a concern affecting everybody and all play a role in defeating it. In order to enhance ocean governance, Asia also relies on initiatives that are not binding such as the Putrajaya Declaration of Regional Cooperation for the Sustainable Development of the Seas of East Asia. This is an informational document in the region, that assists in providing a shared vision for the implementation of sustainable development of the marine environment.

This declaration received an enormous response with 13 (Thirteen) states in Asia signing *viz* Brunei Darussalam, Cambodia, China, the Democratic People's Republic of Korea, Indonesia, Japan, Malaysia, the Philippines, the Republic of Korea, Singapore, Thailand, and Vietnam.<sup>375</sup> The response by these states affirms the region's keen interest in achieving the goal of protecting, conserving, preserving and fostering the sustainability of the marine environment. The role expected to be played by the Declaration has the capability of enticing any state that is concerned with the protection, conservation, preservation and sustainability of the marine environment.

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<sup>373</sup> Putrajaya Declaration conveys a regional policy commitment to sustainable development of the seas of East Asia and to forge stakeholder partnership arrangements in addressing areas of concern.

<sup>374</sup> Coordinating Body on the Sustainable Development of the Seas of East Asia is "a regional intergovernmental body operating at a regional level with aim of ensuring that countries within its region *to wit* Cambodia, People's Republic of China, Indonesia, Republic of Korea, Malaysia, the Philippines, Thailand, Singapore and Viet Nam are brought together for the purpose of development and protection of the marine environment and coastal areas of East Asian Seas".

<sup>375</sup> These are Partnerships in Environmental Management for the Seas of East Asia member States who signed the Putrajaya Declaration.

The Declaration is tasked with a duty to set applicable principles that are not contrary to the existing regional and international action programme, instruments, implementation approaches and agreements to achieve sustainable development of the Seas of East Asia. This effectively means that the scope of achieving sustainable development of the Seas of East Asia will increase. The logical explanation towards the increment of sustainable development scope stems from a responsibility carried by the Declaration to develop new ideas that do not contradict the existing ideas pertaining to the sustainable development of the marine environment in the region.

This can be achieved through the cooperation and coordination of environmental initiatives adopted in Asia such as the Coordinating Body on the Sustainable Development of the Seas of East Asia (COBSEA) which serves as the intergovernmental mechanism that oversees the implementation of the action plan.<sup>376</sup> Although it is a non-binding Convention it holds a mandate to coordinate conservation and management activities of the marine environment. The Convention covered the following SDG 14 targets:

- Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels;
- conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information;
- prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.<sup>377</sup>

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<sup>376</sup> Coordinating Body on the Seas of East Asia  
<https://oceanconference.un.org/commitments/?id=15986> (Accessed on 03/12/2019).

<sup>377</sup> Coordinating Body on the Seas of East Asia  
<https://oceanconference.un.org/commitments/?id=15986> accessed on (03/12/2019).

Much as this Convention is not binding, it managed to carry its mandate and made a positive contribution. This is supported by the SDG 14 targets that the Convention managed to cover. All the covered targets are important to the protection, preservation, conservation and sustainable development of the marine environment. The initiative taken by Asia to believe in the cooperation and coordination of its states by giving a non-binding Convention a platform to carry the most sensitive and delicate issue of marine management which is at the apex of the world's concern did not go into vain.

### **3.3.4. Marine Management in Latin America**

Latin America adopted different environmental initiatives to protect, preserve, conserve and ensure the sustainability of the marine environment and its resources. The main marine threats calling for environmental initiatives to be adopted include the increasing levels of marine debris, population growth including urbanization and tourism, climate change leading to acidification and poor marine governance including weak regulation and enforcement and poor fisheries and aquaculture management.<sup>378</sup>

The environmental protection initiatives include the Operative Network for Regional Co-operation among Maritime Authorities, the Regional Marine Pollution Emergency, Information and Training Centre and the Latin American Organization for Development of Fisheries to name a few. All these initiatives are geared towards the preservation, conservation, protection and sustainability of the marine environment. Hence, the Operative Network for Regional Co-operation among Maritime Authorities is committed to interacting at different levels of co-operation to analyze maritime activities that need to be addressed and support maritime achievements that have been addressed to ensure proper maritime management in the region.<sup>379</sup>

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<sup>378</sup> Diez et al  
<http://documents.worldbank.org/curated/en/482391554225185720/pdf/Marine-Pollution-in-the-Caribbean-Not-a-Minute-to-Waste.pdf> (Accessed on 04/12/2019).

<sup>379</sup> Pamborides *International Shipping Law: Legislation and Enforcement* 71.

The Network also includes guidelines that the members must adhere to coordinate proceedings pertaining to maritime authority issues relating to safety, security, legal and environmental protection. On the part of sustainability, the Regional Marine Pollution Emergency, Information and Training Centre<sup>380</sup> contributes to the fostering of sustainability of the marine environment by assisting the states to implement international Conventions promulgated for the reduction of marine pollution.

This initiative plays an important role by assisting states in the region to protect the marine environment from pollution and respond to the problem of marine pollution. It does so by doing the following activities viz conducting workshops and training, providing public awareness about marine environment concerns, developing a national and multilateral contingency plan, providing information on marine problems and assessing national and multilateral contingency plans. These activities have the potential of making a positive contribution to the goal of protecting, preserving, conserving the marine environment and ensuring its sustainability.

In ensuring the sustainability of marine living resources such as fishes, which are threatened by overfishing, the region adopted the Latin American Organization for Development of Fisheries.<sup>381</sup> This organisation is aimed at achieving many tasks. Of importance to this study, it aims to achieve the growth of marine resources production and trade, promote fair and equitable exploitation of fisheries in the region and encourages joint action coordination and co-operation with the Member States.<sup>382</sup> Cooperation is mainly focused on many activities including research about the exploitation of fishery resources, aquaculture and assessment of species

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<sup>380</sup> Regional Marine Pollution Emergency, Information and Training Centre concerns itself with the promotion and facilitation amongst the States in order to promote international cooperation and regional assistance to ensure effective response to incidents of marine pollution including but not limited to hazardous substances and oil and promote sustainability of marine environment in the Wider Caribbean.

<sup>381</sup> Agreement instituting the Latin American Organization for Fisheries Development (1982).

<sup>382</sup> Aims of the Latin American Organization for Fisheries Development (1982).

in the regional lakes, development of fishery projects in Latin America and the development of continental fishing.<sup>383</sup>

The regional environmental initiatives of Latin America are crafted in a manner that demonstrates commitment to protecting, preserving, conserving and ensuring the sustainability of the marine environment. The activities that are offered by these initiatives are progressive and very practical.

### 3.5. CONCLUSION

The international community has demonstrated commitment to the protection, conservation, preservation and sustainability of the marine environment through marine governance. This commitment is deduced from the efforts to adopt legal frameworks that deal with marine environmental issues. Those legal frameworks are found on the international level, regional, national and municipal level. In this chapter, the focus was on the international and regional levels. On the international level, the chapter dealt with the United Nations Convention on the Law of Seas.

Chapter 17 of Agenda 21 of the 1992 United Nations Conference on Environment and Development and other international conferences. On the regional level, it dealt with the 2050 Africa's Integrated Maritime Strategy, the Convention of Marine Environment and Coastal Region of the Mediterranean Sea, Putrajaya Declaration of Regional Cooperation for the Sustainable Development of the Seas of East Asia and others.

The international and regional efforts contribute immensely to the quest of ensuring effective and efficient regulation of the marine environment. They both call for the cooperation and coordination of states through marine environment initiatives. Much as other states are co-operating and coordinating with each other, this trend is not across the board. This is deduced from the case of *Obligation to Negotiate Access to the Pacific Ocean (Bolivia v. Chile)*,<sup>384</sup> where Chile refused to enter into

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<sup>383</sup> Activities of the Latin American Organization for Fisheries Development of (1982).  
<sup>384</sup> (*Bolivia v Chile case*) paragraph 1.



negotiations with Bolivia pertaining to access to the Pacific Ocean. This is largely because, Chile, as a state enjoying the economic benefits of the Pacific Ocean, is protecting its marine economic interest thus construe the opening of negotiation as a threat to its marine economic benefits. Undoubtedly, Chile's conduct undermines the UNCED's principle of encouraging states, particularly developed states, to support the Small Island Developing States and Land locked states to also benefit from marine resources.

This is a call that the developed states are always reluctant to act positively on it. If anything, the developed states are quick to exploit the inshore marine resources that serve as the only source of marine benefits that the Small Island Developing States and the Landlocked States can access. The Small Island Developing States and the Landlocked States rely heavily on inshore marine resources, a space that little has been done to protect it from exploitation by developed states.

The United Nations Convention on the Law of Sea is applauded for the creation of the EEZ of the states. The EEZ plays an important role in maintaining the well-being of the oceans and seas by way of granting states the freedom to exploit and benefit from the natural resources within their EEZ. This freedom is however, accompanied by an obligation on the state to ensure the protection of the EEZ from activities such as contamination of the EEZ from hazardous and harmful contagious substances, curb overfishing and ensure the sustainable use and conservation of marine resources.

Although disputes do arise pertaining to the EEZ between the states, the UNCLOS provides quick direction concerning this kind of issue. The Member states also participate in ensuring that justice is served. A prime example arises from an incident where China was involved in a dispute relating to the EEZ against Taiwan, Brunei, Malaysia, the Philippines, and Vietnam. The matter reached the Court and it was ruled against China, which opted not to heed the Court's judgement. The member states supported other states with resources to fight China's act of greed and defiance to the Court's judgement.

Furthermore, the judiciary when confronted with a matter involving two states quarrelling about the EEZ, the court is always eager to strike balance in the interest

of both parties not make one suffer. This was shown in the case of *Dispute Concerning Delimitation of the Maritime Boundary between Ghana v. Côte d'Ivoire*. These kinds of deeds by the Member states and the judiciary are a step in the right direction towards proper ocean governance.

On the issue of ensuring protection and preservation of the marine environment as implored by Article 192 of the UNCLOS, the majority of states heeded the call and promulgated initiatives that are geared towards the protection and preservation of the marine environment through regional and national initiatives. Although the national initiatives were not discussed in this chapter, they, together with the regional initiatives have contributed immensely to the protection and preservation of the marine environment in conformity to the international call of protecting the marine environment.

Of late, Sustainable Development is the “in” topic in different fields and the marine field is not immune. Fortunately, the UNCED has always encouraged sustainable development in the field of marine. This stems from the existence of the principles of sustainable use of marine natural resources in the high seas and the national jurisdiction. These two initiatives play an important role in the sustainability of marine natural resources for the current and future generations. Another important phenomenon that warrants recognition is the promotion of the Indigenous Knowledge System (IKS) that has long been used by the indigenous people to promote the sustainability of natural resources including marine resources long before the modern scientific approaches were invented.

A regional convention named the African Convention on the Conservation of Nature and Natural Resources underscored the importance of IKS by promoting it terms of Article XVII and it would be beneficial to the marine environment if other regions also follow the suit of incorporating the IKS in their legal initiatives to turn sustainability of marine natural resource into a sustainable reality. This can be achieved through possible harmonisation of these two systems viz the Indigenous Knowledge System and the Scientific Approach.

**CHAPTER 4:**

**THE INTERVENTION OF INTERGOVERNMENTAL AND NON-  
GOVERNMENTAL BODIES ON THE PREVENTION AND PROTECTION OF  
MARINE POLLUTION**

#### **4.1. INTRODUCTION**

This chapter will deal with some of the intergovernmental bodies' efforts on the protection of marine pollution and marine environment. Those intergovernmental bodies include but are not limited to the Intergovernmental Oceanographic Commission (IOC), United Nations Environment Programme (UNEP), Incident Management Organisation (IMOrg), Northwest Pacific Region (NOWPA) Food and Agricultural Organization of the United Nations (FAO) and Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP).

In the discussion, non-governmental bodies will also be considered as the supporting bodies that assist in the quest of achieving marine environment protection. Such non-governmental bodies include but are not limited to the Sea Shepherd, World Wildlife Fund (WWF), Global Ocean Observing System (GOOS), Global Tsunami Warning System (GTWS), Sustainable Seas Trust (SST), Earth Watch Institute, Beach Clean-up and Trash Bash.

##### **4.1.1. Intergovernmental Oceanographic Commission (IOC)**

This commission focuses on the development of ocean science and fostering of international collaboration in respect of issues relating to ocean sciences and technology.<sup>385</sup> It also encourages international state cooperation to manage coastal areas in a manner that promotes sustainability.<sup>386</sup> In order to have coastal areas that

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<sup>385</sup> Harden-Davies 2016 *Marine Policy* 261.

<sup>386</sup> Ehlers 2000 *15 Int'l J. Marine & Coastal L.* 535.

are better managed and sustainable, the commission is tasked with the duty to ensure capacity building in this field.<sup>387</sup>

This is because the body wants to encourage people to learn more about the ocean and understand it. It is through better knowledge and understanding of the ocean that its sustainability can be realized. Furthermore, the protection of the marine environment from possible hazards such as ocean acidification needs international cooperation to be combatted because it causes a threat to the marine ecosystem.<sup>388</sup> This is due to the transboundary nature of ocean acidification thus becoming a global challenge. Of the well-known top 5 (five) states that emit carbon dioxide namely China, the USA, India, Russia and Japan, not all of these states will seriously suffer the consequences of ocean acidification through emission due to their abundance of scientific resources.<sup>389</sup> Only the states that lack scientific resources and the skills needed to monitor the ocean will suffer dire consequences. Hence, the global network is encouraged amongst the states.

The body took a positive step to monitor the ocean through the Global Ocean Observing System. This is a body's collaborative platform to deliver to its members' states a sustained observation of a global ocean to provide information that supports different types of services including climate research, ocean forecast and other physical measures such as temperature, salinity and surface winds.<sup>390</sup> The IOC also deals with tsunami warning and mitigation of tsunami through the Global Tsunami Warning System.<sup>391</sup>

Although tsunami occurs rarely, its occurrence is always accompanied by drastic actions that include loss of human lives, damage to property, loss of marine life species, disturbance of the marine ecosystem and economic loss.

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<sup>387</sup> Ehlers 2000 *15 Int'l J. Marine & Coastal L.* 535.

<sup>388</sup> Gallo and Tosti 2016 *J Marine Sci Res Dev* 1.

<sup>389</sup> Harrould-Kolieb, Hirshfield and Brosius 2009 *Oceana Protecting the World's Ocean* 2.

<sup>390</sup> Moltmann et al 2019 *Front. Mar. Sci.* 2.

<sup>391</sup> Tsunami Warning and Preparedness Assessment Programme 2011 [https://www.nap.edu/login.php?record\\_id=12628](https://www.nap.edu/login.php?record_id=12628) (Accessed on 03/12/2019).

Thus, the IOC deemed it imperative to monitor this natural disaster and encourages states to do the same. The Global Tsunami Warning System comes with possible ways that can be employed to warn the citizens about tsunamis. A prime example can be traced in Japan where an improved system has been employed after it was attacked by a tsunami in 2011.<sup>392</sup> The Japanese have placed observational capabilities that have pressure sensors that report data in real-time through underwater cables.<sup>393</sup> The most interesting part is that Japan shares their tsunami data with all nations of the global system.

#### **4.1.2. United Nations Environment Programme (UNEP)**

UNEP was created in 1972 as an institution that will be responsible to give reality to the Stockholm conference policies at a global level.<sup>394</sup> The body was intended to give guidance to steps that should be taken to deal with environmental issues internationally.<sup>395</sup> The body is well known for its program called the Earth Watch which is used to detect international environmental problems, conduct research pertaining to the environment, exchange information discovered from the research and issue warnings on future possible environmental hazards.<sup>396</sup> Concerning issues relating to the sea or ocean, the body has different programs that it is involved in such as the Regional Sea Programme.

This programme aims to address the increasing degradation of the world's ocean and coastal areas by encouraging interaction between and amongst different states within the same proximity to collectively embark on the protection of the shared marine environment.<sup>397</sup> UNEP Regional Sea Programme relies on the intentions of different Conventions and Action Plans to achieve its monitoring efforts. The programme aligns itself with the spirit of international cooperation between the states as set out in the following Conventions and Action Plans hereunder:

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<sup>392</sup> Bernard and Titov 2015 *Phil. Trans. R. Soc.* 6.

<sup>393</sup> Bernard and Titov 2014 *Phil. Trans. R. Soc.* 6.

<sup>394</sup> Ivanova 2012 *Oxford Journals University Press* 565.

<sup>395</sup> Hardy 1973 *Nat. Resources J* 236.

<sup>396</sup> Gray 1990 *Envtl. L.* 291.

<sup>397</sup> Akiwumi and Melvasalo 1998 *Marine Policy* 229.

#### **4.1.2.1. Barcelona Convention**

The Convention was first signed in 1976 and later in 1995, it got revised.<sup>398</sup> The Convention urged the Contracting Parties in terms of Article 12 to monitor their coastal regions through the establishment of a pollution monitoring system by stipulating that:

(1) The Contracting Parties shall endeavour to establish, in close cooperation with the international bodies which they consider competent, complementary or joint programmes, including, as appropriate, programmes at the bilateral or multilateral levels, for pollution monitoring in the Mediterranean Sea Area and shall endeavour to establish a pollution monitoring system for that Area.

(2) For this purpose, the Contracting Parties shall designate the competent authorities responsible for pollution monitoring within areas under their national jurisdiction and shall participate as far as practicable in international arrangements for pollution monitoring in areas beyond national jurisdiction.

(3) The Contracting Parties undertake to cooperate in the formulation, adoption and implementation of such annexes to this Convention as may be required to prescribe common procedures and standards for pollution monitoring.

It is worth noting that the monitoring system established should be in close cooperation with the international bodies and not be contrary to international standards. Hence, the performative protocols were established to augment the advancement of a robust pollution monitoring system in the Mediterranean Sea.

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<sup>398</sup> The Convention for the Protection of the Mediterranean Sea Against Pollution (1978).

The provenance of the Mediterranean region is decorated by rich natural resources coupled with the history and the culture of mankind.<sup>399</sup> Sadly, this region is shared by different types of countries with different levels of development thus making it susceptible to the dictates of marine environment stressors.<sup>400</sup> The intense growth of these stressors within the Mediterranean region is accelerated by industrialisation and myriad of human activities *viz* overfishing, marine pollution, aquaculture exploitation and many others.<sup>401</sup> These stressors convert what used to portray the abundance beauty of nature into a desolate environment. It is against this backdrop that the Barcelona Convention opted to augment its monitoring system by establishing performative protocols to regulate, mitigate, curb or combat the perpetuation of marine environment stressors.

Interestingly, Hilderling, Keessen and Rijswick after having acknowledged the efforts invested in the establishment of different legal regimes in order to protect the marine environment, they rightfully questioned the effectiveness of these legal regimes in protecting the marine environment.<sup>402</sup> The pertinence of this inquiry is because the marine environment continues to deteriorate in the presence of the established legal regimes. Ordinarily, this inquiry will not lend itself to a simple answer. Hence, it was not surprising to find out that the Commission of the European Communities (CEC) made an implicit concession that the legal regimes established are struggling to protect the marine environment.

This implicit concession is deducted from the CEC's communication to the council and the parliament initiating the establishment of the Environmental Strategy of the Mediterranean (ESM).<sup>403</sup> The objectives of the ESM are stipulated in the communication from the Commission to the Council and the European Parliament. They intend to "(a) help partner countries to create appropriate institutions, develop an effective policy and establish a legal framework that enables environmental

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<sup>399</sup> Pavasovic 1996 *Ocean & Coastal Management* 134.

<sup>400</sup> Pavasovic, 1996 *Ocean & Coastal Management* 134.

<sup>401</sup> Piroddi et al 2017 *Scientific Report* 1.

<sup>402</sup> Hilderling, Keessen and Van Rijswick 2009 *Utrecht Law Review* 80-81.

<sup>403</sup> Commission of the European Communities 2006 <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0475:FIN:EN:PDF> (Accessed 03/12/2019).

concerns to be integrated into other sectors of activity, (b) reducing levels of pollution and the impact of the uncontrolled activity, (c) preparing local administrations to react to emergencies as well as to one-off and long-term issues, (d) making more sustainable use of land and sea areas, (e) increasing information, awareness and the participation of the public and (f) encouraging regional cooperation amongst partner countries”.<sup>404</sup>

The objectives of the ESM make it clear that, like other legal regimes, the ESM does not prohibit marine pollution rather it mainly seeks to reduce the acceleration of marine pollution and maintain the well-being of the marine environment through sustainable use of marine resources. The approach employed by the ESM warrants a further inquiry as to whether the legal regimes that preceded it never intended to reduce the occurrence of marine pollution but this catastrophe continued regardless.

#### **4.1.2.2. Cartagena Convention**

The Convention encourages cooperation between the Contracting Parties through international and regional organisations that are competent to exchange data on scientific and technical information and other scientific information connected to the Convention. The Convention provides that “(1)The Contracting Parties undertake to cooperate, directly and, when appropriate, through the competent international and regional organizations, in scientific research, monitoring, and the exchange of data and other scientific information relating to the purposes of this Convention, (2)To this end, the Contracting Parties undertake to develop and co-ordinate their research and monitoring programmes relating to the Convention area and to ensure, in co-operation with the competent international and regional organizations, the necessary links between their research centres and institutes to produce compatible results”.

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<sup>404</sup> Commission of The European Communities 2006 <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0475:FIN:EN:PDF> (Accessed 03/12/2019).



To further protect the Convention area, the Contracting Parties shall endeavour to participate in international arrangements for pollution research and monitoring, (3) The Contracting Parties undertake to cooperate, directly and, when appropriate, through the competent international and regional organizations, in the provision to other Contracting Parties of technical and other assistance in fields relating to pollution and sound environmental management of the Convention area, taking into account the special needs of the smaller island developing countries and territories.<sup>405</sup>

This Convention works in support of other environmental conventions and protocols such as the Convention on Biological Diversity (CBD)<sup>406</sup> and the Cartagena Protocol on biosafety.<sup>407</sup> The Cartagena Protocol came as a result of the CBD. The protocol seeks to provide adequate protection towards the environment with a special focus on safe transfer, use and the handling of the living organisms that are modified through modern biotechnology.<sup>408</sup> Adler pointed out the human species' dependence on other species as a calamity to biological diversity.<sup>409</sup> It is common and apparent that different resources used by human species *to wit* clothing, shelter, food and many others that are used daily come from different species.<sup>410</sup>

The human species' dependence on other species has a knock-on effect on the dwindling biological diversity. Thus, the world's ever-growing population rate threatens the sustainability of biological diversity. This threat prompted the need to consider Genetically Modified Organisms (GMO) as a mitigating factor to the deteriorating biological diversity. GMO comprises genetically altered organisms *viz* animals and plants.<sup>411</sup> Basically, the GMO's DNAs have been manipulated using modern biotechnology and the idea behind this DNA

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<sup>405</sup> A 13 of the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region Cartagena (1986).

<sup>406</sup> Convention on Biological Diversity (1993).

<sup>407</sup> Cartagena Protocol on Biosafety to the Convention on Biological Diversity (2003).

<sup>408</sup> Article 1 of the Cartagena Protocol on Biosafety to the Convention on Biological Diversity (2003).

<sup>409</sup> Adler 2000 *Faculty Publications* 764.

<sup>410</sup> Adler 2000 *Faculty Publications* 764.

<sup>411</sup> Glass 2000 *J. Int'l L. & Bus.* 491 493.

manipulation lends itself to different reasons such as but not limited to enhancement purposes and transgenic purposes.

According to Zhang, Wolhueter and Zhang the GMO plays an important role in sustaining the high demand for resources due to the expansion of the world population.<sup>412</sup> Its agronomical benefits provide a glimmer of hope in averting food security concerns amid a reduction in arable land and bottleneck of conventional breeding.<sup>413</sup> The anti-GMO organisations such as Green peace International<sup>414</sup> and Friends of the Earth International<sup>415</sup> object to the genetic modification of plants and animals to promote agricultural activities and calls for policies to be enacted to ban the GMO projects.<sup>416</sup>

It is contended that GMOs have adverse effects on human health and the environment. To this day, the contestation between the pro-GMO and anti-GMO cabal still enjoys conflicting deliberation in science space. There is no clear direction as to whether the GMO presents itself as a good or a bad initiative towards the sustainability of biological diversity. From this contestation, a layman, or worse, a scientist who is well conversant within the scientific field may be inclined to view the GMO initiative as one of the curate's eggs. This is premised on the fact that its existence breeds twofold contrasting outcomes. On the one hand, it is believed to avert food security concerns and foster sustainability of biological diversity. On the other hand, it is believed to be posing threats to human health and the environment.

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<sup>412</sup> Zhang, Wohlhueter and hang 2016 *Food Science and Human Wellness* 119.

<sup>413</sup> Zhang, Wohlhueter and hang 2016 *Food Science and Human Wellness* 119.

<sup>414</sup> Greenpeace was established in 1971 in order to expose environmental problems occurring in the world and seek solutions to those problems. It seeks to promote the protection of the environment and advances its sustainability.

<sup>415</sup> Friends of the Earth International is an environmental organization formed in 1969, it is found in 74 countries. It seeks to foster equity amongst people and encourages participation, cooperation and sovereignty pertaining to environmental issues.

<sup>416</sup> Dorius and Lawrence-Dill 2018 *Biotechnology in Agriculture and the Food Chain* 55.

#### 4.1.2.3. The Abidjan Convention

The Abidjan Convention that was entered into in Ivory Coast in the year 1984, provides encouragement akin to the Cartagena Convention. The Abidjan Convention also encourages cooperation in the West and Central African Region to cooperate amongst them with the assistance of competent international and national organisations in assessing, monitoring and conducting research about pollution in the Convention area.

This is outlined in terms of Article 14 of the Convention which stipulates that “(1) The Contracting Parties shall co-operate, directly or with the assistance of competent regional and international organizations, in scientific research, monitoring, and the exchange of data and other scientific information relating to the purposes of this Convention and its protocols, (2) to this end, the Contracting Parties shall develop and co-ordinate their research and monitoring programmes concerning pollution and natural resources in the Convention area and shall establish, in co-operation with competent regional and international organizations, a regional network of national research centres and institutes to ensure compatible results. To further protect the Convention area, the Contracting Parties shall endeavour to participate in international arrangements for research and monitoring outside the Convention area and (3) the Contracting Parties shall co-operate, within their available capabilities, directly or through competent regional and international organizations, in the provision to other Contracting Parties of technical and other assistance in fields relating to pollution and sound environmental management of the Convention area”.

Dabban and Vinkhuyzen lambasted the slow pace at which the Convention moves in implementing its objectives.<sup>417</sup> This was not only captured by the said authors, the UNEP also realised it, thus, initiated for the establishment of the Regional Coordinating Unit in order to strengthen the Convention’s implementation.<sup>418</sup> The convention seeks to address environmental problems through the collective efforts

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<sup>417</sup> Barnes-Dabban and Karlsson-Vinkhuyzen 2018 *Int Environ Agreements* 472.

<sup>418</sup> Harry Barnes-Dabban, Sylvia Karlsson-Vinkhuyzen 2018 *Int Environ Agreements* 472.

of the participating states within the region. It is apparent from the Convention's text that pollution concern was overly concentrated to the exclusion of other emerging concerns such as but not limited to coastal management issues, climate change, the overexploitation of aquaculture resources, the vulnerability of Small Island developing states and the acceleration growth of the world population.<sup>419</sup>

Apart from the concerns mentioned immediately above, there is still lack of academic data pertaining to the pros and cons of the Abidjan Convention. Environmentalists within the marine field demonstrate a lack of interest in investing in the body of knowledge pertaining to the progression of this Convention. Thus, lack of academic research in respect of this Convention opens room for either misunderstanding of the Convention's development or the misleading thereof.

#### **4.1.2.4. The Nairobi Convention**

The Nairobi Convention which operates in the Eastern African region also echoed the same sentiments made by the Cartagena and the Abidjan Conventions imploring cooperation in the Eastern African Region to cooperate amongst themselves. This is reflected in terms of Article 14 of the Convention where the Contracting Parties are urged to directly or indirectly co-operate with one another in respect of scientific research, monitoring and exchange of information pertaining to the protection of the marine environment in the Eastern region. Furthermore, they are encouraged by this Convention to coordinate their research and monitoring programme to ensure compatibility.

Apart from the conventions, a reasonable contribution in respect of the protection of the marine environment was made through the coordination of the Action Plan. The Action Plan is aimed at the protection, management and development of the marine and coastal environment of the North West Pacific region which was

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<sup>419</sup> The Abidjan Convention <http://ioisa.org/wp-content/uploads/2016/09/WEST-AFRICA-GROUP-.pdf> (Accessed 14/03/2020).

established in 1994.<sup>420</sup> Its major goal is the prevention of marine environment degradation as a result of land-based activities. This is done through the UNEP's encouragement on the states that bear the duty to preserve and protect the marine environment to act accordingly.

Its existence encourages states to act against pollution of the environment through different types of policies. Furthermore, the body also contributes to the protection of coastal reefs through funding that it provides to the Global Task Team of experts with experience in coral reef science and management globally. This initiative is aimed at protecting the coastal coral reef because of the abundance of activities that the reefs offer.

Those activities include amongst others pharmaceutical active compounds, erosion prevention and profit resulting from tourism and recreation.<sup>421</sup> Coral reefs are predominantly located in shallow coastal waters thus susceptible to harm. Their susceptibility is heightened by the surfeit of available sources with the capability of destroying the coral reefs *viz* overfishing, acidification, climate change, destructive fishing techniques, natural hazards, marine pollution and coastal development.<sup>422</sup> It is against this backdrop that UNEP took initiative to make efforts that can assist in salvaging the world's current and future coral reefs that are faced with the immense pressure of sustenance.

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<sup>420</sup> The Protection, Management and Development of the Marine and Coastal Environment of the Northwest Pacific Region 2007 Publication No. 1 "date unknown"  
[https://wedocs.unep.org/bitstream/handle/20.500.11822/25786/ActionPlan\\_Marine.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/25786/ActionPlan_Marine.pdf?sequence=1&isAllowed=y) (Accessed 14/03/2020).

<sup>421</sup> Scripps Institution of Oceanography "date unknown"  
<https://scripps.ucsd.edu/projects/coralreefsystems/about-coral-reefs/value-of-corals/> accessed on (14/03/2020).

<sup>422</sup> United States Environmental Protection Agency 2018 <https://www.epa.gov/coral-reefs/threats-coral-reefs> (Accessed on 14/03/2020).

#### **4.1.3. Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP)**

This is an international advisory body that is tasked with providing scientific advice pertaining to prevention, reduction and control of the degradation of the marine environment. This body produces periodic reports and assessments from different topics pertaining to the marine environment. The reports deal with topics including but are not limited to (a) Reducing Environmental Impacts of Coastal Aquaculture: Food and Agriculture Organization of the United Nations (FAO), (b) The Contributions of Science to Integrated Coastal Management: Food and Agriculture Organization of the United Nations and (c) Land-based sources and activities affecting the quality and uses of the marine, coastal and associated freshwater environment. These reports are discussed below as follows:

##### ***4.1.3.1. Report on Reducing Environmental Impacts of Coastal Aquaculture: Food and Agriculture Organization of the United Nations (FAO)***

Aquaculture refers to the farming of aquatic species and organisms such as aquatic plants and fishes.<sup>423</sup> Coastal aquaculture has the potential to yield food production and generate income that may contribute to the well-being of the economy.<sup>424</sup> However, poor governance pertaining to aquaculture can threaten the potential yield. The report advised the States that to sustain aquaculture, it is imperative to formulate coastal aquaculture development and management plan. In South Africa, the coastal and management plan was formulated under the Aquaculture Environmental Management Programme.

This programme is facilitated under the auspices of the Department of Agriculture, Fisheries and Forestry (DAFF). The programme is tasked with the duty to determine the environmental impacts associated with aquaculture by outlining the checklist that indicates how the impacts of aquaculture activities are to be mitigated and give recommendations on factors that should be considered before the establishment of

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<sup>423</sup> Guardiola et al 2012 *Int. J. Mol. Sci.* 1543.

<sup>424</sup> Diana 2009 *Bio Science* 27.

an aquaculture operation.<sup>425</sup> An example of the Aquaculture Environmental Management Programme checklist of aquaculture specific activities/risks, impacts, mitigation measures and considerations is indicated below:

**Table 4. 1: Aquaculture Environmental Management Programme checklist of aquaculture specific activities/risks, impacts, mitigation measures and considerations**

Activity	Generic Impact	Mitigation measures	Considerations
Fauna Interactions with farms	Fauna Mortality	Use regulated poison only	Endangered species in the area
Use of fishmeal aquatic organisms	Pressure on wild stocks	Make use of Feed management programme	Risk of introduction of diseases
Stocking of farmed	Potential escape that may result in genetic	Use escape-proof mechanisms	Consideration of zoning

<sup>425</sup> Aquaculture Environmental Management Programme Checklist, Department of Agriculture, Forestry and Fisheries, South Africa [https://www.daff.gov.za/daffweb3/Branches/Fisheries Management/Aquaculture-and-Economic-Development/aaquaculture-sustainable management/Aquaculture%20EMP%20Checklist%20Brochure.pdf](https://www.daff.gov.za/daffweb3/Branches/Fisheries%20Management/Aquaculture-and-Economic-Development/aaquaculture-sustainable%20management/Aquaculture%20EMP%20Checklist%20Brochure.pdf) accessed on (21/02/2020).

aquatic species	and biodiversity impact on wild fisheries		Restrictions
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As it has already been indicated that this programme is supported by the DAFF, the checklist indicated in the above table assist the department during the review processes and facilitation of decision making on Environmental Management Programmes. South Africa's efforts in heeding the advice of the international advisory body did not stop after the implementation of the Aquaculture Programme for Checklist. Legislators took the matter further by passing a Bill in 2018.

The name of the Bill is Aquaculture Development Bill B 22-2018. In this Bill special attention pertaining to the marine environment should be directed to Chapter 8 that promotes a spirit of maintaining environmental integrity and also Chapter 12 that deals with the inspection and enforcement relating to aquaculture development. The Bill places the responsibility pertaining to water quality wholly on the ministers that are responsible for water and the environment. The said ministers are tasked with a duty to prescribe water quality objectives. This responsibility is indicated in terms of section 43 of the Aquaculture Bill which set out the following:

- (1) The Minister may, after consultation with the Ministers responsible for the environment and water, prescribe water quality objectives and standards for aquaculture.
  - (2) In order to assist with the achievement of water quality objectives, the Minister may enter into an agreement with-
    - (a) the Minister responsible for water on water use that may adversely affect freshwater aquaculture facilities;
    - (b) the Minister responsible for the environment for water quality objectives for aquaculture in the marine environment;
- or



(c) the Ministers referred to in paragraphs (a) and (b) in respect of water quality objectives for aquaculture in brackish waters.

(3) The Minister may, after consultation with the Minister responsible for water affairs, develop and implement a water quality monitoring system.

(4) The Minister must allow persons undertaking aquaculture activities access to information about any condition that may affect the health of aquatic organisms.

It is submitted that, placing the responsibility of water quality that is meant to sustain aquaculture, wholly in the hands of ministers could prove to be problematic. The problem may arise due to the specialised nature of aquaculture. As a specialised field, the minister may find it complex to fathom the dynamics associated with aquaculture. Thus, efficiency on the sustainability of aquaculture might be compromised. Section 43 (4) of the Bill invites the public to be involved, however, their involvement is only limited to access to information.

This section makes use of the peremptory word “must” however it fails to make an indication of the available remedies that can be afforded to the public in the event the minister denies them access to information. A positive approach is adopted by the Aquaculture Development Bill in terms of Section 44 by imposing a duty on everyone to ensure the protection of aquaculture. The Bill provides that:

Notwithstanding the provisions of any other law, a person engaged in aquaculture activities must take all reasonably practical measures to

(a) avoid or minimise any harmful environmental impact caused by aquaculture, including but not limited to;

(i) harm to the environment by alien and invasive species; and

(ii) contamination of the environment by genetically modified organisms and

(b) prevent the escape of live aquaculture organisms into the aquatic environment of the Republic.

The protection is further extended in terms of Section 73<sup>426</sup> of the Bill that declares certain conducts to be offences. Those conducts include engaging in aquaculture activity without authorised aquaculture permit or licence,<sup>427</sup> releasing a live aquaculture organism into the aquatic environment without licence or permit,<sup>428</sup> not reporting any identifiable pathogen or pest to the licencing authority after noticing it,<sup>429</sup> make use of or sell unregistered aquaculture drug or feed,<sup>430</sup> importing and exporting aquaculture product without import and export permit issued by licencing authority and removal of live aquaculture organism or aquaculture product.<sup>431</sup> These conducts are declared to be offences and are punishable in terms of Section 74 of the Bill which states the following:

(1) A person convicted of an offence in terms of section 73(a) or (b) is liable to a fine not exceeding R2 million or to imprisonment for a period not exceeding 10 years, or to both a fine and imprisonment.

(2) A person convicted of an offence in terms of section 73(c) is liable to a fine not exceeding R1 million or to imprisonment for a period not exceeding five years, or to both a fine and imprisonment.

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<sup>426</sup> Section 73 of the Aquaculture Bill provides that “a person commits an offence if that person (a) contravenes sections 26(1) or (2), 32(1), 45, 49(2) or (3), 54(1), 60(1), 62(2) or 64(1) of this Bill; (b) contravenes or fails to comply with a condition of a licence or permit or exemption which has been granted in terms of this Bill; or (c) fails to cooperate with the reasonable and lawful instructions of an aquaculture inspector on duty”.

<sup>427</sup> Section 26(1) of *Aquaculture Development Bill B22-2018*.

<sup>428</sup> Section 45 of *Aquaculture Development Bill B22-2018*.

<sup>429</sup> Section 49(2) of *Aquaculture Development Bill B22-2018*.

<sup>430</sup> Section 54(1) of *Aquaculture Development Bill B22-2018*.

<sup>431</sup> See Section 62(2) and Section 64(1) of *Aquaculture Development Bill B22-2018*.

It is submitted that the penalties indicated in terms of this Bill in an attempt to protect aquaculture organisms and aquaculture products are not stringent enough particularly on the monetary part of it. This stems from the fact that, if a big company with a lucrative turnover can cause harm, the fine imposed by the Bill may not commensurate to the harm caused due to a possibility of the occurrence of irreparable harm in respect of aquaculture products and organisms.

#### **4.1.3.2. Report on the Contributions of Science to Integrated Coastal Management: Food and Agriculture Organization of the United Nations**

Integrated Coastal Management seeks to ensure that the quality of life of the people who depend on coastal resources are improved.<sup>432</sup> In the process of improving their lives, the biological diversity and productivity of the coastal ecosystem must be maintained and sustained.<sup>433</sup> Adequate maintenance and sustainability of biological diversity and coastal ecosystem productivity can be achieved through proper governance.<sup>434</sup> This should be achieved despite the existence of the growing concerns pertaining to coastal areas viz overexploitation of resources, insidious damage of biodiversity through climate change and marine pollution.<sup>435</sup> It is against this backdrop that this report endeavoured to find a manner in which science or scientist can contribute to the effectiveness of Integrated Coastal Management.

The invitation of science and scientists in the marine field popularised studies such as marine biotechnology. The study concerns itself with the protection and management of marine organisms.<sup>436</sup> Its relevance to Integrated Coastal Management stems from the existence of a high population in the coastal areas.

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<sup>432</sup> The Contributions of Science to Integrated Coastal Management 1996 <http://www.fao.org/3/contents/dc824e26-b1b7-568d-8770-1f9347ecb063/W1639E00.HTM> (Accessed on 14/03/2020).

<sup>433</sup> The Contributions of Science to Integrated Coastal Management 1996 <http://www.fao.org/3/contents/dc824e26-b1b7-568d-8770-1f9347ecb063/W1639E00.HTM> (Accessed on 14/03/2020).

<sup>434</sup> Neumann, Ott and Kenchington 2017 *Sustain Scie* 1022.

<sup>435</sup> Neumann, Ott and Kenchington 2017 *Sustain Scie* 1020.

<sup>436</sup> Wijffels 2008 *Biotechnol* 26.

The population results in high usage of marine resources such as seafood , plants and marine animals thus threatening the sustainability of ocean organisms.<sup>437</sup>

Marine biotechnology can improve food delivering ability, contribute to economic development and manage sustainable development of coastal areas around the world through its functional diversity of marine life and marine natural resources.<sup>438</sup> To benefit effectively from the existence of science and scientist in the marine field, there has to be a synergistic interaction between legislators, the scientific community, industries and the general public pertaining to marine environmental issues.

South Africa is not immune to the plight of over-reliance on marine resources due to the ever-growing coastal population. Thus, any possibility or an opportunity to benefit from the existence of science and scientist will be highly appreciated. More so, the existence of the Integrated Coastal Management Act that regulates South African coasts does not attempt to promote the usage and involvement of science and scientist in protecting the coasts. This is reflected in its scope of chapters that lack the inclusion of the integration or promotion of science in the protection of the coast.

It is submitted that, the Act's omission to include the use of science and scientist in the quest of protecting and managing the marine environment is not a wise move. This is underscored by the utterance of Grilli *et al* who opined that the diversity of marine environment and its complexity together with coastal zones integration are not easily comprehensible provided that an interdisciplinary research approach that includes science and the usage of scientists is employed.<sup>439</sup> Based on this shared wisdom, it is advisable for South Africa to move towards the interdisciplinary research approach in managing its coasts. Such an interdisciplinary approach can

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<sup>437</sup> Food and Agriculture Organization <http://www.fao.org/3/V5321E/V5321E02.htm> (Accessed on 07/03/2020).

<sup>438</sup> Final Report on study in support of Impact Assessment work on Blue Biotechnology [https://ec.europa.eu/maritimeaffairs/publications/study-support-impact-assessment-work-blue-biotechnology\\_en](https://ec.europa.eu/maritimeaffairs/publications/study-support-impact-assessment-work-blue-biotechnology_en) (Accessed on 07/03/2020).

<sup>439</sup> Grilli et al 2019 *Ocean and Coastal Management* 219.

be accommodated in the Incident Management Organisation (IMOrg) as a current developing project.<sup>440</sup>

This body is a preparedness measure employed by the Department of Transport to manage and respond to gas leakages and oil spills that occur on the South African coasts. In future, the Department consider promulgating a legislative framework that will support the IMOrg to be able to respond positively to oil spills and gas leakages.<sup>441</sup> In 2019, during the existence of IMOrg, an oil spill incident occurred in South Africa in Algoa Bay.<sup>442</sup> This was the time were the effectiveness and relevance of this organisation was to be tested. However, the incident was considered to be a Tier 1<sup>443</sup> level incident that does not need national authorities' intervention. Thus, the IMOrg did not play any role.

#### **4.1.3.3. Report on Land-based sources and activities affecting the quality and uses of the marine, coastal and associated freshwater environment**

The report was instigated by the growing gap between water supply and demand with a major contributor being land-based activities. The reduction in water quality as a result of land-based activities accounts for the declining water supply.<sup>444</sup> Not only do the land-based activities adversely affect water quality, marine and coastal environments are also affected. With many sectors prone to damage emanating from land-based activities, regulation and management became imperative. Thus, countries made efforts to protect the affected sectors. Under this topic, reference will be made to Australia, South Africa and Ghana as countries that dominantly

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<sup>440</sup> It is an intergovernmental body established in order to respond to marine pollution cases that are of high magnitude. One of the IMOrg's main goals will be to create a standardised approach to managing oil spills across the entire South African coastline.

<sup>441</sup> Arveda 2018 <https://averda.co.za/news/south-africa-improves-management-marine-pollution/> (Accessed on 20/03/2020).

<sup>442</sup> Department of Environment Forestry and Fisheries 2019 <https://www.environment.gov.za/mediarelease/deff-responds-to-oilspill-in-algoabay> (Accessed on 20/03/2020).

<sup>443</sup> Tier 1 spills are the least serious, causing localized damage.

<sup>444</sup> National Academy of Sciences 1999 <https://www.nap.edu/read/6031/chapter/7> (Accessed on 10/03/2020).

practice the common law system of law. This system of law often influences how these countries' legislations are promulgated and applied. It is prudent for the author to lay down a base in respect of Australian and Ghanaian legislations.

This stems from the fact there is nowhere in this study that the two countries' legislations pertaining to the marine environment have been highlighted. Australia has always been alive to the protection of water through the Metropolitan Water Supply, Sewerage, and Drainage Act 043 of 1909. The Act was assented in 1909 with parts IV and V specifically focused on the issue of pollution. Section 17(1) gives the minister the powers to prevent pollution by stating that to prevent the occurrence of water pollution found within or underwater resources or that are located in catchment areas, the Minister is given the power to create and enforce local laws found at a local government under any Act dealing with public health.<sup>445</sup>

On the other hand, Section 57B advances by-laws for pollution areas and allows the Minister to create by-laws to protect the pureness of underground water within any pollution area. The minister may further control, regulates or prohibit any discharge that may cause pollution on the ground and adversely affect the purity of underground water. When the minister control, regulates or prohibit pollution, it is immaterial whether the pollution comes directly or indirectly.<sup>446</sup> A penalty is imposed on perpetrators who contravene this Act and cause pollution despite the minister's control, regulation and prohibition.

The Act imposes a penalty fee not exceeding \$200 for a single breach and in terms of a continuing breach, the Act imposes a penalty fee not exceeding \$10 for each day the breach continues upon receipt of notice of breach by the perpetrator.<sup>447</sup> The deterioration of water quality, marine and coastal pollution overwhelmed the measures taken by this Act and continued to grow. This was reflected in Australia's

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<sup>445</sup> *Metropolitan Water Supply, Sewerage, and Drainage Act 043 of 1909.*

<sup>446</sup> Section 57B (1) of the *Metropolitan Water Supply, Sewerage, and Drainage Act 043 of 1909.*

<sup>447</sup> Section 57B(4) of the *Metropolitan Water Supply, Sewerage, and Drainage Act 043 of 1909.*

survey of the marine environment.<sup>448</sup> This instigated a need to develop a water management strategy. The strategy gave birth to a National Water Quality Management Strategy (NWQMS).<sup>449</sup> The NWQMS comprises policies and guidelines that can assist different stakeholders to manage water quality. Its scope covers different types of Australian waters amongst others includes (a) groundwater, (b) marine water and (c) freshwater. These types of waters offer a range of activities such as drinking, recreation, cultural and spiritual values and many others.

Although Australia is a country that is technologically and scientifically advanced, the strategy invites indigenous people to contribute to the enhancement of the management of water quality. This is motivated by the belief harboured by indigenous people of Australia that water resources have important cultural and spiritual value to them due to the existence of an inseparable relationship.<sup>450</sup> Thus, establishing a concrete reason to believe that good outcomes pertaining to preservation, protection and enhancement of water quality can be drawn from the integration of cultural and spiritual knowledge of the indigenous people.

Apart from the legislation and the strategy set out above, initiatives such as the Sea Shepherd has been a key organization in Australia.<sup>451</sup> This initiative concerns itself with the responsibility to defend, conserve and protect oceans from activities that can cause harm to the marine environment. It produced a marine debris campaign wherein volunteers conduct beach cleanups. The clean-up managed to remove over 2.6 million pieces of marine debris.<sup>452</sup>

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<sup>448</sup> The State of the Marine Environment Report 2016 [https://soe.environment.gov.au/sites/default/files/soe2016-marine-launch\\_v36march17.pdf](https://soe.environment.gov.au/sites/default/files/soe2016-marine-launch_v36march17.pdf)? (Accessed on 11/03/2020).

<sup>449</sup> The National Water Quality Management Strategy is established for the purpose of developing and maintaining a coordinated framework within the Australia in order to ensure proper water quality management so that the sustainability and productivity of water resources in Australia are properly managed.

<sup>450</sup> Charter: National Water Quality Management Strategy 2018 <https://www.waterquality.gov.au/about/charter> (Accessed on 11/03/2020).

<sup>451</sup> Sea Shepherd is a non-profit international organisation dealing with the conservation, protection and defense of the world's oceans.

<sup>452</sup> Sea Shepard Marine Debris Campaign <https://www.seashepherd.org.au/our-campaigns/> (Accessed on 12/03/2020).

African countries are not immune to land-based activities catastrophe. South Africa and Ghana amongst other African countries also suffer from this catastrophe. Over the years, the South African marine environment proved to be rich and diverse containing different activities such as fishing, seafood, tourism and recreation, transportation, energy and pharmaceutical products.<sup>453</sup> These activities contribute to the well-being of the economy and offer social opportunities. However, the existence of these opportunities is the cause of high population increase within the coasts thus accelerating pollution from land-based activities.

This has been affirmed by writers such as O'Donoghue and Marshall who stated that "[...] recent years have seen an influx of people to the coast, and current estimates are that one-third of the population resides within 60km of the seashore. This places environmental pressure on the coastal systems, inevitably increasing the threat of their degradation, including that relating to pollution".<sup>454</sup> Marine pollution from land-based activities is now common parlance within the marine field. The World Wildlife Fund (WWF) states that over 80% of marine pollution comes from land-based activities ranging from plastics bags through littering, oil through runoff from cities, fertilizers runoff from agricultural activities and other sources.<sup>455</sup>

In South Africa, apart from legislations that have been promulgated to regulate, control and manage marine pollution from land-based activities, the high percentage of damage from land-based activities prompted other initiatives such as Hope Spots and Beach Clean-up. The Hope Spots targets places in the ocean that have different characters that are useful to the marine environment *viz* (a) places having a special abundance of species, (b) places that are home to rare species or threatened species, (c) sites with potential to be restored from damage emanating from human impact.<sup>456</sup> All the targeted places are important to the marine environment and threatened by damage from land-based activities. The Beach

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<sup>453</sup> Taljaard, Monteiro and Botes 2006 *Water SA* 535.

<sup>454</sup> O'Donoghue and Marshall 2003 *South African Journal of Science* 349.

<sup>455</sup> The World Wide Fund 2020  
[https://wwf.panda.org/discover/our\\_focus/oceans\\_practice/problems/pollution/](https://wwf.panda.org/discover/our_focus/oceans_practice/problems/pollution/)  
(Accessed on 11/03/2020).

<sup>456</sup> Hope Spots <https://sst.org.za/projects/hope-spots/> (Accessed on 14/03/2020).



Clean-up is an initiative taken to clean the beach from littering. Beach Clean-ups are taken seriously, this is due to a better understanding pertaining to the impacts of littering on the marine environment.

A commitment by the citizens of South Africa to protect the marine environment from littering is indicated in a report made by Two Oceans Aquarium under a campaign called Trash Bash.<sup>457</sup> The report indicates the work achieved by the Trash Bash campaign in the quest of protecting the marine environment from harm emanating from land-based activities. Although the campaign is focused more on littering, it is not misplaced because littering poses a serious threat to marine species and the ecosystem. This is underscored by a statement posted on Cape Times newspaper that was uttered by Two Oceans Aquarium Communications & Sustainability Manager Helen Lockhart who stated that:

Plastic doesn't break down, it doesn't degrade and become part of the natural system again. It breaks up into smaller and smaller pieces until it becomes small enough, not only for small fish to mistake it for food, but research has found that even plankton is now mistaking it for food and consuming it, introducing it into the food chain at the lowest level. 80% of plastic found in the oceans originates on land [...]<sup>458</sup>

This statement attaches value to the work and achievements accomplished by the Trash Bash campaign in 2019 as set out below:

- **25 May 2019** - the Two Oceans Aquarium together with Khayelitsha community members and organizations celebrated African day by protecting our ocean biodiversity with a Trash Bash beach cleanup at Monwabisi Beach. The participants collected 51 bags of plastic beach debris.<sup>459</sup>

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<sup>457</sup> Trash Bash is a campaign by the Two Oceans Aquarium established in order to at conduct clean-up commitments.

<sup>458</sup> *Wolf Cape Times*.

<sup>459</sup> Two Ocean Aquarium 2019  
<https://www.facebook.com/TwoOceansAquarium/videos/celebrating-africa-day->

- **8 June 2019** – Volunteers collected a quarter ton of waste on Hout Bay Beach on World Oceans Day. The Trash Bash team had collected over 224kg of beach litter, filling about 20 refuse bags.<sup>460</sup>
- **21 September 2019** – The participants celebrated International Coastal Cleanup Day at Monwabisi Beach where they collected about 10 million kilograms of trash. Cigarette butts came out tops, with 5.7 million collected, followed by food wrappers at 3.7 million and straws and stirrers at 3.6 million.<sup>461</sup>

These achievements prove that South African people make an effort to play a role in the protection of the marine environment. They do not solely rely on drafted legislation. This is mainly because participants in the Trash Bash campaign are volunteers. Having satisfied ourselves with how South African citizens play a role in the protection of the marine environment, our attention now shifts to Ghana.

Ghana is also faced with the plight of land-based activities adversely affecting coastal, marine and freshwater sources of pollution. The country has the Marine Pollution Act, which concerns itself with the prevention, regulation and control of pollution within Ghana's territorial waters, and also promulgated Marine Pollution Bill that is aimed at controlling and preventing marine source pollution.<sup>462</sup> Apart from the existence of legislations, like South Africa, initiatives are taken to mitigate the ever-growing concern of marine pollution from land-based activities.

The government of Ghana joined an initiative called Global Plastic Action Partnership (GPAP) dedicated to do away with plastic waste and pollution that

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with-trash-bash-at-monwabisi-beach/1286447084863833/ (Accessed on 09/03/2020).

<sup>460</sup> Two Ocean Aquarium 2019 <https://www.aquarium.co.za/blog/entry/making-a-world-oceans-day-difference-on-hout-bay-beach-with-trash-bash-2019>. (Accessed on 09/03/2020).

<sup>461</sup> Ocean Conservancy Report <https://oceanconservancy.org/news/ahead-34th-international-coastal-cleanup-ocean-conservancy-report-reveals-prevalence-plastic-cutlery-beaches-waterways/> accessed on (09/03/2020).

<sup>462</sup> *Marine Pollution Act* 48 of 2016.

always makes its way into the ocean and cause marine pollution.<sup>463</sup> There is no trace of any campaign that is geared against the protection of marine pollution from land-based activities in Ghana. This effectively means that Ghana's attitude towards the protection of the marine environment is not satisfactory as compared to other countries such as Australia and South Africa. Thus, Ghana can learn lessons from these two countries.

Having demonstrated the manner employed by Australia, South Africa and Ghana pertaining to the protection of the marine environment from land-based activities. It is prudent that the similarities and the differences in approach should be outlined. The similarities are influenced by the common legal heritage shared by these countries. On the other hand, the differences are influenced by various reasons amongst others being lack of public awareness and education about the importance of the marine environment and the need to protect it.

This is supported by the utterance of Stefan Gelcich *et al* who submitted that different stakeholders show positive interest and effort to protect the marine environment by implementing different initiatives and campaigns but fails to consider public perceptions on the issues and solutions. In other environmental fields such as climate change, human perceptions, understandings, and responses have been explored however the anthropogenic impacts of the marine environment have been overlooked.<sup>464</sup> It is now the time for the author to highlight the similarities, differences and the lessons to be learned amongst these countries.

#### a) *Similarities*

These countries have legislation in place that are promulgated to protect, control and regulate the marine environment from pollution caused by land-based activities. They all do not rely on single legislation to protect the marine environment, there

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<sup>463</sup> The Global Plastic Action Partnership intend to address plastic pollution by expediting the process of circular economy solutions in coastal countries faced with plastic littering.

<sup>464</sup> Gelcich et al. 2014 *Proceedings of the National Academy of Sciences* 1.

are a plethora of legislation promulgated for that course. In appreciating the fact that not all existing legislations directly deal with land-based activities, it will be ill-advised to ignore the immense contribution they make towards the protection of the marine environment. It is worth noting that, having legislation in place to protect the marine environment is good, however, it does not guarantee positive outcomes in terms of protection, regulation and management.

Positive outcomes will only be yield if the legislations' implementation is effective and consistent. It is the author's observation that the majority of legislation promulgated to protect, regulate and manage the marine environment are not stringent enough to deter contravention. This observation is further confirmed by scholars like Odeku and Bapela who averred that "most of the legal frameworks on marine pollution have set out numerous punishments for non-compliance. However, implementation and enforcement are very poor hence the pollution continues with impunity".<sup>465</sup> The benefits that come with legislation are very limited when implementation and enforcement are weak.

#### *b) Differences*

These countries differ materially in the manner in which initiatives are geared to protect the marine environment. In Australia, marine environment initiatives are initiated by the government and get adequate support from the government. Reference can be made to the NWQMS that was established by the Australian government to maintain and support frameworks that are voluntarily been conducted nationally. The government supports these initiatives intending to achieve proper management, protection and sustainable use of Australia's water resources and marine environment.

It is submitted that, the government's involvement is a positive step towards the protection of the marine environment because it gives rise to security, consistency and reliability in respect of the planned initiatives. Security arises from the fact that

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<sup>465</sup> Odeku and Bapela 2017 *Environmental Economics* 131.

government will ensure that there are adequate resources available to execute the campaign in question. An example may arise in a situation where volunteers want to clean the beach. The government will provide materials such as bags, gloves and ensure that sea guards are available to guard against any accident that may require professional assistance.

Consistency arises in the sense that the same resources and measures taken by the government to execute a particular campaign will easily be repeated and arranged whenever there is a similar campaign. This is because the campaign will not be relying on the funding generated by the donors to be a success but will be coming from the government's budget that can be planned in advance. Reliability stems from the fact that volunteers will not doubt the materialization of the campaign because it is supported by the government. The government is more inclined to train few people for the campaign to guide volunteers in their execution of duties for the campaign. This will assist in curbing the possibility of working haphazardly thus compromising the positive outcome of the campaign.

Unlike Australia, South African initiatives are championed by volunteers. The government does not show positive energy to participate meaningfully in the campaigns. The campaigns rely on donors for funding. The level of funding predicts the outcome. It submitted that this arrangement will be in contrast with the situation of Australia that produces security, consistency and reliability.

This is premised on the fact that limited funding will limit the resources needed to execute the duties of the campaign thus compromising the outcome. Volunteers are expected to come with their own tools of work. Those tools can prove to be costly on other volunteers who were prepared to participate in the campaign then they end up reconsidering their decision to participate in the campaign.

On the other hand, enough funding will not automatically guarantee positive outcomes because volunteers may not come in numbers as expected. The skepticism may arise from a lack of certainty pertaining to resources and other logistics. Despite all these challenges, the current author applauds South African Citizens for their active citizenry for they have satisfactorily executed campaigns such as the Trash Bash with commendable participation. The attitude adopted by

these Citizens moves away from what Monyamane and Bapela submitted in their writing:

marine law has largely been an area of law that has not been well aired in our jurisprudence. [T]he lack of research is emanating from the belief that substances entering the sea become diluted by the huge body of water until their concentration becomes unimportant.<sup>466</sup>

Based on the above utterances, the active Citizenry portrayed by volunteers demonstrated a change in attitude pertaining to the protection of the marine environment in South Africa. This is underscored by the behaviour of citizens who volunteered to clean the ocean as opposed to dumping with impunity. This kind of behaviour suggests a level of understanding held by the Citizens of South Africa pertaining to the importance of protecting the marine environment.

In Ghana, there is no marine environment initiative except that it joined the Global Plastic Action Partnership (GPAP). This means that the government will be responsible for the operation and success of this joint initiative. The risk attached thereto is that should the main body collapses the sustainability of this joint initiative in Ghana will be at stake. Basically, Ghana is dependent on the Global initiative for its marine environment protection from land-based activities without initiating anything local. This creates over-reliance on the legislations which their benefits are never certain. Based on the difference in approach on marine protection from land-based activities by these countries, let us see what these countries can learn from each other.

c) *Lessons to be learned*

South Africa can learn about environmental governance from Australia. This stems from the active involvement of the government in the initiatives taken to protect the marine environment from land-based activities. The involvement of the government

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<sup>466</sup> Monyamane and Bapela 2019 *Potchefstroom Electronic Journal* 4.

gives rise to security, consistency and reliability. This will enhance the possibility of yielding positive outcomes from the initiatives and campaigns.

Australia can learn about active citizenry from South Africa. With campaigns in South Africa being championed by the Citizens, it is clear that they understand the value of the ocean and its importance to humans. Although South Africa can learn about environmental governance from Australia, not everything is bad about the environmental governance of South Africa. This is based on the fact that, if citizens can understand the importance of marine environment protection and voluntarily, without any positive support from the government, take measures to protect the marine environment, then there is something positive that has been done in respect of public awareness about the protection of the marine environment.

Ghana can learn both environmental governance and active citizenry from these respective countries. As it has already been indicated above that Ghana over-relies on the legislations to protect the marine environment, Ghana must start initiating local campaigns pertaining to the protection of the marine environment from land-based activities. Furthermore, the government and citizens must equally be involved in this task.

## **4.2. CONCLUSION**

The intervention of both governmental and non-governmental bodies in protecting the marine environment and keeping the ocean healthy is undeniable. The development and introduction of science in the quest of protecting the marine environment or protecting humans from marine environmental hazards is a commendable step. The IOC echoed the importance of capacity building to be able to act proactively against marine issues. The advancement of science in the marine field saw the advent of systems such as GOOS and GTWS which are intended to mitigate dangers that may occur in the marine environment or as a result of the marine environment and cause damage to humans. Due to the balance that has been struck by the existence of these systems, one is inclined to believe that the reduction of marine environment catastrophe will manifest.

This array of hope may however be shattered by the transboundary nature of marine pollution. Furthermore, the existence of different attitudes pertaining to the protection of the marine environment may also be an impediment. Marine pollution is a global concern and some countries demonstrate serious commitment to combat this endemic whilst others are treating it as an afterthought. This is where the transboundary nature of marine pollution becomes victorious against the efforts to protect the marine environment.

For a greater reason, UNEP encouraged state cooperation and different conventions have heeded to the call by incorporating state cooperation at different levels. Should the state cooperation narrative be executed properly, the transboundary nature of marine pollution will be mitigated or to a greater extent, be eradicated, therefore, efforts taken by these bodies will be overt.



## CHAPTER 5

### GENERAL CONCLUSION AND RECOMMENDATIONS

#### 5.1 CONCLUSION

##### 5.1.1. Introduction

Chapter one of this study cared to provide the background of the study which revealed that in the past, marine pollution was neglected. It was not afforded the attention it deserves despite playing a significant role in human's lives. It secured attention in terms of regulation and protection after the world suffered marine incidents that caused severe damage to marine life. These incidents led to the enactment of the marine legal framework around the world and South Africa was not an exception.

The enactment of those legal frameworks prompted the research questions and objectives upon which this study is based. This study seeks to examine the regulation, prevention and control of marine pollution in South Africa with a specific focus on the comparative analysis of international and national frameworks. In doing that, the regime analysis approach and the problem-solving approach as set out in the theoretical framework proved to be pertinent to this study. The former played a pivotal role in elucidating the notion of international cooperation and shared interest. These notions are inherent in marine environment due to its transboundary nature. The latter assisted in identifying the type of problem that perpetuates marine pollution in the existence of marine legal frameworks promulgated to regulate, control and prevent marine pollution. Collectively, these approaches sharpened the idea behind the recommendations advanced in this study.

##### 5.1.2. National and International normative frameworks

The concern relating to legal frameworks to understand whether or not, these legal frameworks serve the purpose for which they are promulgated. This study showed that marine national and international legal frameworks are promulgated to

effectively regulate, prevent and control marine pollution. Chapter two dealt with the national and international legal frameworks promulgated for that purpose. In this chapter, an investigation was made pertaining to the effectiveness of the marine legal framework in regulating, preventing and controlling marine pollution. The study revealed that there exists a relationship between the national and international legal frameworks. However, the existing relationship is not good enough to effectively prevent the marine environment from harm.

This study demonstrated that the flexibility created by the international community on State Parties compromised the deterrent value of national legislation. The majority of the Conventions encourage State Parties to promulgate national legislation in their respective countries without an attempt to provide a guideline or standard that should be adhered to. Thus, the study showed a plethora of national legislation that regulate the marine environment with less stringent measures to deter future contravention.

The majority of national legislations penalize perpetrators who contravene the Act by imposing a fine that comprises a maximum value. The value is determined in terms of the aggrieved state's currency. This approach is disastrous, particularly due to currency fluctuations and conversions values between and/or amongst currencies. Furthermore, the approach does not promote proportionality, which demands that the sanction imposed on perpetrators for a contravention must be commensurate to the damage caused. Unfortunately, this study revealed that the majority of the existing legal frameworks in South Africa that deals with the protection, regulation and control of marine pollution align themselves with this disastrous approach.

It is, however, important to note that, not every part of the existing legislation warrants a change. These legal frameworks need amendments on some of their sections to effectively prevent and control marine pollution. Different types of national legislations deal with the protection of the marine environment and the study showed that focus should specifically be directed to penalties and enforcement. Effective enforcement of legislation should be accompanied by an influential penalty.

A penalty should be imposed to serve a certain purpose such as deterrent, retribution, rehabilitation and restoration. Concerning marine pollution, a penalty should be imposed with an intention to deter future contravention. This is motivated by the delicacy nature of the marine environment and the possibility of an occurrence of irreparable harm due to marine pollution. This study has shown repeated incidents that harmed the marine environment, this is due to the existence of marine pollution legal framework's lack of deterrent value in respect of penalties that are imposed against perpetrators.

### **5.1.3. Regulatory and Institutional frameworks at the International and Regional levels**

Marine pollution governance by its very nature is fragmented. Thus, it lends itself to the intervention of multiple institutional frameworks viz international, regional, national and intergovernmental bodies. Chapter three of this composition provided a discussion on the existing regulatory and institutional frameworks on the international, regional and national levels that seek to regulate, control and prevent marine pollution.

#### **5.1.3.1. International Level**

##### **a) United Nations Convention on the Law of Sea (UNCLOS)**

This Convention presented itself as a ring leader of all the legal frameworks that regulate, control and prevent marine pollution. Under this Convention, a discussion was made with special focus on the EEZ as a concept that drew considerable attention over the years due to the emerging phenomenon of blue economy and the obvious reason of States being concerned about the good standing of their economy, thus investing their efforts in protecting same. Another focus was channeled to the issue on the protection and preservation of the marine environment as a result of the deteriorating status of the marine environment that continues to occur unabated despite the existence of the plethora of marine legal frameworks enacted to ensure protection and preservation of the same.

- **Economic Exclusive Zone (EEZ)**

The establishment of this concept is one of the commendable works that the international community should claim credit and praise. A move to allow coastal States to retain authority and jurisdiction within their EEZ to exploit and explore marine resources is the right step towards bolstering the economic stature of many States and combat the exploitation of mineral resources by States outside the EEZ.

Apart from the benefits alluded herein, this approach instilled a sense of responsibility on the States that enjoys jurisdiction of the EEZ. The State concerned has a duty to ensure the protection, preservation and conservation of marine resources within its EEZ. This is premised on the idea that the failure of the State to exercise its duty will strip off that State's opportunity to explore and exploit minerals because there is no opportunity to freely exploit and explore minerals outside of its EEZ. Of importance, the study demonstrated active involvement of the judiciary whenever a dispute pertaining to the EEZ ensues. On the whole, the EEZ initiative proved to be a successful project within the UNCLOS.

- **Protection and Preservation of the marine environment.**

Although this initiative looks good on paper, in practice it has generally failed to live to the expectations. This initiative was adopted to protect and preserve the marine environment. The study showed that none of its courses was achieved. On the one hand, it failed to protect the marine environment from marine environment stressors. This is premised on the fact that the marine environment continues to deteriorate in its existence. Marine environment stressors continue to torment the marine environment and lead to the migration of species that creates an imbalance within the marine ecosystem. On the other hand, it failed to preserve the marine environment. This is because marine species that used to exist in abundance have been flagged to be endangered species that are faced with possible extinction in the coming years.

*b) The 1992 United Nations Conference on Environment and Development (UNCED)*

This study dealt with UNCED in terms of Chapter 17 of Agenda 21. The chapter promotes sustainable development. Undoubtedly, how the marine environment is under immense pressure calls for a need to understand the importance and role of the concept of sustainable development. It is imperative to ensure the sustainability of the marine environment for the benefit of the current and future generations.

In the quest of achieving the same, UNCED introduced different programme areas *to wit* (a) integrated management and sustainable development of the coastal and marine areas, (b) marine environment protection, sustainable use of marine living resources of the high seas, (c) Sustainable use and conservation of marine living resources under national jurisdiction, (d) addressing critical uncertainties for the management of the marine environment and climate change, (e) strengthening international, including regional, cooperation and coordination and (f) sustainable development of Small Island Developing States (SIDS).

- **Integrated management and sustainable development of coastal areas, including exclusive economic zones**

It is clear that the coastal environment is under immense pressure around the world and South Africa is not an exception. This study has proved that South Africa came to the party in terms of managing the coast. South Africa has put measures in place to ensure proper regulation of the coast. It took heed to international calls that implored the States to control their coastal lands by crafting legislation that specifically deals with the management of the coast.

The said legislation is called NEM: ICMA. The existence of this Act did not stop South Africa to provide legislation that incidentally addresses the issue of coastal management. The legislation is called MLRA. This is one amongst other commendable acts that South Africa executed pertaining to the management of the coast. Another commendable approach adopted by South Africa was an act of conferring all the spheres of government with the responsibility of coastal management.

The National, Provincial and Municipal levels have been conferred with the responsibility to ensure proper management of the coast. If one takes a closer look at the coastal management of South Africa, one will realize that the issue of proper management of the coast was not trivialized and an impressive effort was invested in ensuring its protection and management. The majority of the sections in the legal framework promulgated to ensure proper regulation of the coast deserve to be applauded.

However, the same cannot be mentioned about the section dealing with penalties. As indicated above when dealing with the normative national and international framework, the issue of imposing maximum value on the penalty limits the effective regulation of the Act.

- **Sustainable use and conservation of marine living resources: High Seas and National Jurisdiction**

The increasing demand for the use of marine environment resources prompted the need to ensure sustainable use and conservation of marine living resources. This study showed that both the international and national levels are involved in ensuring the same. These spheres cooperate with each other. This is evidently deduced from a situation where the international body makes a submission that the national body must promulgate legal frameworks at the national level that promotes the sustainable use and conservation of marine environment resources and the national body acted in the affirmative.

In localizing this issue, MLRA deals with the issue of sustainable use and conservation of marine living resources in chapter 3. In this legislation, the issue of penalties is still a concern and as the majority of other legislation dealing with the protection of the marine environment, the penalty section is disastrous.

- **Climate Change on the management of the marine environment**

The study showed that climate change has placed itself as one of the marine environment stressors. It affects the marine environment by changing the sea surface and its salinity. It contributes immensely to ocean acidification. The effect

of climate change has a knock-on effect on the reproduction of marine species and the balance of the marine ecosystem. Due to the altered marine ecosystem, species migrate to different regions resulting in disturbance of the food chain and the possible extinction of other species. Although climate change is relatively new within marine stressors, there is a satisfactory deliberation pertaining to this issue with the intention to mitigate, manage and where possible eradicate its impending effects.

- **Small Island Development States (SIDS)**

The study examined issues relating to SIDS and found that they are suffering in the hands of the other developed States. The SIDS has limited access to resources due to their geographical location. They are heavily relying on inshore marine environment resources. Faced with the issue of limited resources, these States still have to bear the pain of seeing other States falling outside the SIDS exploiting their limited resources. Developed countries continue to exploit inshore marine resources and leave the SIDS prone to poverty. This is perpetuated by the lack of legal framework specifically drafted to protect the interest of the SIDS and their limited resources.

#### ***5.1.3.2. Regional Legal Frameworks***

This is where the study examined how different regions contained in this study deal with the protection of the marine environment from marine stressors. The study revealed that Africa, Europe, Asia and Latin America have common challenges pertaining to the marine environment. These regions suffer from the same marine environment stressors. Although these stressors may slightly differ in terms of the extent to which they adversely affect the marine environment, it has been established that marine pollution serves as the common denominator in terms of adversity.

In ensuring the protection of the marine environment, these Regions adopted the same approach. They all crafted regional legal framework intended to govern marine environment issues within their respective regions. The content of these legal frameworks is often guided by the circumstances faced by a specific region.

The study showed that these regions do not differ in material respect when coming to marine environment management or governance. They have all placed their hope and trust on the legal frameworks that they have crafted respectively to protect, conserve and preserve the marine environment. These regions align themselves with the pronouncements made by the international community.

The international community made a call for sustainable development and all these regions promote and foster sustainable use of marine resources for the benefit of the present and future generations.

In an attempt to localize the issue of marine governance or management, this study made it clear that Africa has an abundance of natural resources, however, the existence of these resources provides minimal benefits to the continent. This is due to the high rate of the exportation of African natural resources to developed countries. The African continent comprises many developing countries that lack funding to maintain the production facilities and infrastructure used to produce goods from raw materials. These are the crux for minimal beneficiation of Africa's natural resources by Africans. The exportation of Africa's natural resources has a knock-on effect on the economy of the African continent. With limited capacity to make the best out of Africa's natural resources, this continent could not afford to lose more benefits that do not need exportation to be solved.

Amongst other natural resources found in Africa, marine resources are included. This inclusion prompted the need to ensure the protection, preservation and conservation of the marine environment. Hence, Africa adopted the 2050 Africa's Integrated Strategy and the ACCNRR to ensure the same. With regard to the former initiative, the study revealed quite several reasons that should motivate this strategy to be a success. It was indicated that apart from the protection, conservation and preservation of the marine environment, this strategy is crafted to also honour all the lives that were lost in the ocean due to the slave trade, the search for a better life and many other incidents.

These incidents made the ocean part of the heritage of African people thus hold a sentimental value in their lives. It is against this backdrop that the former initiative is pressured to be a success to ensure that the lives lost in relation to the ocean are



honoured and their place of death is treated with dignity. The African people believe in the existence of a transcendental relationship between the living and the non-living. Thus, an implied obligation accompanied by the duty to ensure the jubilation of the non-living will be a positive driver to making this strategy a success.

The current researcher considers reflecting on the outcomes of the strategy at this point in time to be a premature act. This is premised on the fact that this strategy was adopted in 2014 and its goals are based on a long-term projection, being 2050. Currently, a decade has not yet passed since its advent and more than a decade is still remaining to its targeted period.

Concerning the latter initiative, the study showed that it views the ocean in the same vein as the former initiative. It provides that the natural resources of Africa are part of African heritage. Thus, the sustainability of the Continent's natural resources sits at the centre of this convention. This is in line with the anticipated achievements of the former initiative and other legal frameworks crafted by other regions indicated in this study. Of importance, the Convention did not disregard the importance of the Indigenous Knowledge Systems (IKS). The use of IKS is a step in the right direction for our forefathers used their knowledge to protect, conserve and preserve the marine resources that we have to this day.

Although the IKS can be effective in this quest, Scientific Knowledge (SK) can also enhance its effectiveness, thus, these two ought to be harmonized and used together. The harmonization of the IKS and SK promote the international community's call for co-operation between and amongst the States to protect the marine environment because in this context IKS is associated with African knowledge and SK is associated with Western knowledge.

The study has shown promotion of State cooperation where the Party States that are from Africa actively participating in the quest of protecting, conserving and preserving marine environment within the European Community.

#### **5.1.4. Inter-governmental and Non-governmental bodies in Protecting Marine Environment**

This composition showed that inter-governmental and non-governmental bodies equally play an important role in protecting the marine environment from its stressors. These bodies, like other legal frameworks, advocate for the sustainable use of marine resources and seek to protect the marine environment from marine pollution. IOC, UNEP and GESAMP highlighted the need to ensure capacity building and promotion of academic research in this field because it will sharpen the current understanding of the marine field. It is through better understanding that protection, prevention, conservation and preservation of the marine environment and its resources can be achieved.

In South Africa, both intergovernmental bodies and non-governmental bodies actively played a role in ensuring that the marine environment is protected. Although IMOrg is yet to prove its effectiveness and reliability due to the non-occurrence of the oil spills at a national level. The study showed that since the existence of IMOrg only Tier 1 incidents took place. This type of incident can be handled by the local government without any intervention from the national government. Be that as it may, the establishment of this body is commendable.

With the emergence of the concept of blue economy and climate change that affects the marine environment. The former President of the Republic of South Africa Jacob Zuma uttered the following:

If all sectors implement the measures to fight climate change at the same time, together we can build the biggest mitigation buffer against climate change. We can save our country and the world for future generations. Our economy will become resilient to the possible effects of climate change only when we take bold steps like the reduction of emission of carbon

dioxide and other gases that lead to increasing global temperatures.<sup>467</sup>

Although the study has shown that in terms of the Blue economy, Operation Phakisa did not do well, and the same cannot be said about the protection of the marine environment. This operation promoted and advocated for the good governance of marine pollution control and marine environment protection. Thus, its establishment played an important role in the field of marine.

The study showed that the Trash Bash Campaign has afforded South African citizens to demonstrate active citizenry by engaging in voluntary work that involves cleaning the beaches and reducing the high volume of littering in the ocean. All the achievements accomplished by the Trash Bash Campaign are impressive and have played an important role in curbing or mitigating the acceleration of marine pollution from land-based activities. The rate at which the Trash Bash Campaign was gaining popularity and awareness before the Coronavirus pandemic (Covid 19), was satisfactory.

Although the Covid 19 pandemic halted the Trash Bash Campaign, all the activities taking place at the beaches were also put to a halt due to the lockdown regulations. This temporarily eased the accelerated marine pollution catastrophe. It is worth noting that, within the context of this study, the current pandemic proved to be one of curate's eggs. In appreciating and acknowledging the distress it caused to human beings and the plight currently faced by humans *to wit* death of family members, loss of employment, liquidation of companies and many other disquieting issues, the pandemic reduced, mitigated or deferred the plight that has been faced by the marine environment for many years.

The current researcher deliberately used the word "defer" because the pandemic may strike skepticism on the Trash Bash Campaign participants in terms of continuing to take part due to the fear of contracting the virus. It is against this

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<sup>467</sup> Zuma 2014 <https://www.gov.za/address-president-jacob-zuma-launch-operation-phakisa-big-fast-results-implementation-methodology> (Accessed on 14/11/2020).

backdrop that the current researcher anticipates a probable skyrocketing of the marine pollution rate upon the suspension of lockdown regulations.

Given the current legislation regulating marine pollution and protecting the marine environment, their compromised penalties render marine environmental damage imminent and inevitable. In an attempt to avert the much-anticipated marine environmental damage and in the quest of ensuring marine pollution control, marine environment protection, conservation and preservation of marine resources, the current researcher makes the following recommendations hereunder.

## **5.2. RECOMMENDATIONS**

The following recommendations are made in this study:

### **5.2.1 Amendment of legislation protecting the marine environment and preventing marine pollution in South Africa.**

This study dealt with the legal frameworks that regulate marine pollution and advocate for the protection of the marine environment in the national and international sphere. It was found that there is still a lack of research in this field, however, the existing contributions are good. As good as they are, the current author made a finding that these contributions concentrated more on a diagnosis. They have correctly diagnosed the problems faced by the marine environment. Unfortunately, a diagnosis without a cure cannot be a solution to the marine environment.

It is against this backdrop that the current researcher endeavours to find a cure to the marine environment problem by recommending amendments to legislations that regulate marine pollution and advocate for the protection of the marine environment. The current author advises against the repealing of these legislation. Legislators are advised to do an overhaul on these legislations and prioritize the enforcement section because the implementation of these legislations lies in this section. It is absolutely necessary to ensure that national legislations impose penalties that have a deterrent value on perpetrators. Thus far, the study showed discrepancies that

are contained in these legislations and the current author recommends the following amendments in remedying same.

#### **5.2.1.1 Do away with fines that set out a maximum value.**

It is important to do away with a maximum value when imposing a fine to allow the court to impose a penalty that is commensurate to the damage caused by perpetrators. The complexity allied to a maximum value on penalties is heightened by the coming into effect of these legislations. The majority of these legislations were drafted a long time ago and they never got revised. The probability that at the time of the commencement of these legislations, the maximum value impose was a deterrent in nature, cannot be disputed, however, failure to revise it and keep it abreast with the changing time has rendered its existence less of a deterrent. Thus, it is imperative to make amendments to this type of legislation.

The current researcher refers the reader to Section 3A (4) of the Marine Pollution Act. This legislation stipulates that “[a]ny person convicted of an offence under subsection (1) shall be liable to a fine not exceeding R500 000, or to imprisonment for a period not exceeding five years or to such a fine as well as such imprisonment”. It cannot be farfetched to infer that in 1986, R500 000.00 had more value than it currently has. This amount has been set as a maximum value for a fine for the past 3 decades without being revised or amended to have a deterrent value. This effectively limits the judiciary to impose penalties they deem fair and just. If the perpetrator causes damage that warrants a fine exceeding R500 000.00, the court will not be able to impose such a fine due to the existing prescribed maximum value set out by the Act. In this case, it becomes immaterial whether the court deems it fit that a fine exceeding R500 000, 00 will be fair and just under the circumstance.

This move will provide the courts with a leeway to impose fines that are commensurate with the damage caused. This will obviate the propensity of marine environmental damage caused by both natural persons and juristic persons with lucrative income from their dealings who finds a maximum value imposed by legislation to be little, thus, rendering the entire legislation ineffective on them. The

entire legislation will be rendered ineffective in the sense that it will not be able to deter future contravention by those people due to their affordability means on the maximum fine imposed by the legislation.

Hence, the courts must impose fines that justify the damage caused by the perpetrator. In the imposition of these fines, fairness and deterrence must be used as the standard practice. Hence the following factors for the imposition of fines are set out and discussed as follows:

**i) The circumstances of the offender.**

A one size fits all approach is not fit for purpose in these circumstances. The court must conduct thorough research in respect of the person whom it intends to impose a fine. It is common knowledge that marine space provides a myriad of activities. Thus, both natural persons and juristic persons are connected to these activities. These persons are involved in different dealings that can produce different extents of damage to the marine environment. It is against this backdrop that the court should understand the perpetrators when imposing fines to ensure that it impose a fine that is deterrent in nature, fair, effective and realizable. The nature of the perpetrator's dealing must be scrutinized to determine the likelihood of repetition of the same conduct. The more the chances of repeating the same offence the more amount of fines should be imposed.

**ii) The extent of the damage caused by the perpetrator**

The extent of the damage caused by the perpetrator is important. The approach should be that, the graver the damage, the heavier the imposition of a fine. This approach should however be employed after careful consideration of the following:

- Whether the damage caused by the perpetrator caused irreparable harm to the environment or not and
- Whether the damage caused, can be rehabilitated, if it can, what are the costs involved thereof.

### **iii) The attitude or disposition of the offender at the time of the contravention**

If the offender knew that there is a possibility that damage may occur as a result of his/her actions and reconciles himself/herself with that possibility, the court should construe that as being reckless and sanction that reckless behaviour.

#### **5.2.1.2 Upon contravention of the Act, when a fine is imposed, use the currency of the perpetrators and not that of the aggrieved states**

Using the aggrieved states' currency can be ineffective in deterring future contravention. The marine environment is used for different activities including transportation of goods from different countries around the world. These countries differ in currencies and their strength against one another also differs. If a perpetrator's currency is stronger than that of the aggrieved party, the perpetrator is likely not to be deterred from contravening the Act in future. This is premised on the fact that the imposed fine against the perpetrators will not be causing severe damage to their coffers due to the conversion of currencies between and/or amongst the states.

Currently, the ongoing pandemic has harmed the economy in most parts of the world. This may take several years for other countries to recover from the harm caused by the pandemic and it is expected that all these countries recover neither at the same time nor at the same pace. Thus, insisting on the current approach will have an adverse effect on the aggrieved states, especially if the Rand conversion of the perpetrator is much stronger than that of the aggrieved state. It is against this backdrop that the adoption of this approach becomes imperative.

#### **5.2.1.3 Addition of a section to the legislation that deals with public awareness and education pertaining to marine pollution**

The study has shown an improvement in awareness pertaining to marine pollution. However, such awareness is predominantly around cities that are close to the sea. The awareness must be extended to other cities and provinces afar from the sea. This can be achieved by compelling municipalities at a local level, using legislation,

to have a team that is dedicated to teaching the public about the importance of the protection of the marine environment.

Different methods can be employed to execute this task such as schools, colleges and universities visits, distribution of flyers and advertisements on televisions and radios (both national and community platforms) to promote public awareness pertaining to the importance of marine pollution. This initiative may not only reduce marine pollution but also trigger research interest in this field.

It is apparent from this study that the current situation compels everyone to appreciate and understand the intertwined relationship existing between the marine environment and sustainable development. This is premised on the fact that the marine environment needs to be sustainable to continue playing its important role. Thus, the promotion of the notion of sustainable development in the marine field is essential and can be realized if a positive attitude is invested towards education and public awareness with respect to issues involving the marine field.

### **5.2.2. Proposed amendments**

The study showed that there is no need to repeal the existing legislations that currently prevent marine pollution and protects the marine environment from harm. Amending some of the sections in these legislations will be sufficient to solve the problem faced by the marine environment. In this study, the Marine Pollution Act and the Marine Living Resources Act are two pieces of legislation that contain sections that deal with the imposition of a fine. Thus, the amendments will be demonstrated using these two legislations. The demonstration shall be crafted in such a way that allows the reader to understand what the current author believes it ought to be omitted, and that which is ought to be inserted, to have legislation that can properly prevent the acceleration of marine pollution and protect the marine environment.

The current researcher recommends the amendment of Section 3(2) (b) and Section 3A (4) of the Marine Pollution Act respectively. These two sections relate to the imposition of a fine upon contravention of the Act. It is also recommended that Section 6(a) (iii) of the Marine Living Resources Act that deals with management



planning be amended. This section ought to include issues relating to public awareness of marine pollution.

It is also recommended that Section 58(1) (b), Section 58(2) (b), Section 58(3) (b) and Section 58(4) of the same Act dealing with the imposition of a fine upon the contravention of the Act be amended.

## **MARINE POLLUTION AMENDMENT BILL**

### **GENERAL EXPLANATORY NOTE:**

[            ]            Words in bold type and in square brackets, indicate omissions from existing enactments.

\_\_\_\_\_            Words underlined with a solid line indicate insertions in existing enactment.

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### **BILL**

**To amend Marine Pollution Act, 1986, so as to further regulate offences and penalties in terms of the Act; and to provide for matters connected therewith.**

**PARLIAMENT** of the Republic of South Africa enacts as follows:

#### **Amendment of section 3 of Act 2 of 1986**

1. Section 3 of Marine Pollution Act, is hereby amended as follows:

Regulations- (2) Regulations made under subsection (1) may- (b) prescribe, for any contravention thereof or failure to comply therewith, penalties **[not exceeding the maximum penalties]** as prescribed by section 3A (4).

#### **Amendment of section 3A of Act 2 of 1986**

2. Section 3A of Marine Pollution Act, is hereby amended as follows:

Offences and penalties- (4) any person convicted of an offence under subsection (1) shall be liable to a fine **[not exceeding R500 000]** as imposed by the court, using the offender's currency, after taking into account the following factors:

- (a) The circumstances of the offender;
- (b) The extent of the damage caused by the offender and
- (c) The attitude or disposition of the offender at the time of the contravention, or to imprisonment for a period not exceeding five years or to such fine as well as such imprisonment.

## MARINE LIVING RESOURCE AMENDMENT BILL

### GENERAL EXPLANATORY NOTE:

[            ]            Words in bold type and in square brackets, indicate omissions from existing enactments.

\_\_\_\_\_            Words underlined with a solid line indicate insertions in existing enactment.

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### BILL

To amend Marine Living Resource Act, 1998, so as to further regulate campaigns and advertisements relating to public awareness of marine; further to regulate offences and penalties in terms of the Act; and to provide for matters connected therewith.

**PARLIAMENT** of the Republic of South Africa enacts as follows:

**Amendment of section 6 of Act 18 of 1998**

1. Section 6 of Marine Pollution Act, is hereby amended as follows:

The Forum shall advise the Minister on any matter- (a) referred to it by him or her, and in particular - (iii) the establishment of committees at local municipalities for the purpose of teaching the public about the importance of protecting marine environment through public awareness campaigns and advertisements [and], amendment of operational management procedures and [including] management plans.

**Amendment of Section 58 (1) (b), 58 (2) (b), 58 (3) and 58(4) of Act 18 of 1998**

2. Section 3A of Marine Pollution Act, is hereby amended as follows:

58. (1) Any person who, subject to the provisions of subsections (2) or (3)- (b) contravenes any other provision of this Act, shall be guilty of an offence and liable on conviction to a fine **[not exceeding two million rand]** as imposed by the court, using the offender's currency, after taking into account the following factors:

- a) The circumstances of the offender;
- b) The extent of the damage caused by the offender and
- c) The attitude or disposition of the offender at the time of the contravention, or to imprisonment for a period not exceeding five years.

(2) Any person who contravenes- (b) the conditions imposed in a high seas fishing permit or high seas fishing vessel licence, shall be guilty of an offence and liable on conviction to a fine **[not exceeding three million rand]** as imposed by the court, using the offender's currency, after taking into account the following factors:

- (a) The circumstances of the offender;
- (b) The extent of the damage caused by the offender and

(c) The attitude or disposition of the offender at the time of the contravention.

(3) Any person who contravenes a provision of section 39(5), 45, 47, 48 or 49 shall be guilty of an offence and liable on conviction to a fine **[not exceeding five million rand]** as imposed by the court, using the offender's currency, after taking into account the following factors:

(a) The circumstances of the offender;

(b) The extent of the damage caused by the offender and

(c) The attitude or disposition of the offender at the time of the contravention.

(4) A regulation made under this Act may provide that a person who contravenes or fails to comply with a provision thereof, shall be guilty of an offence and liable on conviction to a fine as imposed by the court, using the offender's currency, after taking into account the following factors:

(a) The circumstances of the offender;

(b) The extent of the damage caused by the offender and

(c) The attitude or disposition of the offender at the time of the contravention or to imprisonment for a period not exceeding two years.

## BIBLIOGRAPHY

### Literature

Adam and Odoeme *Law and Practice of Oil Spillage Laws in Nigeria*

Adam SM & Odoeme V *Law and Practice of Oil Spillage Laws in Nigeria* (Jos: Global Links Resources Nig. Ltd., 2014)

Adam *Compensation for Environmental Liability in Nigeria: Law and Practice*

Adam SM *Compensation for Environmental Liability in Nigeria: Law and Practice* (Jos: Global Links Resources Nig. Ltd, 2016)

Adler 2000 *Faculty Publications*

Adler H "The Cartagena Protocol and Biological Diversity: Biosafe or Bio Sorry?" 2000 *Faculty Publications* 761-777

Akiwumi and Melvasalo 1998 *Marine Policy*

Akiwumi and Melvasalo "UNEP's Regional Seas Programme: approach, experience and future plans" 1998 *Marine Policy* 229-234

Akpomera 2020 *Review of African Political Economy* 651-661

Akpomera E "Africa's Blue Economy: potentials and challenges for more locally beneficial development" 2020 *Review of African Political Economy* 651-661

Andrews *Managing the Environment, Managing Ourselves: A History of American Environmental Policy*

Andrews NL *Managing the Environment, Managing Ourselves: A History of American Environmental Policy* (Yale University Press 2006)

Atken 2006 *Mediterranean Environment*

Atken N "Shipping accidents: a serious threat for marine environment" 2006 *Mediterranean Environment* 269-304

Arif and Karim 2013 *Macquarie Journal of International and Comparative Environmental Law*

Arif AA and Karim MD "Marine pollution and the South Asian coastal states: A legal appraisal" 2013 *Macquarie Journal of International and Comparative Environmental Law* 1-23

Azarian 2011 *International Journal of Humanities and Social Science*

Azarian R "Potentials and Limitations of Comparative Method in Social Science" 2011 *International Journal of Humanities and Social Science* 113-125

Bailey 1983 *Louisiana Law Review*

Bailey JE "Introduction" 1983 *Louisiana Law Review* 1140-1142

Bapela *Legal Analysis of the Prohibition of Marine Pollution*

Bapela MP A Legal Analysis of the Prohibition of Marine Pollution (LLM-thesis University of Limpopo 2016)

Barnes-Dabban and Karlsson-Vinkhuyzen 2018 *Int Environ Agreements*

Barnes-Dabban H and Karlsson-Vinkhuyzen S "The influence of the Regional Coordinating Unit of the Abidjan Convention: implementing multilateral environmental agreements to prevent shipping pollution in West and Central Africa" 2018 *Int Environ Agreements* 469-489

Barrett et al 2018 *Am J Crim Just*

Barrett K et al "Monetary Penalties and Noncompliance with Environmental Laws: a Mediation Analysis" 2018 *Am J Crim Just* 530-550

Bernard and Titov 2015 *Phil. Trans. R. Soc.*

Bernard E and Titov V "Evolution of tsunami warning systems and products" 2015 *Phil. Trans. R. Soc.* 1-14

Bruchac, 2014 *Encyclopaedia of Global Archaeology*

Bruchac, M "Decolonization in Archaeological Theory" 2014 *Encyclopedia of Global Archaeology* 2069-2077

Buszynski and Roberts *The South China Sea Maritime Dispute Political, Legal and Regional Perspectives*

Buszynski L and Roberts CB *The South China Sea Maritime Dispute Political, Legal and Regional Perspectives* (Routledge 2016)

Calvao, Pessoa and Lidon 2013 *Emir. J. Food Agric*

Calvao T, Pessoa M and Lidon F "Impact of human activities on coastal vegetation - A review" 2013 *Emir. J. Food Agric.* 926-944

Chetty 2015 *Legal measures for the prevention of oil pollution by ships and civil liability for oil pollution damage in South African marine and coastal waters*

Chetty S *Legal measures for the prevention of oil pollution by ships and civil liability for oil pollution damage in South African marine and coastal waters* (LLM-dissertation University of Cape Town 2015)

Cochrane et al 2017 *South Africa and the Responsible Fisheries Alliance*

Cochrane KL et al "Informing effective policies for responsible marine fisheries in South Africa" 2017 *South Africa and the Responsible Fisheries Alliance* 1-51

Diana 2009 *Bio Science*

Diana JS "Aquaculture Production and Biodiversity Conservation" 2009 *Bio Science* 27-38

De Castro 2012 *Pacific Focus Inha Journal of International Law*

De Castro RC "The Risk of Applying Realpolitik in Resolving the South China Sea Dispute: Implications on Regional Security" 2012 *Pacific Focus Inha Journal of International Law* 262-289

Di Vaio and Varriale 2018 *Sustainability*

Di Vaio A & Varriale L "Management Innovation for Environmental Sustainability in Seaports: Managerial Accounting Instruments and Training for Competitive Green Ports beyond the Regulations" 2018 *Sustainability* 1-35

Doney et al 2012 *Annual Review of Marine Science*

Doney SC et al "Climate Change Impacts on Marine Ecosystems" 2012 *Annual Review of Marine Science* 11-37

Dorius and Lawrence-Dill 2018 *Biotechnology in Agriculture and the Food Chain*

Dorius SF and Lawrence-Dill CJ "Sowing the seeds of skepticism: Russian state news and anti-GMO sentiment" 2018 *Biotechnology in Agriculture and the Food Chain* 55-58

Du Plessis and Alberts 2014 *Southern African Public Law*

Du Plessis A and Alberts R "Cooperative environmental governance: At the coalface of sustainable infrastructure development in South Africa" 2014 *Southern African Public Law* 442-468

Ebaya 2009 *African Journal of Political Science and International Relations*

Ebaya EN "Regimes as mechanisms for social order in international relation" 2009 *African Journal of Political Science and International Relations* 117-121

Ehlers 2000 *15 Int'l J. Marine & Coastal L.*

Ehlers P "The Intergovernmental Oceanographic Commission: An International Organisation for the Promotion of Marine Research" 2000 *15 Int'l J. Marine & Coastal L.* 533- 554

El-Sabh, Demers and Lafontaine 1998 *Ocean Coast. Manage*

El-Sabh M, Demers S and Lafontaine D "Coastal management and sustainable development: From Stockholm to Rimouski" 1998 *Ocean Coast. Manage* 1-24

Eto 1997 *Toxicological Pathology*

Eto K (1997) "Pathology of Minamata Disease, National Institute for Minamata Disease, Environmental Agency" 1997 *Toxicological Pathology* 614-623



Feris 2013 *PER Journal*

Feris L “A Customary Right to Fish When Fish are Sparse: Managing Conflicting Claims Between Customary Rights and Environmental Rights” 2013 *PER Journal* 555-614

Galgani et al 2019 *Front. Mar. Sci.*

Galgani L et al “Impacts of Marine Litter” 2019 *Front. Mar. Sci.* 1-4

Gallo and Tosti 2016 *J Marine Sci Res Dev*

Gallo A and Tosti E “Adverse Effect of Ocean Acidification on Marine Organisms” 2016 *J Marine Sci Res Dev* 1-2

Gelcich et al. 2014 *Proceedings of the National Academy of Sciences*

Gelcich S et al. “Public awareness, concerns, and priorities about anthropogenic impacts on marine environments” 2014 *Proceedings of the National Academy of Sciences* 1-6

Ghina 2003 *Environment, Development and Sustainability*

Ghina F “Sustainable Development in Small Island Developing States: The Case of the Maldives” 2003 *Environment, Development and Sustainability* 139–165

Glass 2000 *J. Int'l L. & Bus.* 491

Glass JA “Merits of Ratifying and Implementing the Cartagena Protocol on Biosafety” 2000 *J. Int'l L. & Bus.* 491-518

Gray 1990 *Envtl. L*

Gray “The United Nations Environment Programme: An Assessment” 1990 *Envtl. L* 291-319

Grilli et al 2019 *Ocean and Coastal Management*

Grilli et al N “Integrated science for coastal management: Discussion on a local empirical basis” 2019 *Ocean and Coastal Management* 219-228

Grip 2017 *Ambio*

Grip K "International Marine Environment Governance: A review" 2017 *Ambio* 413-427

Guardiola et al 2012 *Int. J. Mol. Sci.*

Guardiola FA et al "Risks of Using Antifouling Biocides in Aquaculture" 2012 *Int. J. Mol. Sci.* 1541-1560

Gullet 1997 *Environmental and Planning Law Journal*

Gullett W "Environmental protection and the precautionary principle: a response to scientific uncertainty in environmental management" 1997 *Environmental and Planning Law Journal* 52-69.

Gullett 2013 *The University of Tasmania Law Review*

Gullett W "Legislative implementation of the law of the sea convention in Australia" 2013 *The University of Tasmania Law Review* 184-207

Harden-Davies 2016 *Marine Policy*

Harden-Davies H "Marine science and technology transfer: Can the Intergovernmental Oceanographic Commission advance governance of biodiversity beyond national jurisdiction?" 2016 *Marine Policy* 260-267

Hardy 1973 *Nat. Resources J*

Hardy M "The United Nations Environment Programme" 1973 *Nat. Resources J* 236-254

Harrould-Kolieb, Hirshfield and Brosius 2009 *Oceana Protecting the World's Ocean*

Harrould-Kolieb E, Hirshfield M and Brosius A "Major Emitters among Hardest Hit by Ocean Acidification: An Analysis of the Impacts of Acidification on the Countries of the World" 2009 *Oceana Protecting the World's Ocean* 1-11

Hilderling, Keessen and Van Rijswijk 2009 *Utrecht Law Review*

Hilderling, Keessen and Van Rijswijk "Tackling pollution of the Mediterranean Sea from land-based sources by an integrated ecosystem approach and the use of the

combined international and European legal regimes” 2009 *Utrecht Law Review* 80-100

Hisschemöller and Gupta 1999 *International Political Science Review*

Hisschemöller M and Gupta J “Problem-Solving Through International Environmental Agreements: The Issue of Regime Effectiveness” 1999 *International Political Science Review* 151-173

Hong The *Relationship Between Well-Structured and Ill-Structured Problem Solving in Multimedia Simulation*

Hong M the *Relationship Between Well-Structured and Ill-Structured Problem Solving in Multimedia Simulation* (LLD-dissertation Pennsylvania State University 1998)

Hugo 2014 *Administrative penalties as a tool for resolving South Africa’s environmental compliance and enforcement woes*

Hugo R *Administrative penalties as a tool for resolving South Africa’s environmental compliance and enforcement woes* (LLM-dissertation University of Cape Town 2014)

Islam 2004 *Marine Pollution Bulletin*

Islam MD “Impacts of pollution on coastal and marine ecosystems including coastal and marine fisheries and approach for management: A review and synthesis” 2015 *Marine Pollution Bulletin* 624-649

Ivanova 2012 *Oxford Journals University Press*

Ivanova M “Rio+20 and the global environment: reflections on theory and practice” 2012 *Oxford Journals University Press* 565-584

Jauhari et al 2018 *International Journal of GEOMATE*

Jauhari A et al “Fish Catch Quota Assessment for Sustainable Marine Fisheries Resources in East Java” 2018 *International Journal of GEOMATE* 38-44

Kanase and Singh 2018 *J Med Sci*

Kanase H and Singh K "Marine Pharmacology: Potential, Challenges, and Future in India" 2018 *J Med Sci* 49-53

Kindt 1984 *Catholic University Law Review*

Kindt "Solid Wastes and Marine Pollution" 1984 *Catholic University Law Review* 37-100

Koh 1983 *46 Law and Contemporary Problems*

Koh TB "The Third United Nations Conference on the Law of the Sea: What Was Accomplished?" 1983 *46 Law and Contemporary Problems* 5-10

Koning 2002 *Journal of Contingencies and Crisis Management*

Koning C "Coastal Oil Spill: Apollo Sea Shipping Disaster - June 1994" 2002 *Journal of Contingencies and Crisis Management* 118-122

Krasner 1982 *International Organization*

Krasner D 1982 "Structural causes and regime consequences: regimes as intervening variables" 1982 *International regime* 185-205.

Lawson 2017 *The doctrine of absolute liability and the right to a safe environment: issues and challenges in the liability of environmental polluters in Nigeria*

Lawson NG *The doctrine of absolute liability and the right to a safe environment: issues and challenges in the liability of environmental polluters in Nigeria* (LLD-dissertation University of Wolverhampton 2017)

Lombard et al. 2019 *Frontiers in Marine Science*

Lombard TA et al. "Practical Approaches and Advances in Spatial Tools to Achieve Multi-Objective Marine Spatial Planning" 2019 *Frontiers in Marine Science* 1-9

Malanson 2014 *Progress in Physical Geography*

Malanson G "Physical geography on the methodological fence: David Stoddart (1965) Geography and the ecological approach: The ecosystem as a geographic principle and method" 2014 *Progress in Physical Geography* 251–258

Maluleke 2018 *Rethinking Protected Area Co-Management in Region, South Africa*

Maluleke *Rethinking Protected Area Co-Management in Region, South Africa* (LLD-dissertation University of Stellenbosch 2018)

Malve 2016 *J Pharm Bioallied Sci.*

Malve H 2016 "Exploring the ocean for new drug developments: Marine pharmacology" *J Pharm Bioallied Sci.* 83-91

Michaels Oxford *Handbook of Comparative law*

Michaels R Oxford *Handbook of Comparative law 1<sup>st</sup> ed* (Oxford University Press 2006)

Mossop 2018 *VUWLR*

Mossop J "Can We Make the Oceans Greener? The Successes and Failures of Unclos as an Environmental Treaty" 2018 *VUWLR* 573-594

Moldan et al 1985 *Marine Pollution Bulletin*

Moldan A et al "Some aspects of the Castillo de Bellver oil spill" 1985 *Marine Pollution Bulletin* 97-102

Moltmann et al 2019 *Front. Mar. Sci.*

Moltmann et al T "Ocean Fair Data Service" 2019 *Front. Mar. Sci.* 1-17

Monyamane and Bapela 2019 *Potchefstroom Electronic Journal*

Monyamane PL and Bapela MP "Gongqose v Minister of Agriculture, Forestry and Fisheries – A Tale of Customary Rituals and Practices in Marine Protected Areas" 2019 *Potchefstroom Electronic Journal* 1-17

Muir 2014 *An interpretation of the South African Constitutional 'Environmental Right' (Section 24 of the Constitution of the Republic of South Africa, 1996) and an Assessment of its relationship to Sustainable Development*

Muir A *An interpretation of the South African Constitutional 'Environmental Right' (Section 24 of the Constitution of the Republic of South Africa, 1996) and an*

*Assessment of its relationship to Sustainable Development* (LLM-dissertation University of Kwazulu-Natal 2014)

Nabileyo *The Polluter Pays Principle and Environmental Liability in South Africa*

Nabileyo O *The Polluter Pays Principle And Environmental Liability In South Africa* (North-West University, Potchefstroom Campus, 2009)

Naidoo 2015 *Should seas have standing? A critical study of plastic marine debris and pollution laws in international and South African law*

Naidoo R *Should seas have standing? A critical study of plastic marine debris and pollution laws in international and South African law* (LLM-mini-dissertation University of Kwazulu-Natal 2015)

Nagle 2009 *UCDAVIS LAW REVIEW*

Nagle J "The idea of Pollution" 2009 *UCDAVIS LAW REVIEW* 1-78

Neumann, Ott and Kenchington 2017 *Sustain Scie*

Neumann B, Ott K and Kenchington R "Strong sustainability in coastal areas: a conceptual interpretation of SDG 14" 2017 *Sustain Scie* 1019-1035

Noriyuki 2006 *JMAJ Volume*

Noriyuki H "*The History and The Present of Minamata Disease: Entering the second half a century*" 2006 *JMAJ Volume* 112-118

Odeku and Bapela 2017 *Environmental Economics*

Odeku KO and Bapela MP "Prohibition of pollution of marine environments: challenges and prospects" 2017 *Environmental Economics* 127-136

O'Donoghue and Marshall 2003 *South African Journal of Science*

O'Donoghue SO and Marshall DJ "Marine pollution research in South Africa: a status report" 2003 *South African Journal of Science* 349-356

Onwuegbuchunam et al 2017 *American Journal of Traffic and Transportation Engineering*

Onwuegbuchunam E et al "Framework for Management and Control of Marine Pollution in Nigeria Seaports" 2017 *American Journal of Traffic and Transportation Engineering* 59-66

Oyebode et al 2016 *Health Policy and Planning*

Oyebode O et al "Use of traditional medicine in middle-income countries: a WHO-SAGE study" 2016 *Health Policy and Planning* 984-991

Oyende 2012 *An appraisal of the law relating to oil pollution in the inland, territorial and maritime waters of Nigeria*

Oyende K *An appraisal of the law relating to oil pollution in the inland, territorial and maritime waters of Nigeria* (LLD- dissertation University of Kwazulu-Natal 2012)

Pavasovic 1996 *Ocean & Coastal Management*

Pavasovic A "The Mediterranean Action Plan Phase II and the revised Barcelona Convention: new prospective for integrated coastal management in the Mediterranean region" 1996 *Ocean & Coastal Management* 133-182

Pendleton et al 2018 *CES Journal of Marine Science*

Pendleton et al "Debating the effectiveness of marine protected areas" 2018 *CES Journal of Marine Science* 1156-1159

Pickvance 2005 *Journal of Housing and the Built Environment*

Pickvance C "The four varieties of comparative analysis: the case of environmental regulation" 2005 *Journal of Housing and the Built Environment* 7-28

Piroddi et al 2017 *Scientific Report*

Piroddi C et al "Historical changes of the Mediterranean Sea ecosystem: modelling the role and impact of primary productivity and fisheries changes over time" 2017 *Scientific Report* 1-18

Pradhan et al 2017 *Earth's Future*

Pradhan P et al "A Systematic Study of Sustainable Development Goal (SDG) Interactions" 2017 *Earth's Future* 1169-1179

Quesada, Klenke and Mejía-Ortiz 2018 *Sustainability Journal*

Quesada, Klenke and Mejía-Ortiz "Regulatory Challenges in Realizing Integrated Coastal Management-Lessons from Germany, Costa Rica, Mexico and South Africa" 2018 *Sustainability Journal* 1-21

Randrianantenaina *Maritime Piracy and Armed Robbery against ships: Exploring the Legal and the Operational Solutions*

Randrianantenaina JE *Maritime Piracy and Armed Robbery against ships: Exploring the Legal and the Operational Solutions* (The United Nations-Nippon Foundation Fellowship Programme 2012 – 2013)

Raubenheimer 2016 *Towards an improved framework to prevent marine plastic debris*

Raubenheimer K *Towards an improved framework to prevent marine plastic debris* (LLD-dissertation University of Wollongong 2016)

Romppanen 2010 *Nordic Environmental Law Journal*

Romppanen S "Reflections on environmental responsibility – with an emphasis on the Nord Stream pipeline in the Baltic Sea area" 2010 *Nordic Environmental Law Journal* 1-38

Ryan et al 2018 *Environmental Pollution*

Ryan P et al "Environmental Pollution Consistent patterns of debris on South African beaches indicate that industrial pellets and other mesoplastic items mostly derive from local sources" 2018 *Environmental Pollution*

Schiffman 2001 *International Law and Institutions*

Schiffman H "International Law and the Protection of the Marine Environment" 2001 *International Law and Institutions*



Semionov 2018 *World Journal of Neuroscience*

Semionov A "Minamata Disease Review" 2018 *World Journal of Neuroscience* 178-184

Sibanda *Human Rights and the Environment under African Union Law*

Sibanda OS *Human Rights and the Environment under African Union Law* (Palgrave Macmillan, Cham 2020)

Sharmila and Narayanan 2017 *Int J Pharma Bio Sci*

Sharmila KJ and Narayanan R "Oceanic Primary Production and Marine Water Quality Assesment around Chennai Coast" 2017 *Int J Pharma Bio Sci* 247-265

Song and Tonnesson 2013 *Ocean Development & International Law*

Song Y and Tonnesson S "The Impact of the Law of the Sea Convention on Conflict and Conflict Management in the South China Sea" 2013 *Ocean Development & International Law* 235-269

Soto 1996 3 *ILSA J. Int'l & Comp. L.*

Soto M "General Principles Of International Environmental Law" 1996 3 *ILSA J. Int'l & Comp. L.* 194-207

Sustein 2003 *The University of Pennysylvania Law Review*

Sustein R "Beyond the Precautionary Principle" 2003 *The University of Pennysylvania Law Review* 1003-1058

Taljaard, Monteiro and Botes 2006 *Water SA*

Taljaard S, Monteiro PMS and Botes WAB "A structured ecosystem-scale approach to marine water quality management" 2006 *Water SA* 535-542

Tanaka 2006 *Heidelberg Journal of International Law*

Tanaka Y "Regulation of land-based marine pollution in international law: a comparative analysis between global and regional legal frameworks" 2006 *Heidelberg Journal of International Law* 535-574

Tanaka 2011 *ZaöRV*

Tanaka Y “The Changing Approaches to Conservation of Marine Living Resources in International Law” 2011 *ZaöRV* 291-330

Thornton et al 2001 *II C Consultants Ltd*

Thornton et al “Pollutants in Urban Waste Water and Sewage Sludge” 2001 *II C Consultants Ltd*

Trudgill 2007 *Progress in Physical Geography*

Trudgill S “Classics in physical geography revisited” 2007 *Progress in Physical Geography* 517–522

Walker 2015 *Canada-United States Law Journal*

Walker Q “The Boundary Water Treaty 1909 -- A Peace Treaty?” 2015 *Canada-United States Law Journal* 171-186

Walker *Definitions for the Law of the Sea: Terms Not Defined by the 1982 Convention*

Walker G *Definitions for the Law of the Sea: Terms Not Defined by the 1982 Convention* 1<sup>st</sup> ed (Martinus Nijhoff 2012).

Weiss 1993 *Geo. L.J.*

Weiss E “International Environmental Law: Contemporary Issues and the Emergence of a New World Order” 1993 *Geo. L.J.* 675 - 710

Wessels 2019 *Fundamina*

Wessels B “Legal and Public Policy Considerations that Justify Legislative Development of the Law Of Delict” 2019 *Fundamina* 199-255

Wijffels 2008 *Biotechnol*

Wijffels RH “Potential of sponges and microalgae for marine biotechnology” 2008 *Biotechnol* 26-31

Wolf 2019 *Cape Times*.

Wolf R *Help aquarium to 'bash trash' in waterways* (Cape Times Newspaper 2019)

Wolfrum 1990 *German Yearbook of International Law*

Wolfrum R "Purposes and Principles of International Environmental Law" 1990 *German Yearbook of International Law* 308-330

Wood et al 2008 *Fauna & Flora International, Oryx*

Wood L et al "Assessing progress towards global marine protection targets: shortfalls in information and action" 2008 *Fauna & Flora International, Oryx* 340-351

Young et al 2019 *Journal of Marine Science*

Young T et al "Adaptation strategies of coastal fishing communities as species shift poleward" 2019 *Journal of Marine Science* 93-103

Young 2013 *PER Journal*

Young M "Achieving equity in the fishing industry: the fate of informal fishers in the context of the Policy for the Small-Scale Fisheries Sector in South Africa" 2013 *PER Journal* 288-614

Xiaolu 2011 *The International Legal Framework for Prevention of Vessel-source Pollution and Its Implementation in Chinese Legislation*

Xiaolu *The International Legal Framework for Prevention of Vessel-source Pollution and Its Implementation in Chinese Legislation* (LLM-dissertation Lund University 2011)

Zhang, Wohlhueter R and hang 2016 *Food Science and Human Wellness*

Zhang C, Wohlhueter and Zhang H "Genetically modified foods: A critical review of their promise and problems" 2016 *Food Science and Human Wellness* 116-12

## Case Laws

Chevron U.S.A., Inc. v. NRDC 1984 467 U.S. 837

*Dispute Concerning Delimitation Of The Maritime Boundary Between Ghana and Côte D'ivoire In The Atlantic Ocean* 2017 International Tribunal For The Law Of The Sea (ITLOS)

Dladla v City of Johannesburg 2017 42 SA (CC)

*Federal Republic of Germany v. Denmark; Federal Republic of Germany v. Netherlands* 1969 International Court of Justice (ICJ)

Gongqose & others v Minister of Agriculture, Forestry & Fisheries and others 2018 (SCA)

*Obligation to Negotiate Access to the Pacific Ocean (Bolivia v. Chile)* 2018 Judgment, International Court of Justice (ICJ)

*South China Sea Arbitration, Philippines v China, Award* 2016 Permanent Court of Arbitration (PCA)

*The Trail Smelter Arbitration Case (United States Vs Canada)* 1941, U.N. Rep. Int'l Arb.

*United Kingdom v Albania Judgment on Preliminary Objection* 1948 International Court of Justice (ICJ)

## Legislations

*Aquaculture Development Bill* B22-2018

*Civil Liability Act* 41 of 1961

*Environmental Protection and Management Act 11 of 2015.*

*Fertilizers, Farms, Agricultural Remedies and Stock Remedies Act and Companies Act 36 of 1974*

*Foodstuff Cosmetics and Disinfection Act 54 of 1972*

*Hazardous Substances Act 15 of 1973*

*Marine Living Resource Act 18 of 1998*

*Marine Pollution (Intervention) Act 64 of 1987*

*Marine Pollution (Prevention of Pollution from Ships) Act 2 of 1986*

*Marine Pollution Act 48 of 2016*

*Marine Spatial Planning Act 16 of 2018*

*Maritime Zone Act 15 of 1994*

*Metropolitan Water Supply, Sewerage, and Drainage Act 043 of 1909*

*Mineral and Petroleum Resources Development Act 28 of 2002*

*National Environmental Management Act 107 of 1998*

*National Environmental Management Integrated Coastal Management Act 24 of 2008*

*National Environmental Management Protected Areas Act 57 of 2003*

*National Environmental Management Waste Act 59 of 2008*

*National Water Act 36 of 1998*

*National Water Quality Management Strategy 2018*

*New Zealand Environment Act 127 of 1986.*

*Prevention and Combating of Pollution of the Sea by Oil Act 6 of 1981*

*The Canadian Environmental Protection Act 1999.*

*The Constitution of the Republic of South Africa, 1996*

*The Environmental Conservation Act 73 of 1989*

*The Environmental Protection Act 1990.*

## **International Instruments**

*2050 Africa's Integrated Maritime Strategy (2012)*

*Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean (1995).*

*African Charter on Maritime Security and Safety and Development in Africa (2016).*

*African Continental Free Trade Agreement (2019)*

*Agreement instituting the Latin American Organization for Fisheries Development (1982).*

*Bergen Declaration Fifth International Conference on the Protection of the North Sea (2002).*

*Cancun Declaration On Mainstreaming The Conservation And Sustainable Use Of Biodiversity For Well-Being (2016)*

*Cartagena Protocol on Biosafety to the Convention on Biological Diversity (2003)*

*Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (1972)*

*Convention for the Protection and Development of the Marine Environment*

*Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (1985)*

*Convention on Biological Diversity (1993)*

*Convention on Limitation of Liability for Maritime Claims (1976)*

*Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972)*

*Convention on the Protection and Use of Transboundary Watercourses and International Lakes Helsinki (1992)*

*Convention on the Protection of the Marine Environment of the Baltic Sea Area, (1992)*

*Coordinating Body on the Sustainable Development of the Seas of East Asia  
Hague Declaration on environment (1989)*

*International Convention for the Prevention of Pollution from Ships (1973)*

*International Convention on Civil Liability for Bunker Oil Pollution Damage (2001)*

*International Convention Relating to the Limitation of Liability of Owners of  
Seagoing Ships (1957)*

*London Protocol to the Convention on The Prevention Of Marine Pollution By  
Dumping of Wastes and other Matter (1996)*

*of the Wider Caribbean Region Cartagena (1986)*

*Partnerships in Environmental Management for the Seas of East Asia*

*Putrajaya Declaration (2016)*

*The African Continental Free Trade Area (2018)*

*The African Convention on the Conservation of Nature and Natural Resources*

*The Barcelona Convention for the Protection of the Marine Environment and the  
Coastal Region of the Mediterranean (1995).*

*The Convention for the Protection of the Marine Environment and the Coastal  
Region of the Mediterranean (1995).*

*The Convention for the Protection of the Marine Environment of the North-East  
Atlantic (1992).*



*The Convention for the Protection of the Marine Environment of the North-East Atlantic (1992).*

*The Convention for the Protection of the Mediterranean Sea Against Pollution (1978).*

*The Convention on the Protection of the Black Sea against Pollution (1992).*

*The United Nations Environment Programme (2014)*

*United Nations Boundary Waters Treaty (1909)*

*United Nations Conference on Environment and Development (1992).*

*United Nations Convention on the Law of the Sea (1982)*

*United Nations Environmental Programme Regional Seas Reports and Studies No. (171 1999)*

*United States Code: General, 46 U.S.C. §§ 2101-2114 (1988)*

## **Internet Sources**

Alarm Foundation 2010 <https://www.sea-alarm.org/wp-content/uploads/2010/07/south-africa.pdf>

Alarm Foundation 2010 Advancing Oiled Wild Life Preparedness and Response <https://www.sea-alarm.org/wp-content/uploads/2010/07/south-africa.pdf> accessed on 27 August 2018

Arveda 2018 <https://averda.co.za/news/south-africa-improves-management-marine-pollution/>

Arveda 2018 South Africa improves management of marine pollution  
<https://averda.co.za/news/south-africa-improves-management-marine-pollution/>  
accessed on 20 March 2020

Australian State of the Marine Environment 2016  
[https://soe.environment.gov.au/sites/default/files/soe2016-marine-launch\\_v36march17.pdf?](https://soe.environment.gov.au/sites/default/files/soe2016-marine-launch_v36march17.pdf?)

Australian State of the Marine Environment 2016 Marine Environment Report  
[https://soe.environment.gov.au/sites/default/files/soe2016-marine-launch\\_v36march17.pdf?](https://soe.environment.gov.au/sites/default/files/soe2016-marine-launch_v36march17.pdf?) accessed on 11 March 2020

Bashat 2003  
file:///G:/FINAL%20DOCTORAL%20RESEARCH/PROBLEM%20SOLVING%20APPROACH/10.1.1.462.9964.pdf

Bashat 2003 Managing Waste in Exploration and Production Activities of the Petroleum Industry  
file:///G:/FINAL%20DOCTORAL%20RESEARCH/PROBLEM%20SOLVING%20APPROACH/10.1.1.462.9964.pdf accessed on 30 August 2018

Beretta 2012 <https://journals.openedition.org/eces/1135#tocto1n2>

Beretta 2012, Some Highlights on the Concept of Environmental Justice and its Use  
<https://journals.openedition.org/eces/1135#tocto1n2> accessed on 23 August 2019

Botha 2016 <https://www.golegal.co.za/shipping-law-ship-market-maritime-finance-south-africa-overview> 26 August 2018

Botha S 2016 The ship market and maritime finance in South Africa: An overview  
<https://www.golegal.co.za/shipping-law-ship-market-maritime-finance-south-africa-overview> accessed on 26 August 2018

Bradford, 2007, [https://scholarship.law.columbia.edu/faculty\\_scholarship/1970](https://scholarship.law.columbia.edu/faculty_scholarship/1970)

Bradford A 2007 Regime Theory,  
[https://scholarship.law.columbia.edu/faculty\\_scholarship/1970](https://scholarship.law.columbia.edu/faculty_scholarship/1970) accessed on 07 July 2021

Can der Elst 2007 [http://www.enviropaedia.com/topic/default.php?topic\\_id=156](http://www.enviropaedia.com/topic/default.php?topic_id=156)

Can der Elst R 2007 Marine Life of Southern Africa  
[http://www.enviropaedia.com/topic/default.php?topic\\_id=156](http://www.enviropaedia.com/topic/default.php?topic_id=156) accessed on 21 August 2019

Cancún World Oceans Day event 2010 <https://www.yumpu.com/en/document/read/33569348/oceans-day-at-cancun-summary-global-ocean-forum>

Cancún World Oceans Day event 2010 Ocean: Essential to Life, Essential to Climate <https://www.yumpu.com/en/document/read/33569348/oceans-day-at-cancun-summary-global-ocean-forum> accessed on 26 November 2019

Clendenon 2018 <http://www.waterencyclopedia.com/Po-Re/Pollution-of-the-Ocean-by-Sewage-Nutrients-and-Chemicals.html>.

Clendenon C 2018 Pollution of the Ocean by Sewage, Nutrients, and Chemicals <http://www.waterencyclopedia.com/Po-Re/Pollution-of-the-Ocean-by-Sewage-Nutrients-and-Chemicals.html#ixzz6gaTAdMxx>

<http://www.waterencyclopedia.com/Po-Re/Pollution-of-the-Ocean-by-Sewage-Nutrients-and-Chemicals.html> accessed on 26 August 2018

Crawford et al 2000 <http://www.adu.uct.ac.za/adu/projects/sea-shore-birds/oil-spill/initial-effects#:~:text=The%20bulk%20ore%20carrier%20MV,demersus%2C%20on%2023%20June%202000>.

Crawford R et al 2000 The "Treasure" Oil Spill <http://www.adu.uct.ac.za/adu/projects/sea-shore-birds/oil-spill/initial-effects#:~:text=The%20bulk%20ore%20carrier%20MV,demersus%2C%20on%2023%20June%202000> accessed on 30 August 2020.

Cohen and Alexander 2013 <https://doi.org/10.1371/journal.pone.0073383>

Cohen and Alexander 2013 "Catch Rates, Composition and Fish Size from Reefs Managed with Periodically-Harvested Closures" <https://doi.org/10.1371/journal.pone.0073383> accessed on 30 January 2020

Commission of the European Communities 2006 <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0475:FIN:EN:PDF>

Commission of the European Communities 2006 Communication from the Commission to the Council and the European Parliament Establishing an Environment Strategy for the Mediterranean <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0475:FIN:EN:PDF> accessed 03 December 2019

Coordinating Body on the Seas of East Asia “date unknown”  
<https://oceanconference.un.org/commitments/?id=15986> (Accessed on 03/12/2019).

Coordinating Body on the Seas of East Asia “date unknown” SDG 14 Targets covered  
<https://oceanconference.un.org/commitments/?id=15986> accessed on 03 December 2019

Cunningham 2004 [https://www.memoireonline.com/04/12/5617/m\\_The-sociological-study-on-environmental-conservation-as-a-means-of-achieving-sustainable-development6.html](https://www.memoireonline.com/04/12/5617/m_The-sociological-study-on-environmental-conservation-as-a-means-of-achieving-sustainable-development6.html).

Cunningham W 2004 The Concept of Environmental Conservation  
[https://www.memoireonline.com/04/12/5617/m\\_The-sociological-study-on-environmental-conservation-as-a-means-of-achieving-sustainabledevelopment6.html](https://www.memoireonline.com/04/12/5617/m_The-sociological-study-on-environmental-conservation-as-a-means-of-achieving-sustainabledevelopment6.html) accessed on 27 August 2019.

Dahlhoff 2004 <https://doi.org/10.1146/annurev.physiol.66.032102.114509>

Dahlhoff P 2004 Biochemical Indicators of Stress and Metabolism: Applications for Marine Ecological Studies  
<https://doi.org/10.1146/annurev.physiol.66.032102.114509>

Dell’Amore 2014 <https://www.nationalgeographic.com/news/2014/3/140325-texas-pollution-oil-spills-animals-science>

Dell’Amore C 2014 3 surprising Sources of Oil Pollution in the Ocean  
<https://www.nationalgeographic.com/news/2014/3/140325-texas-pollution-oil-spills-animals-science> accessed 26 August 2018

Department of Environmental Affairs 2014  
[https://www.environment.gov.za/sites/default/files/reports/nationalcoastal\\_managementprogramme\\_ofsouthafrica.pdf](https://www.environment.gov.za/sites/default/files/reports/nationalcoastal_managementprogramme_ofsouthafrica.pdf) (Accessed 28/01/2020).

Department of Environmental Affairs 2014 The National Coastal Management Programme of South Africa  
[https://www.environment.gov.za/sites/default/files/reports/nationalcoastal\\_managementprogramme\\_ofsouthafrica.pdf](https://www.environment.gov.za/sites/default/files/reports/nationalcoastal_managementprogramme_ofsouthafrica.pdf) accessed 28 January 2020

Department of Agriculture, Forestry and Fisheries “date unknown”  
<https://www.daff.gov.za/daffweb3/Branches/FisheriesManagement/Aquaculture-and-Economic-Development/aaquaculture-sustainable-management/Aquaculture%20EMP%20Checklist%20Brochure.pdf>

Department of Agriculture, Forestry and Fisheries, South Africa “date unknown” Aquaculture Environmental Management Programme Checklist, <https://www.daff.gov.za/daffweb3/Branches/FisheriesManagement/Aquaculture-and-Economic-Development/aaquaculture-sustainable-management/Aquaculture%20EMP%20Checklist%20Brochure.pdf> accessed on 21 February 2020

Department of Environment Forestry and Fisheries 2019 <https://www.environment.gov.za/mediarelease/deff-responds-to-oilspill-in-algoabay>

Department of Environment Forestry and Fisheries 2019 Department of Environment Forestry and Fisheries responds to oil spill in Algoa Bay <https://www.environment.gov.za/mediarelease/deff-responds-to-oilspill-in-algoabay> accessed on 20 March 2020

Diez et al “date unknown” <http://documents.worldbank.org/curated/en/482391554225185720/pdf/Marine-Pollution-in-the-Caribbean-Not-a-Minute-to-Waste.pdf>

Diez et al “date unknown” Marine pollution in the Caribbean: not a minute to waste <http://documents.worldbank.org/curated/en/482391554225185720/pdf/Marine-Pollution-in-the-Caribbean-Not-a-Minute-to-Waste.pdf> accessed on 04 December 2019

Djibouti Code of Conduct 2017 <https://www.imo.org/en/OurWork/Security/Pages/DCoC.aspx>.

Djibouti Code of Conduct 2017 *The Jeddah Amendment* <https://www.imo.org/en/OurWork/Security/Pages/DCoC.aspx> accessed on 21 April 2021.

Ferronato and Torretta 2019 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6466021/>

Ferronato N and Torretta V 2019 Waste Mismanagement in Developing Countries: A Review of Global Issues <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6466021/> accessed on 28 April 2020

Food and Agricultural Organization (FAO) 2006 <http://www.fao.org/3/a-a0863e.pdf>

Food and Agricultural Organization (FAO) 2006 Establishing and strengthening national legal frameworks for integrated coastal management <http://www.fao.org/3/a-a0863e.pdf> accessed on 28 January 2020

Food and Agriculture Organisation of the United Nations 2015  
<http://www.fao.org/sustainable-development-goals/overview/fao-and-the-post-2015-development-agenda/fisheries-aquaculture-oceans-seas/en/>

Food and Agriculture Organisation of the United Nations 2015 Fisheries, aquaculture, oceans and seas <http://www.fao.org/sustainable-development-goals/overview/fao-and-the-post-2015-development-agenda/fisheries-aquaculture-oceans-seas/en/> accessed on 31 January 2020

Food and Agriculture Organization <http://www.fao.org/3/V5321E/V5321E02.htm>

Food and Agriculture Organization “date unknown” The State of Living Marine Resources and their Environment <http://www.fao.org/3/V5321E/V5321E02.htm> accessed on 07 March 2020

Frankson 2018 <https://infrastructurenews.co.za/2018/07/06/new-body-set-to-manage-marine-pollution-in-sa/>

Frankson L 2018 New body set to manage marine pollution in SA <https://infrastructurenews.co.za/2018/07/06/new-body-set-to-manage-marine-pollution-in-sa/> accessed on 08/10/2020.

Hobbs 2010 <https://marisluste.files.wordpress.com/2010/11/deterrence-theory.pdf>

Hobbs 2010 Deterrence Theory <https://marisluste.files.wordpress.com/2010/11/deterrence-theory.pdf> accessed on 20 August 2019

Hope Spots “date unknown” <https://sst.org.za/projects/hope-spots/>

Hope Spots “date unknown” what are hope spots <https://sst.org.za/projects/hope-spots/> accessed on 14 March 2020

IGAD 2016 <https://igad.int/documents/6-igad-rs-implementationplan-final-v6/file>

IGAD 2016 Regional Strategy Implementation Plan 2016-2020 <https://igad.int/documents/6-igad-rs-implementationplan-final-v6/file> accessed 21 April 2021

Institute of Marine Sciences 2018 <https://wedocs.unep.org/handle/20.500.11822/25703>

Institute of Marine Sciences 2018 Development of Ocean Governance Strategy for Africa: Summary of Scoping Study and Gap Analysis <https://wedocs.unep.org/handle/20.500.11822/25703> accessed 27 November 2019

International Coastal Cleanup Day 2019  
<https://oceanconservancy.org/news/ahead-34th-international-coastal-cleanup-ocean-conservancy-report-reveals-prevalence-plastic-cutlery-beaches-waterways/>  
International Coastal Cleanup Day 2019 Ocean Conservancy Report <https://oceanconservancy.org/news/ahead-34th-international-coastal-cleanup-ocean-conservancy-report-reveals-prevalence-plastic-cutlery-beaches-waterways/> accessed on 09 March 2020

International Coastal Cleanup Report 2017  
Report [https://oceanconservancy.org/wp-content/uploads/2017/06/International-Coastal-Cleanup\\_2017-Report.pdf](https://oceanconservancy.org/wp-content/uploads/2017/06/International-Coastal-Cleanup_2017-Report.pdf)

International Coastal Cleanup Report 2017 Together For Our Ocean  
Report [https://oceanconservancy.org/wp-content/uploads/2017/06/International-Coastal-Cleanup\\_2017-Report.pdf](https://oceanconservancy.org/wp-content/uploads/2017/06/International-Coastal-Cleanup_2017-Report.pdf) accessed on 30 August 2018.

Jurgens and Eggiton 2011 <https://www.timeslive.co.za/news/south-africa/2011-09-03-oil-spill-slicks-cape-town-beach/> (Accessed 30/08/2018)

Jurgens A and Eggiton S 2011 Oil spill slicks Cape Town beach <https://www.timeslive.co.za/news/south-africa/2011-09-03-oil-spill-slicks-cape-town-beach/> accessed 30 August 2018

Kibria 2015 [https://www.researchgate.net/profile/Golam\\_Kibria7.24](https://www.researchgate.net/profile/Golam_Kibria7.24) September 2015. 7p]

Kibria G “Ocean Acidification and its Impact on Marine Biodiversity, Sea Food Security and Livelihoods” 2015 [www.researchgate.net/profile/Golam\\_Kibria7.24](http://www.researchgate.net/profile/Golam_Kibria7.24) September 2015. 7p]. accessed on 15 October 2020.

Koh “date unknown” [https://www.un.org/depts/los/convention\\_agreements/texts/koh\\_english.pdf](https://www.un.org/depts/los/convention_agreements/texts/koh_english.pdf)

Koh “date unknown” A Constitution for the Ocean [https://www.un.org/depts/los/convention\\_agreements/texts/koh\\_english.pdf](https://www.un.org/depts/los/convention_agreements/texts/koh_english.pdf) accessed on 23 August 2019

Ma 2017 <http://opiniojuris.org/2017/11/09/ghana-v-cote-divoire-unilateral-oil-activities-in-disputed-marine-areas/> (Accessed on 19/01/2020).

Ma 2017 Ghana v. Côte d'Ivoire: Unilateral Oil Activities in Disputed Marine Areas <http://opiniojuris.org/2017/11/09/ghana-v-cote-divoire-unilateral-oil-activities-in-disputed-marine-areas/> accessed on 19 January 2020

Marine and Coastal Resources "date unknown"  
[https://www.environment.gov.za/sites/default/files/docs/part2 marine and coastal resourcespdf](https://www.environment.gov.za/sites/default/files/docs/part2_marine_and_coastal_resourcespdf)

Marine and Coastal Resources "date unknown" At glance  
[https://www.environment.gov.za/sites/default/files/docs/part2 marine and coastal resourcespdf](https://www.environment.gov.za/sites/default/files/docs/part2_marine_and_coastal_resourcespdf) accessed on 27 August 2019

Marine Strategy Framework Directive 2008  
[https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index\\_en.htm](https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm)

Marine Strategy Framework Directive 2008 Our Oceans, Seas and Coasts  
[https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index\\_en.htm](https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm) accessed on 02 December 2019

Musk 2018 <http://www.itopf.org/fileadmin/data/Documents/Papers/amop12.pdf>.

Musk S 2018 fate of oil spills  
<http://www.itopf.org/fileadmin/data/Documents/Papers/amop12.pdf>. accessed on 26 August 2018

Nathasan 2017 [www.britannica.com/contributor/Jerry-A-Nathanson/4206](http://www.britannica.com/contributor/Jerry-A-Nathanson/4206)

Nathasan J 2017 *Environmental Technology: Water Supply, Waste Disposal, and Pollution Control*. [www.britannica.com/contributor/Jerry-A-Nathanson/4206](http://www.britannica.com/contributor/Jerry-A-Nathanson/4206). (Accessed on 27/08/ 2019).

National Academy of Sciences 1999 <https://www.nap.edu/read/6031/chapter/7>

National Academy of Sciences 1999 Options for the Future: Balancing Water Demand and Water Resources <https://www.nap.edu/read/6031/chapter/7> (Accessed on 10 March 2020)

National Academy of Sciences 2010 <https://www.nap.edu/catalog/12904/ocean-acidification-a-national-strategy-to-meet-the-challenges-of>.



National Academy of Sciences 2010 A National Strategy to Meet the Challenges of a Changing Ocean as a guest. <https://www.nap.edu/catalog/12904/ocean-acidification-a-national-strategy-to-meet-the-challenges-of>. accessed on 26 November 2019

NOAA 2018 <https://oceanservice.noaa.gov/facts/pollution.html>

NOAA 2018 What is the biggest source of pollution in the ocean? <https://oceanservice.noaa.gov/facts/pollution.html> accessed on 26 August 2018

Operation "date unknown"  
<https://www.environment.gov.za/projectsprogrammes/operationphakisa/oceansec>  
onomy

Operation Phakisa "date unknown" Ocean Economy  
<https://www.environment.gov.za/projectsprogrammes/operationphakisa/oceansec>  
omy accessed on 31 January 2020

Oran 2011 <https://www.pnas.org/content/pnas/108/50/19853.full.pdf>

Oran R 2011 Effectiveness of international environmental regimes: Existing knowledge, cutting-edge themes, and research strategies <https://www.pnas.org/content/pnas/108/50/19853.full.pdf> accessed on 28 November 2020

Osterloff 2017 <https://www.nhm.ac.uk/discover/what-is-ocean-acidification.html>

Osterloff 2017 Ocean Acidification <https://www.nhm.ac.uk/discover/what-is-ocean-acidification.html> accessed on 26 November 2019

Ota and Cisneros-Montemayor 2017 <https://theconversation.com/for-indigenous-communities-fish-mean-much-more-than-food> 70129

Ota Y and Cisneros-Montemayor A 2017 For indigenous communities, fish mean much more than food <https://theconversation.com/for-indigenous-communities-fish-mean-much-more-than-food> 70129 accessed on 22 March 2019

Publication No. 1 2007  
[https://wedocs.unep.org/bitstream/handle/20.500.11822/25786/ActionPlan\\_Marine.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/25786/ActionPlan_Marine.pdf?sequence=1&isAllowed=y)

Publication No. 1 2007 The Protection, Management and Development of the Marine and Coastal Environment of the Northwest Pacific Region [https://wedocs.unep.org/bitstream/handle/20.500.11822/25786/ActionPlan\\_Marine.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/25786/ActionPlan_Marine.pdf?sequence=1&isAllowed=y) accessed 14 March 2020

Report of the United Nations Conference on Environment and Development 1992  
[https://www.un.org/Depts/los/consultative\\_process/documents/A21-Ch17.htm](https://www.un.org/Depts/los/consultative_process/documents/A21-Ch17.htm)

Report of the United Nations Conference on Environment and Development 1992  
Protection of the Oceans, All Kinds of Seas, Including Enclosed and Semi-Enclosed  
Seas, And Coastal Areas and the Protection, Rational Use and Development of  
Their Living Resources  
[https://www.un.org/Depts/los/consultative\\_process/documents/A21-Ch17.htm](https://www.un.org/Depts/los/consultative_process/documents/A21-Ch17.htm)  
accessed on 30 January 2020

Royte 2018 <https://www.nationalgeographic.com/magazine/2018/06/plastic-planet-health-pollution-waste-microplastics>.

Royte E 2018 We know Plastic is Harming Marine Life, What about us?  
<https://www.nationalgeographic.com/magazine/2018/06/plastic-planet-health-pollution-waste-microplastics> accessed on 26 August 2018

Ryan 2018 <https://www.news.uct.ac.za/article/-2018-02-27-small-plastic-pollution-on-sa-beaches>

Ryan 2018 Small plastic pollution on SA beaches  
<https://www.news.uct.ac.za/article/-2018-02-27-small-plastic-pollution-on-sa-beaches> accessed on 30 August 2018.

Sea Shepard “date unknown” [https://www.seashepherd.org.au/our-campaigns/Sea Shepard](https://www.seashepherd.org.au/our-campaigns/Sea%20Shepard)

Sea Shepard “date unknown” Marine Debris Campaign  
<https://www.seashepherd.org.au/our-campaigns/> accessed on 12 March 2020

Scientific and Technical Advisory Panel date unknown  
<https://stapgef.org/sites/default/files/publications/s2sbrief.pdf>

Scientific and Technical Advisory Panel date unknown *Governing and Managing Key Flows in a “Source-to-Sea” continuum*  
<https://stapgef.org/sites/default/files/publications/s2sbrief.pdf> accessed on 15 October 2020

Scripps Institution of Oceanography “date unknown”  
<https://scripps.ucsd.edu/projects/coralreefsystems/about-coral-reefs/value-of-corals/>

Scripps Institution of Oceanography "date unknown" Coral Reef System  
<https://scripps.ucsd.edu/projects/coralreefsystems/about-coral-reefs/value-of-corals/> accessed on 14 March 2020

Sigcau 2019 <https://www.thediplomaticsociety.com/home/16-home/2704-unlocking-opportunities-through-indigenous-knowledge-to-address-current-economic-challenges>

Sigcau S 2019 Unlocking opportunities through Indigenous knowledge to address current economic challenges <https://www.thediplomaticsociety.com/home/16-home/2704-unlocking-opportunities-through-indigenous-knowledge-to-address-current-economic-challenges> accessed on 25 March 2019

Simpson 2017  
<http://kzntopbusiness.co.za/site/businessfit/view/4856/2017/10/16/IS>

Simpson T 2017 *Is South Africa Prepared To Deal With Oil Spills?*  
<http://kzntopbusiness.co.za/site/businessfit/view/4856/2017/10/16/IS> accessed on 30 April 2019

Small Island Developing States Date Unknown <http://unohrlls.org/custom-content/uploads/2013/08/SIDS-Small-Islands-Bigger-Stakes.pdf>

Small Island Developing States Date Unknown Small Islands Big(ger) Stakes  
<http://unohrlls.org/custom-content/uploads/2013/08/SIDS-Small-Islands-Bigger-Stakes.pdf>

Stanford Encyclopedia of Philosophy 2018  
<https://plato.stanford.edu/entries/criminal-law/>.

Stanford Encyclopedia of Philosophy 2018 Theories of Criminal Law  
<https://plato.stanford.edu/entries/criminal-law/>. Accessed on 21 August 2019

Stauber and Apte, 2016 <https://www.sciencedirect.com/topics/biochemistry-genetics-and-molecular-biology/sea-surface-temperature>

Stauber JL and Apte S, 2016 Global Change  
<https://www.sciencedirect.com/topics/biochemistry-genetics-and-molecular-biology/sea-surface-temperature> accessed on 25 November 2019

Steffen et al 2004  
[http://www.igbp.net/download/18.1b8ae20512db692f2a680007761/1376383137895/IGBP\\_ExecSummary\\_eng.pdf](http://www.igbp.net/download/18.1b8ae20512db692f2a680007761/1376383137895/IGBP_ExecSummary_eng.pdf)

Steffen W et al 2004 Global Change and the Earth System: A Planet Under Pressure, Royal Swedish Academy of Sciences, [http://www.igbp.net/download/18.1b8ae20512db692f2a680007761/1376383137895/IGBP\\_ExecSummary\\_eng.pdf](http://www.igbp.net/download/18.1b8ae20512db692f2a680007761/1376383137895/IGBP_ExecSummary_eng.pdf) accessed on 15 October 2020

Study in support of Impact Assessment work on Blue Biotechnology 2014 [https://ec.europa.eu/maritimeaffairs/publications/study-support-impact-assessment-work\\_blue-biotechnology\\_en](https://ec.europa.eu/maritimeaffairs/publications/study-support-impact-assessment-work_blue-biotechnology_en)

Study in support of Impact Assessment work on Blue Biotechnology 2014 Final Report [https://ec.europa.eu/maritimeaffairs/publications/study-support-impact-assessment-work\\_blue-biotechnology\\_en](https://ec.europa.eu/maritimeaffairs/publications/study-support-impact-assessment-work_blue-biotechnology_en) accessed on 07 March 2020  
The Abidjan Convention <http://ioisa.org/wp-content/uploads/2016/09/WEST-AFRICA-GROUP-.pdf> accessed on 14 March 2020

The Abidjan Convention “date unknown” <http://ioisa.org/wp-content/uploads/2016/09/WEST-AFRICA-GROUP-.pdf> (Accessed 14/03/2020).

The Abidjan Convention “date unknown” Developing Regional Ocean Policy <http://ioisa.org/wp-content/uploads/2016/09/WEST-AFRICA-GROUP-.pdf> accessed on 14 March 2020

The Contributions of Science to Integrated Coastal Management 1996 <http://www.fao.org/3/contents/dc824e26-b1b7-568d-87701f9347ecb063/W1639E00.HTM>

The Contributions of Science to Integrated Coastal Management 1996 GESAMP Reports and Studies No. 61 <http://www.fao.org/3/contents/dc824e26-b1b7-568d-8770-1f9347ecb063/W1639E00.HTM> accessed on 14 March 2020

The World Wide Fund 2020 [https://wwf.panda.org/discover/our\\_focus/oceans\\_practice/problems/pollution/](https://wwf.panda.org/discover/our_focus/oceans_practice/problems/pollution/)

The World Wide Fund 2020 Over 80% of marine pollution comes from land-based activities. [https://wwf.panda.org/discover/our\\_focus/oceans\\_practice/problems/pollution/](https://wwf.panda.org/discover/our_focus/oceans_practice/problems/pollution/) accessed on 11 March 2020

Two Ocean Aquarium 2019 <https://www.facebook.com/TwoOceansAquarium/videos/celebrating-africa-day-with-trash-bash-at-monwabisi-beach/1286447084863833/>

Two Ocean Aquarium 2019 Celebrating Africa Day with Trash Bash at Monwabisi Beach <https://www.facebook.com/TwoOceansAquarium/videos/celebrating-africa-day-with-trash-bash-at-monwabisi-beach/1286447084863833/> accessed on 09 March 2020

Two Ocean Aquarium 2019 <https://www.aquarium.co.za/blog/entry/making-a-world-oceans-day-difference-on-hout-bay-beach-with-trash-bash-2019>.

Two Ocean Aquarium 2019 Making a World Oceans Day difference on Hout Bay Beach with Trash Bash <https://www.aquarium.co.za/blog/entry/making-a-world-oceans-day-difference-on-hout-bay-beach-with-trash-bash-2019> accessed on 09 March 2020

Tsunami Warning and Preparedness Assessment Programme 2011 [https://www.nap.edu/login.php?record\\_id=12628](https://www.nap.edu/login.php?record_id=12628)

Tsunami Warning and Preparedness Assessment Programme 2011 An Assessment of the U.S. Tsunami Program and the Nation's Preparedness [https://www.nap.edu/login.php?record\\_id=12628](https://www.nap.edu/login.php?record_id=12628) accessed on 03/12/2019

United States Environmental Protection Agency 2018 <https://www.epa.gov/coral-reefs/threats-coral-reefs>

United States Environmental Protection Agency 2018 Threats to Coral Reefs <https://www.epa.gov/coral-reefs/threats-coral-reefs> accessed on 14 March 2020

U.S Department of justice 1994 <https://www.ncjrs.gov/pdffiles1/Digitization/143270NCJRS.pdf>

U.S Department of justice 1994 Local Prosecution of Environmental Crime <https://www.ncjrs.gov/pdffiles1/Digitization/143270NCJRS.pdf> accessed on 20 August 2019

Zemani date unknown <http://www.dwaf.gov.za/Documents/Other/RMP/SAADFCulturalWaterUseJun05.pdf>

Zemani <http://www.dwaf.gov.za/Documents/Other/RMP/SAADFCulturalWaterUseJun05.pdf>