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WORLD MARITIME UNIVERSITY

Malmö, Sweden

**ENVIRONMENTAL REGULATION OF
EMERGING OFFSHORE OIL AND GAS
ACTIVITIES IN SOMALIA**

By

ABUBAKAR MOHAMUD ABUBAKAR
Somalia

A dissertation submitted to the World Maritime University in partial
fulfilment of the requirement for the award of the degree of

MASTER OF SCIENCE
In
MARITIME AFFAIRS

(MARITIME LAW AND POLICY)

2019

Declaration

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

Signature:

Abubakar Mohamud ABUBAKAR

Date: 20 September 2019

Supervised by: Associate Professor Dr. Aref Fakhry

Supervisor's affiliation: World Maritime University

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Abstract

Title of Dissertation: **Environmental Regulation of Emerging Offshore Oil and Gas Activities in Somalia**

Degree: **Master of Science**

Offshore oil and gas development in Somalia has recently become the focus of the Somali Government in its efforts to restart the oil exploration activities after a period of dormancy for almost thirty years. Despite the positive impact, the offshore oil and gas activities have a long history of pollution incidents that damage the marine environment due to incidents like the Santa Barbara oil spill in 1969, the Piper Alpha 1988 disaster in the North Sea and the Deepwater Horizon 2010 disaster in the Gulf of Mexico.

This dissertation examines the environmental legal regime governing Somalia's offshore oil and gas activities at international, regional and national levels. It presents a comparative analysis of Somalia's legal and regulatory regime with those of Ghana and Norway to benchmark and identify gaps in Somalia's regime. The dissertation contributes towards the understanding of gaps existing in Somalia's environmental legal and regulatory regime in the oil and gas sector and overall, enable Somalia to develop a better legal and regulatory capacities to adequately address the risk of environmental pollution and achieve a balance of economic development and environmental protection.

The findings indicate that the environmental legal and regulatory regime for oil and gas activities in Somalia are inadequate and fail to comprehensively regulate potential environmental pollution. Drawing on lessons from Ghana and Norway, the dissertation proposes the amendment of the Petroleum Law and enacting a separate environmental law as well as necessary subsidiary regulations. Additionally, the environmental responsibilities in the offshore oil and gas sector should be placed under a separate regulatory authority.

The dissertation concludes by recommending the adoption of Norway's performance-based regulatory approach to regulating environmental pollution in the offshore oil and gas activities.

KEYWORDS: Offshore oil and gas, Environmental pollution, Somalia, Legal and regulatory regimes

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List of Abbreviations

EEZ	Exclusive Economic Zone
ILM	International Legal Materials
IMO	International Maritime Organization
IOCs	International Oil Companies
Jeddah Convention	Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment, 1982
MARPOL 73/78	International Convention for the Preservation of Pollution from Ships, 1973, as amended by the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973
MPE	Ministry of Petroleum and Energy of Norway
Nairobi Convention	Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, 1985
NCS	Norwegian Continental Shelf
OPRC 1990	International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990
PSA	Production Sharing Agreement
UNCLOS	United Nations Convention on the Law of the Sea, 1982
U.N.T.S.	United Nations Treaties Series
1972 London Convention	Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter, 1972

1. CHAPTER ONE: INTRODUCTION

1.1. Background

The offshore oil and gas industry is one of the major components of the blue economy and it offers great potential for growth, development, and transformation in coastal developing countries while at the same time posing enormous challenges (Arinaitwe, 2013; Pascoe & Innes, 2018). In the last decade, the East Africa region has become the emerging hotspot for oil and gas exploration as there have been major discoveries in both onshore and offshore (Purcell, 2014; Rochette, Wright, & IDDRI, 2015)

As the latest frontier, Somalia has recently discovered offshore oil and gas deposits in its coastline, following the completion of approximately 20,000 kilometers of 2D seismic report which commenced in 2014 in joint cooperation with Spectrum. Also, between 2014 and 2015, the Government cooperated with Soma Oil and Gas acquiring approximately another 20,000 kilometers of seismic data on the offshore Somalia (Spectrum, 2018).

Somalia has been pursuing efforts towards stabilizing the country and, since 2012, the country has made significant improvements towards peace and security through establishing a federal structure of governance (Reitano & Shaw, 2013; Wilson, 2016). The improved peace and security situation in the country has arguably paved the way for strategizing on how to tap resources that have remained dormant for more than two decades.

In pursuit of its endeavor, on June 6, 2018, a petroleum management and revenue sharing agreement between the Federal Government and its federal member states was signed in Baidoa (Africa Oil & Power, 2018; African Energy, 2018). The purpose of this agreement was to establish a clear understanding between the stakeholders on the management and administration of the resources and to bring sustainability by achieving inclusivity, equitable benefit-sharing, transparency, and accountability (Somalia, 2019a).

The Government of Somalia held a number of roadshows around the world and the last one was in London on February 7, 2019. The London roadshow was intended to showcase interested parties the seismic report findings, the announcement of fiscal terms, as well as unveil 50 blocks covering a total area of over 173,000 square kilometers (Spectrum, 2018). Somalia opened its first offshore exploration license round and plans to start exploration drillings over 2020 and 2021 (Somalia, 2019a).

Since Somalia has adopted a federal structure which is very new to Somali governance, the Government has embarked on efforts to properly regulate the oil and gas sector in general. This includes amending the Petroleum Law of 2008 in order to harmonize it with the Provisional Constitution of 2012 which is currently under review. The amended Petroleum Bill has been approved by the House of the People of the Federal Parliament but pending before the Upper House of the Federal Parliament and the President in order to enter into force. Furthermore, the Government has envisioned to update relevant laws or enact new laws which are also necessary frameworks regulating the oil and gas activities. Those legislation include laws on investment, the environment, and taxation.

Despite the positive economic impact, the offshore oil and gas activities pose potential negative consequences to the marine environment. Major incidents of oil spills have always led to the adoption of stringent environmental regulations (Lindøe, Baram, & Paterson, 2012).

Somalia has the opportunity to learn from these regulatory frameworks as they can represent the best practices to properly regulate the industry and mitigate the risk of marine pollution associated with the offshore oil and gas activities. On the other hand, the development and transformation of exploration technology have greatly reduced the risks involved during the production (Managi, Opaluch, Jin, & Grigalunas, 2005). However, it is always essential to properly regulate the industry and develop capabilities to prevent and respond to any potential oil spill incident. Furthermore, these technological developments represent an incredible opportunity for Somalia's offshore oil and gas

plans.

Undeniably, Somalia is unique compared to other major regions with existing offshore explorations. The country is still recovering from a two-decade-long conflict and the Government institutions are weak (Bertelsmann Stiftung, 2018). Moreover, the country has experienced widespread maritime insecurity in the form of piracy between 2005 and 2012 (Bueger & Edmunds, 2018). However, it is a fact that the piracy crisis off the coast of Somalia which threatened international shipping, and well-being of seafarers have dropped significantly due to the international response (The ICC International Maritime Bureau (IMB), 2018; World Bank, 2013).

1.2. Problem Statement

Given its strategic location in the Indian Ocean and the Red Sea, Somalia is a recovering post-conflict country which has numerous economic potentials deriving from the offshore oil and gas industry. However, there are deep-rooted challenges which must be overcome before these benefits can be realized. Environmental pollution is one of the biggest challenges in the offshore oil and gas activities. The impact of an oil spill can be catastrophic. The Deepwater Horizon disaster in the Gulf of Mexico in 2010 and major accidents in the North Sea in the 1970s and 80s highlight the considerable potential impact of an oil spill can have on both the marine environment and the economy (Jessen, 2018; Newman, 2017).

Between 2014 and 2016, the Somali Federal Government in cooperation with Spectrum and Soma Oil and Gas, completed two phases in the acquisition and processing of offshore seismic data covering approximately 40,000 kilometers in total in the area of the Indian Ocean (Spectrum, 2018). The initiation of the offshore oil exploration process brings a lot of concerns in particularly relating to the legal and regulatory frameworks in place to minimize potential environmental impact. Somalia has not yet fully established the necessary legal framework to regulate its offshore oil and gas activities. The amended Petroleum Law is yet to enter into force and there are many other legislation and

regulations to consider alongside such as environmental protection legislation which has been only proposed so far.

The seismic operation is part of the exploration phase, but it has been implemented without the establishment of the conditions ensuring marine environmental protection and in the absence of the necessary environmental legal framework (Somalia, 2014). Furthermore, it is expected that other stages of exploration and production will start in the near future (Somalia, 2019b). Therefore, it is undeniable that the risk of potential marine pollution is very high in the absence of the necessary legal and regulatory frameworks.

The regulatory framework in Somalia is another major challenge. Strong regulatory regime is fundamental for effective implementation of the laws and regulations. Indeed, given the nascent state of Somali Government institutions (Bertelsmann Stiftung, 2018) concerns have been raised about the capacity and preparedness of Somali institutions to address environmental pollution resulting and respond to oil spill incidents should incidents like the Deepwater Horizon blowout happen in Somalia's territorial sea or exclusive economic zone (EEZ).

1.3. Objectives

The objective of this dissertation is to examine the environmental legal regimes applicable to govern Somalia's offshore oil and gas activities at international, regional and national levels and to propose improvements to strengthen the environmental regime in Somalia. First, the dissertation reviews the international and regional conventions that regulate the environmental pollution and determine Somalia's obligation under these frameworks. Secondly, the dissertation exclusively examines Somalia's environmental legal and regulatory regimes governing upstream offshore oil and gas activities. The examination includes a comparison with the regimes of Norway and Ghana to benchmark and identify any gaps in Somalia's regime. Finally, the research draws some of best practices from legal and regulatory frameworks of Ghana and Norway related to offshore environmental regulation in order to provide recommendations that could be adopted in the Somali

legislation.

1.4. Why Norway and Ghana?

The reasons for choosing the regime of Norway and Ghana to contrast with Somalia's is based on a deliberate assessment of several factors including the legal systems of both countries, the level of performance of the regimes in dealing with the environmental challenges as well as the different approaches to regulations used.

First, Norway is selected because it has established strong environmental regulations, set out a clear separation of responsibilities and division of authority among regulatory authorities as well as robust institutions to manage the offshore oil and gas exploration effectively (B Dahle et al., 2011; Jessen, 2018). Secondly, the similarity of the legal systems of Norway and Somalia where both countries are civil law jurisdiction. This similarity is crucial because it allows easy legal transplant¹ and, in particular, to transfer the established rules dealing with the environmental pollution in the Norwegian legal system into the Somali system.

Finally, Somalia became part of the Oil for Development (OfD) Programme in June 2018 (NORAD, 2019) and the program involves a government-to-government capacity-building program which includes a pillar of environmental protection aiming for minimal impact on the environment as a consequence of oil and gas activities. This means that Somalia has already started the process of learning from the Norwegian legal system including those addressing the environmental pollution, therefore, examining and comparing the Norwegian system with the Somali regime will further contribute towards this goal.

First, Ghana is chosen because it has developed one of the best-governed oil and gas industry in the Sub-Saharan Africa (Natural Resource Governance Institute, 2017). The

¹ See the Definition of (Legal transplant, n.d.): See USLegal "Legal transplant is the term used to refer to the method of adopting and enacting some laws of another country by some other country on the same line of the provisions existing in the adoptive country. This borrowing of laws or enactment of new laws, on inspiration by some foreign examples is called legal transplant. It is also known as legal diffusion"

report measures the quality of resource governance in 81 countries that make up 82 percent of the world's oil producers. The oil and gas sector of Ghana scored 67 out of 100 points which makes it the best performer in the Sub-Saharan Africa. Also, in terms of regulatory quality in the oil and gas sector, Ghana scored 76 of 100 points. This makes Ghana a perfect choice for making comparisons with other countries in the region since both are located in Sub-Saharan Africa.

Secondly, Ghana has recently made a major overhaul of its legal regime governing the oil and gas activities. This includes enacting the 2016 Petroleum (Exploration and Production) Act as a new principal statute replacing the Petroleum (Exploration & Production) Act, 1984 and a number of regulations and guidelines to adequately regulate the oil and gas activities. Finally, these significant changes in the Ghana legal regime was partly because of the lessons learned from the Norwegian system. The Oil for Development (OfD) programme was assisting Ghana since 2007 (NORAD, 2014) to enhance Ghana's legal and regulatory framework related to oil and gas and increase the institutional capacity in the sector.

Both Norway and Ghana represent the two types of regulatory approach, the performance-based versus the prescriptive-based regulation. Norway's regulatory approach is mainly performance-based to environmental regulation in which the authority identifies the functions and goals or standards to achieve for the operators and granting them considerable flexibility to determine how they will conduct oil and gas activities and achieve the outline goals or standards.

Ghana mainly uses a prescriptive-based regulation approach in regulating environmental pollution. The regulation prescribes the specific detailed technical or procedural requirement which tells the operator what to do and how to do it in order to achieve a set of objectives outlined in the regulation. Also, the regulatory authority assumes the responsibility of ensuring compliance with the specified requirements.

The analysis of two legal regimes with two different regulatory approaches will greatly

contribute to the understanding and discussions on which legal system is better suited for regulating the environmental pollution in Somalia.

1.5. Research Questions

This research is guided by three central questions. First, what is Somalia's obligation under the international and regional regimes that regulate environmental pollution arising from offshore oil and gas activities? Second, what are the gaps in the legal and regulatory frameworks governing environmental pollution arising from offshore oil and gas activities in Somalia? Third, how can the available best practices from Ghana and Norway be applied in Somalia to effectively regulate environmental pollution arising from offshore oil and gas activities?

1.6. Methodology

This research utilized qualitative doctrinal analysis and comparative methodology. The doctrinal method was selected because the research is mainly focused on the examination and interpretation of statutes concerning the environmental aspect of offshore oil and gas activities. The method is most appropriate to extensively analyze and discuss the legal concepts and key aspects in the reviewed legislation. Furthermore, the comparative methodology was selected because of its suitability to identify, analyze and explain similarities and differences of the reviewed legislation.

Initially, this dissertation reviewed the international, regional and national frameworks governing the environmental regulation of offshore explorations to identify the strengths and weaknesses of these regulations in addressing the risk of pollution in the marine environment. Secondly, since the offshore explorations are almost exclusively regulated by national legislation (Jessen, 2018), the dissertation examined both Ghana and Norway's offshore environmental regime, identified their key strengths and compared these with Somalia's regime to identify the gaps. Based on these examinations and comparisons, the research provided recommendations on how to address the identified gaps and weaknesses.

Finally, secondary data from academic research including articles and textbooks were analyzed to further explain the impacts of offshore oil and gas exploration on the marine environment. Non-academic writings are included in the analysis to provide necessary background information and the current trend of the offshore industry.

1.7. Assumptions and Limitations

The oil and gas sector comprises two major parts: 'upstream' – the exploration and production sector of the industry (exploration and production); and 'downstream' – the sector which deals with refining and processing of crude oil and gas products, their distribution and marketing (E&P Forum & UNEP IE, 1997). This research exclusively focuses on the environmental regulatory gaps relating to upstream offshore oil and gas activities and identifies potential environmental risks likely to arise during exploration and production. The issues of political and economic dimensions in the country related to oil and gas in general is not analyzed. The questions that will inform this research are intentionally brought because of the limited availability of academic data and research in the area. The vast majority of the literature on Somalia's oil and gas sector is focused on the political factor and possible implications of the resources because interest in research in this area was initiated by the crisis of governance that Somalia was experiencing during the two-decade-long conflict.

1.8. Structure of the Dissertation

This dissertation is structured into six chapters. Chapter one deals with the general introduction and background of the study, problem statement, objectives of the study, research questions, methodology, expected results and assumptions and limitations of the study. Chapter two discusses the history of oil and gas in Somalia, legacy contract holders, state of environment and the potential environmental impact of offshore oil and gas activities. Chapter three provides an examination of the existing international and regional legal frameworks governing environmental pollution from offshore oil and gas activities as well as Somalia's obligations under these frameworks. Chapter four

discusses the offshore oil and gas environmental legal and regulatory frameworks of Ghana and Norway as a benchmark of possible best practices. Chapter five examines the overall legal and regulatory framework of Somalia governing the environmental pollution and compares with those of Ghana and Norway discussed in chapter four. Chapter six comprises the main conclusion and recommendations.

2. CHAPTER TWO: OIL AND GAS IN SOMALIA

2.1. Introduction

Oil and gas explorations in Somalia has been in progress for quite a long time however, recently The Federal Government of Somalia boosted these exploration activities. The primary purpose of this chapter is to discuss the history of oil and gas in Somalia, legacy contract holders and the potential environmental impact of offshore explorations.

2.2. History of Oil and Gas in Somalia

The history of oil exploration in Somalia dates back to the 1920s; however, significant efforts of explorations only began in 1948 (World Bank, 1988). This was when several major IOCs including Shell, AGIP,² and Sinclair Oil Corporation started to conduct explorations and drillings in Somalia (Balthasar, 2014). The late 1940s -1950s witnessed a worldwide surge in oil explorations (Cantoni, 2017); Somalia and the wider Horn of Africa region was considered to have similar oil reserves to the Arabian province (Purcell, 2014).

Explorations significantly increased in the 1960s after several companies including BP, Gulf,³ Texaco, ARCO and Elf⁴ signed concession agreements with Somalia and started to carry out surveys and exploratory drillings. The trend was interrupted after the 1969 coup and the subsequent war with Ethiopia between 1977 and 1978 which made the investment climate less favorable for foreign investors. As a result of these major changes in the country, exploration activities significantly declined and completely ceased after 1977 (World Bank, 1980).

In the 1980s, explorations slightly re-accelerated due to the increase in oil prices which encouraged oil companies to resume their activities in Somalia. The government spearheaded with renewed petroleum exploration promotion efforts and even though

² Now Eni
³ Gulf Oil LP
⁴ Now Total

there were no successful discoveries, the government was able to negotiate and draw in five additional oil companies, including CONOCO and Chevron. A total of 13 blocks both onshore and offshore were awarded⁵ in the late 1980s (World Bank, 1991).

As a result of these exploration efforts, some 60 wells, mostly onshore, were drilled during the time preceding 1991, however, no commercial discoveries were made during that time (World Bank, 1991). Most of the wells yielded only minor shows of oil and gas except one – the Daga Shabel-1 well in the northern part of Somalia which was discovered in 1959. The validity of the gathered geophysical data and the explorations were questioned, and those unsuccessful explorations were linked to poor quality data and the use of wrong geologic models (Spectrum, 2018; World Bank, 1988).

As for natural gas, two discoveries were made by Sinclair in the 1960s in the areas of Afgoye and Coriole in southern Somalia. It was estimated that the combined areas held over 13 million cubic feet per day, but the development was declared to be economically unsustainable due to the lower market prices. Although the Government reinitiated the development of Afgoye gas field in the early 1980s in order to use it for generation of power for the Mogadishu market, the project was ultimately terminated in 1991 (World Bank, 1993).

In early 1991, Somalia descended into civil war and explorations were suspended after oil companies withdrew from Somalia. Between 1991 and 2012, oil explorations were more or less in hibernation, although Somaliland⁶ and Puntland regional authorities unilaterally issued a number of concessions to oil companies⁷ in order to conduct explorations in some existing oil blocks in the northern part of the country. Some of these

⁵ Chevron - 3 blocks (one offshore in Western Gulf of Aden; CIPC - 2 blocks along mid-Gulf of Aden; Occidental - 2 blocks (one offshore) near the tip of the Horn; Conoco - 3 blocks in the Nogal Uplift; Amoco - 3 blocks adjacent to and including most of the Afgoy-Coriole area (in Block 9).

⁶ Self-declared independent state from Somalia since 1991.

⁷ Somaliland issued exploration licenses to DNO and Genel. Puntland issued exploration licenses to Range Resources, Africa Oil and Horn Petroleum Corporation.

blocks are claimed by major IOCs which left Somalia in 1991 and hold licenses that were put under force majeure⁸ (Bamberger & Skovsted, 2016).

2.3. Recent Developments

Offshore oil and gas development in Somalia has recently become the focus of the Somali Government in its efforts to restart the oil exploration activities after a period of dormancy for almost thirty years. This being said, the offshore Somalia has largely remained unexplored, with only six wells along the entire length of the eastern offshore basin⁹ and two along the northern offshore basin¹⁰ having been drilled prior to 1991.

In 2013, Soma Oil and Gas was licensed to conduct the first major 2D long offset exploration of a seismic survey in offshore Somalia. The survey covered an area of 20,500 kilometers in both shallow and deep water off the southern coast of Somalia along the Indian Ocean. The survey was completed in June 2014, but the seismic processing and delivery were concluded in 2015. An additional 20,185 km of 2D long-offset seismic data was acquired and processed by Spectrum in 2016. The second-round survey was intended to complement the seismic data acquired in 2014.

These two modern seismic explorations allowed to significantly study the offshore Somalia and contributed to the efforts of gathering the necessary data that has been previously missing due to the lack or limited exploration of deep waters underneath 1000m. Also, it facilitated the development of new theories and understanding of the crustal structure and evolution of offshore Somalia (Stanca et al., 2016).

Based on the interpretation of seismic explorations, a widespread distribution of good quality source rocks was found, which is an indication that there is an oil window in commercial quantities within the continental margin of Somalia and the potential of finding

⁸ On the definition of (Force Majeure Clause, n.d.) See USLegal: "Force Majeure clause is a provision in a contract that excuses a party from not performing its contractual obligations that becomes impossible or impracticable, due to an event or effect that the parties could not have anticipated or controlled. These events include uncontrollable events such as war."

⁹ Meregh-1 (1982), Garad Mare-1 (1977), Guardafui-1 (1975), Ras Binnah Marine 1 (1984), Gumbah 1(1986) and Hafun 1 (1974).

¹⁰ Bandar-Harshau 1 (1984) and Dab Qua 1 (1984)

reserves that match those in East Africa (Stanca et al., 2016). However, proof of the presence of oil reserves has yet to be made. In the meantime, the lack of proof of oil reserves in Somalia both onshore and offshore has not stopped IOCs to continue claiming their concession rights and interest in acquiring new acreages (Reuters, 2019). The road to proving oil reserves in commercial quantities requires additional exploration and drilling of control wells to test the maturity of the source rocks.

Currently, the Somali Government has opened the first offshore license round and envisaged to complete the licensing and signing of the production sharing agreements (PSAs) before the end of 2019 (Somalia, 2019b). The Government also expects exploration companies to commence their exploration as early as 2020 (Somalia, 2019a). Shell and ExxonMobil have renewed their contracts with the Federal Government, settling issues related to surface rent on oil blocks accumulated since 1990 after their declared force majeure (Reuters, 2019).

2.4. Legacy Contract Holders

Major international oil companies (IOCs) have previously dominated the oil explorations in Somalia. The outbreak of the civil war in 1991 and the collapse of the state forced these oil companies to abandon their exploration activities in Somalia and to declare force majeure (Balthasar, 2014; Fineman, 1993). Since then, oil explorations activities largely remained stagnant because the security situation in the country did not allow these companies to return and resume explorations. The recent normalization of the security situation in the country and the recovery of Government institutions have revived the discussion about natural resources, in particular, the oil and gas.

The Government of Somalia honors previous agreements signed with oil companies prior to 1991 as per Article 59 of the Petroleum Law which also requires the Government to approach these companies and ask them to restart the exploration activities. The Petroleum Law stipulates an approach of aligning the old contracts with the new PSA model which includes different terms than previous PSAs.

2.5. State of the Environment in Somalia

The Somali Coastline is home to a diverse of marine living resources and its warm tropical waters and coral reef systems support hundreds of species of marine life which are also essential to the livelihoods of many coastal communities (Glaser, Roberts, Mazurek, Hurlburt, & Kane-Hartnet, 2015). In addition, its Gulf of Aden forms part of one of the world's major shipping routes, carrying over 11% of global seaborne traded oil (Migiro, 2019).

However, Somalia's marine environment has been significantly neglected and damaged due to the sociopolitical and economic instability that the country has experienced between 1991 and 2012 (Farah, 2017). The 2016 National Development Plan and the 2013 Somali Maritime Resource and Security Strategy acknowledge the environmental threats and challenges to the marine environment as a result of land-based pollution, dumping of toxic and hazardous waste, illegal fishing, absence of laws and regulations as well as enforcement capacities (Somalia, 2013, 2016). In addition, oil pollution from ships is and has been a major problem to the Somali marine environment due to the location of Somalia next to the Gulf of Aden, which is a major oil tanker route (UNEP, 1984, 2005).

Pollution from offshore oil and gas activities does not currently pose a serious threat to the marine environment since the activities are currently limited to conducting seismic surveys which has been completed without any incident (Ministry of Petroleum & Mineral Resources, 2016). However, with the recent government boost of explorations (seismic surveys) in the offshore Somalia, the Government recognized the potential risk and the challenges facing the marine environment and the need to adequately regulate the offshore oil and gas activities (Somalia, 2013, 2016).

2.6. Potential Environmental Impact of Offshore Oil and Gas Activities

With the increasing demand of energy and the consumption of oil and gas as the primary source of energy (BP, 2019), there are clear benefits related to major discoveries of such

resources. Nevertheless, exploration and production activities inherently carry risks such as pollution, oil spills and environmental degradation. Explorations are conducted both onshore and offshore, but one-third of the total oil and gas extracted today comes from offshore reserves (World Ocean Review, 2014).

Offshore oil and gas exploration and production activities have a long history of pollution incidents that damage the marine environment due to incidents like the Santa Barbara 1969 oil spill off the coast of Santa Barbara, California, the Piper Alpha 1988 disaster in the North Sea and the Deepwater Horizon 2010 disaster in the Gulf of Mexico.

Even though the number of major incidents is relatively low, the magnitude of their impact is quite serious and detrimental to the marine environment (Kingston, 2002; Peterson et al., 2012). This is mainly due to the release of significant amounts of oil to the marine environment which can alter the landscape of the seabed, disturbing the behavior of the marine ecosystem, and the destruction of marine species.

In a broad sense, the environmental impact depends on a number of factors, including the stage, size, and complexity of the exploration. The nature of the marine environment where the explorations are conducted, the sensitivity of the surrounding areas, industry management practices and guidelines developed by the International Association of Oil & Gas Producers (IOGP),¹¹ International Petroleum Industry Environmental Conservation Association (IPIECA) and the International Chamber of Commerce (ICC) for preventing and mitigating pollution as well as the technology employed. All contribute to the wider factors that need to be considered for the planning, operation, as well as the decommissioning of offshore installations. However, the discussion of these voluntary guidelines is well beyond the scope of this dissertation.

Offshore oil and gas activities have direct interaction with the marine environment. The impacts of these activities are recorded and exposure to crude oil or noise can significantly impact marine species, populations, causing behavioral disturbances, including changes in feeding, productivity and migration (ITOPF, 2011; Panjabi, 2010;

¹¹ Originally called the E&P Forum

Saadoun, 2015; Shahidul Islam & Tanaka, 2004). When looking at the Deepwater Horizon oil spill, it is estimated that the damages to BP, the environment, and the US gulf coast economy totaled \$36.9 billion (Smith, Smith, & Ashcroft, 2011). Approximately 5 million barrels of oil were released to the water (Sumaila et al., 2012), and in the process, different marine species such as marine mammals, sea turtles, sharks, and other fishes were exposed to huge amounts of oil and dispersants. Undeniably, the above is a good example of why the cost of a single oil spill to the marine and coastal ecosystems can sometimes outweigh the value of resources explored. In 2013, the economic value of fisheries and marine ecotourism of Belize – a country on the eastern coast of Central America – was estimated to generate around US\$ 183 million per year (Cisneros-Montemayor, Kirkwood, Harper, Zeller, & Sumaila, 2013). It's also estimated that in the short term the maximum revenue from oil extraction is higher, but in the long-term benefits of marine fisheries and ecotourism are twice more.¹²

Despite the above-mentioned impacts, there are many more potential undocumented impacts which remain unknown due to the complex nature of the marine ecosystem, the difficulty of conducting assessment research at the depth where most of the drillings are conducted, and because of the technology and extended search for oil deposits, which allowed offshore explorations to taking place in a variety of environments, including coastal waters, deep waters, very and ultradeep waters that support unique ecosystems and biodiversity (Cordes et al., 2016).

For instance, the Gulf of Mexico is a diverse ecosystem and home to a number of species of marine mammals and sea turtles (Waring et al., 2016). However, a significant decrease in its population has been recorded and the Gulf of Mexico oil spill is one of the factors causing the death of these species (Hayes et al., 2017).

Similarly, the Coastal East Africa region is also known for its biological diversity and recently oil and gas exploration activities have increased in the region. Some of 11,000

¹² During a 50-year (two generation) period, total discounted benefits from marine fisheries and ecotourism are estimated at US\$ 5.1 billion, compared to US\$ 3.2 billion from offshore oil revenue.

marine species including humpback whales, dugongs, dolphins, whale sharks and five species of sea turtles are present within these ecosystems (UNEP-Nairobi Convention and WIOMSA, 2015). According to UNEP, this region's ecosystems and the marine resources they hold are already significantly damaged or under threat from cumulative impacts¹³ including the offshore oil and gas activities. Somalia belongs to this region and there are many offshore activities taking place in other countries of the region.¹⁴

Each stage of offshore oil and gas activities poses some level or kind of impacts to the marine environment. The exploratory phase may comprise seismic surveying and exploratory drilling. The seismic surveying stage is generally short and designed to locate any potential oil reserves, hence sound waves emitted to the sea can impact adversely the marine animals. Evidence suggests that marine mammals' hearing may be affected during this stage (Southall et al., 2008). The exploratory drilling phase typically lasts a couple of months. If significant deposits are discovered during this phase, then long-term well appraisal, development and production follow. During this phase, additional impacts both direct and indirect may occur, such as major spills. The final stage, which involves decommissioning of the well may also result in a series of impacts to the biodiversity and loss of habitat.

It is noteworthy that the impact of offshore oil and gas activities is not only limited to major incidents. Minor incidents and spills occur frequently during operations. These small spills generally receive less attention and it is difficult to estimate their true impact (Jesus, 2016; Schrope, 2013).

2.7. Conclusion

According to (E&P Forum & UNEP IE, 1997) the potential impacts of offshore activities that are discussed in this section are impacts which can be avoided or mitigated with the

¹³ Other impacts include coastal erosion, siltation and sedimentation, pollution from untreated sewages, litter, agriculture and industrial effluents, and oils from ports and oil tankers, overharvesting, intentional or accidental capture of vulnerable species, degradation of coastal habitats, climate change (floods, sea level rise, rising of sea water temperature, coral bleaching, etc).

¹⁴ Kenya, Tanzania, Mozambique

implementation of proactive assessments, and management of potential risks. The IOGP, IPIECA and the ICC have all developed voluntary guidelines, good practice, and knowledge for the industry to adequately address the real environmental and social impacts. Although these guidelines have significantly developed during the last two decades, they are quite general and fail to address different ecosystems and regional variations.

The adverse implications of offshore activities can be addressed with proper management systems, that assess all stages of exploration activities, the geographic scale, as well as the magnitude of potential impact and practical intervention for restoration (E&P Forum & UNEP IE, 1997). However, these are the responsibilities of the companies in the industry, and generally, these companies have a tendency to neglect strict implementation of these systems. Sometimes States rely heavily on the expertise and advice of the exploration companies to provide a wide range of services including environmental assessments or risk management. This means the implementation of tailored environmental regulation is crucial. Therefore, Government regulations are put in place to provide adequate governance mechanisms.

3. CHAPTER THREE: EXAMINATION OF THE LEGAL FRAMEWORK GOVERNING ENVIRONMENTAL POLLUTION FROM THE OFFSHORE OIL AND GAS ACTIVITIES

3.1. Introduction

This chapter examines the existing international and regional legal frameworks governing environmental pollution from offshore oil and gas activities. Additionally, Somalia's obligation in these international and regional legal frameworks. The analysis mainly focuses on how the international and regional frameworks address the issue of marine environment pollution caused by the offshore oil and gas activities and their importance to the emerging offshore oil and gas industry in Somalia. The chapter will cover analysis of several legal instruments dealing with marine pollution including UNCLOS, the 1972 London Convention and the 1996 Protocol, the 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC 1990), and the International Convention for the Preservation of Pollution from Ships (MARPOL 73/78). Furthermore, the 1985 Convention for the Protection, Management, and Development of the Marine and Coastal Environment of the Eastern African Region (Nairobi Convention) and the 1982 Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment (Jeddah Convention) are examined.

Finally, the chapter will provide a summary on the effectiveness of the examined international and regional conventions and the obligations they impose on Somalia.

3.2. International Conventions

3.2.1. *United Nations Convention on the Law of the Sea 1982 (UNCLOS)*

UNCLOS¹⁵ is considered to be a comprehensive and widely recognized legal document on the Law of the Sea. In addition to the coastal State sovereign rights over natural resources in its EEZ¹⁶ or continental shelf, including beyond 200 nm,¹⁷ the UNCLOS establishes a general obligation for state parties to protect the marine environment.¹⁸ More specifically, Part XII of the UNCLOS provides an extensive and the most important legal instrument, as it lays down the fundamental obligation of all States to protect and preserve the marine environment.

Perhaps the most important provisions in Part XII can be found in Articles 194(3), 208 and 204 of the UNCLOS. With regard to offshore oil and gas exploration, under UNCLOS States are obliged to undertake all necessary measures to prevent, reduce and control pollution of the marine environment in the areas under their jurisdiction.¹⁹ Accordingly, States are further obliged to adopt laws and regulations to ensure that exploration and exploitation activities within the area of their maritime jurisdiction do not cause damage by pollution.²⁰

Under UNCLOS every State is obliged to undertake measures to protect and preserve the marine environment, but within the areas of national jurisdiction, it is the Coastal States' responsibility to protect the marine environment from pollution resulting from any exploration and exploitation activities. Consequently, only the Coastal State has the exclusive right to authorize exploration and exploitation activities and subsequently regulate these activities in the areas under their maritime jurisdiction. Therefore,

¹⁵ *United Nations Convention on the Law of the Sea*, 10 December 1982 and entered into force on 16 November 1994, 1833 U.N.T.S. 3 [UNCLOS].

¹⁶ Article 56(1) lit. (a) of UNCLOS.

¹⁷ Article 77(1) of UNCLOS.

¹⁸ Articles 56, 77, 193 of UNCLOS.

¹⁹ Articles 192 and 194(1) of UNCLOS.

²⁰ Article 208 of UNCLOS

UNCLOS establishes a balance between the rights of the State to exploit its natural resources and obligations to protect the marine environment.

Given the fact that the Coastal States can adopt their own environmental policies related to offshore activities, it is also their responsibility to ensure that exploration activities within their maritime jurisdiction or control do not cause any environmental damage or pollution to other States or areas beyond their national jurisdiction.²¹ Accordingly, UNCLOS provides a set of obligations on States including responsibility to carry out environmental monitoring and surveillance on the risks or effects of pollution of the marine environment, while publishing the obtained information.²² Also, to carry out an assessment of potential effects of offshore activities to the marine environment and communicate such reports when there is a reasonable ground that planned actions under their jurisdiction or control may cause substantial pollution and harmful changes to the marine environment.²³

In respect to liability for pollution damage resulting from offshore exploration and exploitation activities, UNCLOS requires States to fulfill their international obligation to protect and preserve the marine environment and in case of failing to fulfill their obligation, they shall be liable in accordance with international law.²⁴ To this effect, States are required to adopt measures to ensure prompt and adequate compensation for the damage caused by pollution of the marine environment.²⁵ Although the principle of liability is established under UNCLOS, it is still under intense debate. The 2009 Montara oil spill is one of the most complex examples of a such situation. The oil platform was located in the Australian EEZ and the incident heavily affected the waters of Indonesia, but Australia is yet to compensate for the damage caused by the pollution of its offshore activities (Kahfi, 2019).

²¹ Article 194(2) and (4) of UNCLOS.

²² Articles 204 and 205 of UNCLOS

²³ Article 206 of UNCLOS

²⁴ Article 235 (1) of UNCLOS

²⁵ Article 235 (2) of UNCLOS

UNCLOS includes provisions that set the requirement for States to undertake cooperation on a global and regional basis in order to establish rules, standards, best practices and procedures to protect and preserve the marine environment from pollution.²⁶ This principle of cooperation is a common thread across all international conventions and provisions including UNCLOS.²⁷

Nevertheless, with the expectation of future exploitation of marine minerals in the international seabed area, Part XII also includes provision applicable to activities in the Area which is beyond national jurisdiction. However, it is important to note that the UNCLOS also refers that mining in the area shall be subject to the regulation of the Area regime - the International Seabed Authority. This shows how comprehensive Part XII is in dealing with environmental issues, however, the discussions regarding marine pollution due to activities in the Area is well beyond the scope of this research.

Lastly, another important aspect in UNCLOS regarding the offshore oil and gas pollution is that it enables international bodies such as the International Tribunal for the Law of the Sea (ITLOS) to hold polluting States liable in the event of a serious environmental damage in its continental shelf as per Articles 194(2) and 235(1). In such cases, neighboring state which is affected by the pollution can simply constitute legal proceedings in ITLOS.

Somalia signed UNCLOS in 1982 and ratified it in 1989 without declarations or reservations as per Article 1 of Decree no. 14 of the 9th February 1989, instrument of ratification of UNCLOS. Despite being one of the first signatories of the UNCLOS, Somalia has made the declaration of its EEZ only in 2014 with Presidential Proclamation.²⁸ This Proclamation has reinforced the harmonization between the Somali national legislation²⁹ and the regime of maritime zones of UNCLOS, in particular, the

²⁶ Article 197 of UNCLOS

²⁷ Articles 63(3), 64(1), 65, 66(2) and (4), 69(3), 74(3), 83(3), 100, 117, 118, 119, 123, 194(1), 197, 200, 242, 266, 270 and 273 of UNCLOS.

²⁸ Proclamation by the President of the Federal Republic of Somalia, 30 June 2014 [Proclamation]

²⁹ Law No. 5 of 26 Jan 1989: Somali Maritime Law and Decree no. 14 of the 9 February 1989: Instrument of ratification of the UNCLOS

EEZ. Apart from the provisions included in the Proclamation, which states the sovereign rights in its EEZ, Somalia has not enacted any special national legislation concerning environmental protection in regard to the exploitation of its offshore natural resources. With that being said, there are some legislation including Somali Fisheries Law and the Petroleum Law. Both of these instruments contain provisions dealing with environmental protection.

UNCLOS provides with clear rules and provisions that create general obligations on States to protect and preserve the marine environment while exercising their sovereign right to exploit the natural resources. Indeed, as a framework, it is comprehensive but often in general terms and less definitive standards. Another major drawback is that UNCLOS provides a considerable authority to the States in regulating and enforcing these provisions contained therein. Sometimes this could allow States to adopt a less stringent legal regime regarding the protection and preservation of the marine environment from pollution caused by offshore exploration activities.

3.2.2. Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matters 1972 (1972 London Convention)

Dumping at sea is considered as one of the major sources of marine environmental pollution. It still remains a major threat both to the marine environment and human health specifically in some areas around the world (Greenberg, Sexton, & Vearrier, 2016). The negative impact of the offshore oil and gas exploration to the marine environment is not limited to exploration and production of petroleum resources, but also extends to disused or decommissioned facilities offshore.

Abandoned or disused offshore installations and structures represent a serious threat to the marine environment, safety, and navigation. Furthermore, since the offshore oil and gas production has become more routine, it is estimated that there are currently around 900 large-scale oil and gas platforms around the world (World Ocean Review, 2014). Initially, under UNCLOS Coastal States are allowed to construct, operate and use such

installations and structures in the areas where they enjoy jurisdiction.³⁰ However, States are also obliged to undertake measures of pollution prevention, as well as safety of construction and use of offshore installations and structures.³¹

According to (Brown, 1992) the obligation of the removal of abandoned or disused offshore installation or structures is not well defined under UNCLOS, but it is rather left for the Coastal States to decide.³² It is also imperative to highlight that Article 5(5) of the 1958 Convention on the Continental Shelf³³ which states “Any installations which are abandoned or disused must be entirely removed.” This Article sets an explicit obligation on the issue, but it has been superseded by the UNCLOS. Therefore, the major international law concerning the disposal of offshore installations is the 1972 London Convention³⁴.

The main objective of 1972 London Convention is the prevention of pollution associated with dumping into the sea from ships and aircraft. The definition of a ship includes fixed and floating offshore installations.³⁵ Surprisingly, the 1972 London Convention explicitly excludes the disposal of wastes or other matter related to offshore oil and gas activities³⁶ and adopts the approach of permitted unless otherwise prohibited.³⁷ This means that disposal of offshore platforms and other man-made structures is permitted subject to a prior special permit.

³⁰ Article 60, 80, 56(1) lit. (b) of UNCLOS.

³¹ Article 60 of UNCLOS

³² Articles 60(3), 147(2) lit. (a) and 249(1) lit. (g) of UNCLOS.

³³ *Convention on the Continental Shelf 1958*, adopted 29 April 1958 and entered into force 10 June 1964, 499 U.N.T. S 311 [1958 Convention on the Continental Shelf]

³⁴ *Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter*, 29 December 1972 and entered into force on 30 August 1975, 1046 U.N.T.S. 120 [1972 London Convention]

³⁵ The 1972 London Convention defines dumping as: 1) Any deliberate disposal at sea of wastes, or other matters from vessels, aircraft, platforms or other man-made structures at sea; 2) Any deliberate disposal at sea of vessels, aircraft, platforms or other manmade structures at sea.

³⁶ Under Article 3(1) lit. (c) of the 1972 London Convention: The disposal of wastes or other matter directly arising from, or related to the exploration, exploitation and associated off-shore processing of sea-bed mineral resources will not be covered by the provisions of this Convention.

³⁷ Article 4 of 1972 London Convention

The London Protocol to 1972 London Convention was adopted in 1996³⁸ and it was a significant development in regard to offshore oil and gas installations. The London Protocol maintained the definition of dumping in London Convention, but expanded it to explicitly include “Any abandonment or toppling at site of platforms or other man-made structures at sea, for the purpose of deliberate disposal.”³⁹ With this amendment, the abandonment, or toppling, of offshore installations is now covered under the London Protocol which 1972 London Convention does not.

The London Protocol establishes more strict requirements than London Convention, where all dumping is prohibited except those included in the reverse list.⁴⁰ In this particular approach, no dumping is allowed unless it is included in the approved list. Accordingly, the concept of precautionary principle⁴¹ is introduced where parties are required to take appropriate preventive measures in relation to the dumping of waste into the marine environment. More importantly, the burden of proof is shifted to States when carrying out dumping.⁴²

The bottom line is that the 1972 London Convention took steps to protect the marine environment and prevent pollution of the sea from dumping of wastes and other matter. Surprisingly, it excluded the dumping or abandonment of offshore oil and gas installations or structures.⁴³ Thus, it means that this instrument is totally irrelevant and more specifically its application to offshore oil and gas installations or structure is limited. On the other hand, the London Protocol which amended 1972 London Convention only applies to States which are Parties to it and presently, there are currently 51 Parties to the London Protocol. Somalia, however, is not a party to the 1972 London Convention and the London Protocol.

³⁸ 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972, adopted 7 November 1996 and entered into force 24 March 2006, 36 ILM 1 [London Protocol]

³⁹ Article 1.4.4 of the London Protocol

⁴⁰ Article 4 (1) of the London protocol

⁴¹ Article 3 of the London Protocol

⁴² Article 4 of the London protocol

⁴³ Article 1.4.2.3 of the London Protocol.

3.2.3. International Convention on Oil Pollution Preparedness, Response and Co-operation 1990 (OPRC 1990)

At the international level, the OPRC 1990⁴⁴ - the International Maritime Organization (IMO) developed international legal framework - regulates the issues of response, preparedness and cooperation to oil pollution incidents. The OPRC 1990 requires State Parties to establish effective national and regional pollution incident response system amongst other relevant mechanisms including establishing a competent national authority and a national contingency plan.⁴⁵

In addition, States shall require operators of offshore platforms to have an oil pollution emergency plan in place⁴⁶ and report the discharges or presence of oil at sea.⁴⁷ Accordingly, upon receiving such reports, States shall communicate this information with parties whose interest may or likely be affected by the incident.⁴⁸ The OPRC 1990 extends its application to any fixed or floating offshore structure engaged in gas or oil exploration, exploitation or production activities.⁴⁹

In accordance with the OPRC 1990, States are encouraged to cooperate in exchanging information, research and development and practical experiences in oil spill response as well as establish national and regional levels cooperation in preparedness and response.⁵⁰ Despite the lack of a comprehensive international legal regime that regulates pollution of the marine environment from seabed activities in particular offshore oil and gas exploration, this convention is perhaps the most vital legislation in this regard. Somalia, however, is not a party to the OPRC 1990.

⁴⁴ *International Convention on Oil Pollution Preparedness, Response and Co-operation*, 30 November 1990 and entered into force on 13 May 1995, 1891 U.N.T.S. 51 and 30 ILM 733 (1990) [OPRC 1990]

⁴⁵ Article 6 of the OPRC 1990

⁴⁶ Article 3 of the OPRC 1990

⁴⁷ Article 4 (c) of the OPRC 1990

⁴⁸ Article 5 of the OPRC 1990

⁴⁹ Article 2 of the OPRC 1990

⁵⁰ Articles 3(2), 4(1) lit. (a) (ii) and lit. (b) (ii), 5(1) lit. (c), 6, 7(3), 8, 9 and 10 of the OPRC 1990.

3.2.4. International Convention for the prevention of pollution from ships 1973/1978 (MARPOL 73/78)

MARPOL 73/78⁵¹ primarily deals with vessel-source pollution, but it also covers floating offshore platforms within its definition of a ship.⁵² Accordingly, this definition encompasses floating production storage and offloading unit and floating and storage unit. In this respect, when above-mentioned structures are engaged in offshore exploration activities, it is required to comply with requirements applicable to ships of 400 gross tonnage and above other than oil tankers.⁵³ In addition, other requirements such as oil discharge monitoring and controlling systems, maintaining a record of all operations, prohibition of discharge of oil or oil in mixtures into the sea except when content is less than fifteen parts per million, as well as installing with tanks for oil residues and oil filtering equipment.⁵⁴

Although MARPOL 73/78 is mainly focused on pollution from ships and does not specifically address operational discharges from offshore oil and gas production. There are, however, some provisions applicable and with their proper enforcement can contribute towards the protection of the marine environment from pollution resulting from offshore platforms. These provisions include those regulating the monitoring and reporting of incidents and conducting casualty investigations, procedures for the settlement of disputes, communication of information and promotion of technical cooperation. Apart from that, it is worth to highlight that the only operational discharge from offshore oil and gas activities that fall within the scope of MARPOL 73/38 are the discharges of drill cuttings and other solid waste. Somalia has ratified the MARPOL 73/78.⁵⁵

⁵¹ *International Convention for the Preservation of Pollution from Ships*, 2 November 1973 and entered into force on 2 October 1983, as amended by the *Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973*, 1340 U.N.T.S. 61 [MARPOL 73/78].

⁵² Article 2 of MARPOL 73/78

⁵³ Annex I, reg 39 of the MARPOL 73/78

⁵⁴ Annex I, reg 39 of the MARPOL 73/78. See also IMO Guidelines: MEPC.311(73); MEPC.139(53) and MEPC/Circ.406

⁵⁵ Decree no. 71 of 1 November 1989: Instrument of ratification of MARPOL 73/78

3.3. Regional Conventions

3.3.1. *Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region 1985 (Nairobi Convention)*

The Nairobi Convention⁵⁶ deals with prevention, reduction of pollution in the Eastern African Region. It provides a legal framework and coordinates the efforts of the countries of the region to plan and develop programs that strengthen their capacity to protect, manage and develop their coastal and marine environment sustainably.

With regard to the offshore oil and gas exploration, Nairobi Convention mandates the Parties to take all appropriate measures to prevent, reduce and combat pollution resulting directly or indirectly from exploration and exploitation of the sea-bed and its subsoil.⁵⁷ In addition, it requires the Parties to conduct an environmental impact assessment for major projects which may result in substantial pollution in the convention area.⁵⁸ Notably, Nairobi Convention introduces the requirement of an obligatory environmental management on the Contracting Parties.

The Nairobi Convention includes the common provisions including cooperation in dealing with pollution emergencies, scientific research and monitoring cooperation, exchange of information and adopting rules and procedures to regulate the liability and compensation for damage resulting from pollution of the convention area.⁵⁹

Another important aspect of Nairobi Convention is the Protocol concerning Cooperation in Combating Marine Pollution in cases of Emergency in the Eastern African Region. The protocol includes many of the original articles of the Convention, but the important aspect of the protocol is that it brings onboard provisions similar to those found in OPRC 1990

⁵⁶ Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region 1985, adopted 21 June 1985 and entered into force 30 May 1996 [Nairobi Convention]

⁵⁷ Article 8 of the Nairobi Convention

⁵⁸ Article 13 of the Nairobi Convention

⁵⁹ Articles, 11, 14, 15 of Nairobi Convention

including establishing and maintaining national response systems, enacting necessary legislation and designation of a national authority.

Somalia is one of the first four Contracting Parties that adopted and first to ratify the Nairobi Convention.⁶⁰ Although the Nairobi Convention was adopted in 1985, it did not come into force until 1996. Presently, the Nairobi Convention and its protocols are ratified by 100% of the Contracting Parties.

Table 1 Ratification of the Nairobi Convention

Countries/Territories	Entry into force	Ratification⁶¹	Simple signature
Comoros	May 30, 1996	Sep 26, 1994 [1]	Jun 22, 1985
France	May 30, 1996	Aug 18, 1989 [1]	Jun 22, 1985
Kenya	May 30, 1996	Sep 11, 1990 [1]	Jun 22, 1985
Madagascar	May 30, 1996	Jun 26, 1990 [1]	Jun 22, 1985
Mauritius	Oct 1, 2000	Jul 3, 2000 [1]	Jun 22, 1985
Mozambique	Jun 2, 1999	Mar 4, 1999 [1]	Jun 22, 1985
Seychelles	May 30, 1996	Jun 20, 1990 [1]	Jun 22, 1985
Somalia	May 30, 1996	Mar 1, 1988 [1]	Jun 22, 1985
South Africa	Aug 14, 2003	May 16, 2003 [1]	Jun 22, 1985
Tanzania, Un. Rep. of	May 30, 1996	Mar 1, 1996 [1]	Jun 22, 1985

Note. From (UNEP, 2015)

Since the adoption of the Nairobi Convention and its protocols, most of the Contracting Parties have developed a national capacity and contingency plan for preventing pollution in the event of an oil spill and ratified some of the relevant IMO instruments including MARPOL 73/78, OPRC 1990, CLC Convention and FUND 92. Surprisingly, apart from

⁶⁰ Decree no. 18 of 1 March 1988: Ratification of Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region 1985

⁶¹ [1] Ratification [2] Accession/approbation [3] Acceptance/approval [4] Succession [5] Consent to be bound [6] Definite signature

MARPOL 73/78, Somalia has not yet ratified these above-mentioned IMO instruments dealing with pollution at sea or established its national oil spill contingency plan.

3.3.2. Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment 1982 (Jeddah Convention)

The 1982 Jeddah Convention⁶² addresses the environmental protection from pollution in the Red Sea and Gulf of Aden. It was a response to the calling of the Article 123 of UNCLOS in which Coastal States of an enclosed or semi-enclosed sea are encouraged to cooperate and coordinate in their efforts of addressing pollution in marine environment. Furthermore, the Red Sea and Gulf of Aden are considered globally distinguished areas with great biodiversity, important marine resources as well as strategic to international shipping. As a result, under Annex 1 of the MARPOL 73/78, the Red Sea is identified as a special area in terms of the prevention of oil pollution from ships.

The Jeddah Convention has two important legally binding instruments namely the Action Plan for the Conservation of the Marine Environment and Coastal Areas in the Red Sea and Gulf of Aden and the Protocol Concerning Regional Cooperation in Combating Pollution by Oil and other Harmful Substances in Cases of Emergency.

The Convention has also established an independent intergovernmental body that is tasked to implement the convention⁶³ and entered into force in August 1985. Somalia is a party to Jeddah Convention and ratified in 1988.⁶⁴

Table 2 Date of ratification of the Jeddah Convention by the Member States

State	Date of Ratification
Djibouti	2-3-1998

⁶² The Regional Convention for the Conservation of the Red Sea and the Gulf of Aden Environment, 1982 adopted 14 February 1982 and entered into force 20 August 1985 [Jeddah Convention]

⁶³ Article XVI of the Convention Establishes a Regional Organization for the Conservation of the Red Sea and Gulf of Aden Environment (PERSGA)

⁶⁴ Decree no. 17 of 1 March 1988: Ratification of The Regional Convention for the Conservation of the Red Sea and the Gulf of Aden Environment, 1982

Egypt	31-5-1990
Jordan	7-9-1988
Saudi Arabia	22-5-1985
Somalia	1-3-1988
Sudan	5-6-1984
Yemen	29-5-1982

Note. From the Regional Organization for the Conservation of the Environment of the Red Sea & Gulf of Aden (PERSGA).

The Jeddah Convention sets out a legal regime that covers pollution resulting from exploration activities in all maritime zones including the territorial waters of the contracting parties.⁶⁵ It requires parties to take all appropriate measures to prevent pollution in the sea resulting from exploration and exploitation of the bed of the territorial sea, the continental shelf and the subsoil. In addition, it includes both fixed and floating platforms in its definition of a ship.⁶⁶ Also, it defines 'harmful substance' as any substance whose introduction or presence in the marine environment causes a danger threatening or impairing that environment.⁶⁷

Similar to Nairobi Convention, which is discussed above, Jeddah Convention also contains the traditional provisions including cooperation in dealing with pollution, scientific and technical cooperation and assistance, and assessment of potential environmental effects.⁶⁸ More specifically, Parties are required to take measures that enable an effective response to marine pollution including readily available equipment and qualified personnel and in the case of an emergency of pollution, Parties shall notify any other Contracting Party that is likely to be affected.⁶⁹

⁶⁵ Article 2 of Jeddah Convention

⁶⁶ Article 7 of Jeddah Convention

⁶⁷ Article 1 of Jeddah Convention

⁶⁸ Articles 9, 10, 11, 12 of Jeddah Convention

⁶⁹ Article 9 of Jeddah Convention

In 1995, three additional instruments were adopted under the framework of Jeddah Convention including the Protocol Concerning the Exchange of personnel and Equipment in the Case of Marine Emergency. The Protocol is intended to facilitate the exchange of information between the parties, the deployment and use of resources. The Protocol was further replaced with another Protocol Concerning Technical Cooperation to Borrow and Transfer Experts, Technicians, Equipment and Materials in Cases of Emergency which was adopted in 2009.

3.4. Conclusion

The relevant international conventions discussed in this chapter with respect to environmental regulation of the offshore oil and gas are mainly focused on placing general obligations on States to adopt necessary regulations and develop measures to prevent pollution in the offshore marine environment. Furthermore, it transfers responsibilities to regional organizations which indeed had a ground-breaking effect and achieved significance acceptance due to their ability to address the specific needs or expectations of the parties. Accordingly, Somalia is a party to two of such regional instruments namely, Nairobi and Jeddah Conventions. The reason why Somalia is a party to both Conventions is very simple. Somalia borders both the Indian Ocean on its east and the Gulf of Aden on its north.

These examined international and regional conventions place obligations on Somalia to protect and sustainably manage the offshore environment.

4. CHAPTER FOUR: EXAMINATION OF THE NORWAY AND GHANA LEGAL FRAMEWORKS GOVERNING ENVIRONMENTAL POLLUTION FROM THE OFFSHORE OIL AND GAS ACTIVITIES

4.1. Introduction

This chapter examines the legal and regulatory framework of both Ghana and Norway that regulate environmental pollution arising from offshore oil and gas activities. The chapter specifically analyzes how these two legal regimes address issues of environmental pollution resulting from upstream offshore oil and gas activities, foremost, Licensing system, environmental impact assessment, offshore installations, decommissioning, preparedness and emergency response as well as liability for pollution damages. In addition, the regulatory frameworks of both Ghana and Norway concerned with environmental pollution are also examined. The aim of the chapter is to identify how the above-mentioned key aspects are regulated in these two regimes of Norway and Ghana in order to compare with Somalia's legal and regulatory regime to benchmark common features and identify gaps.

4.2. The Norwegian Legal Framework for Regulating Offshore Environmental Pollution

Oil and gas activities in Norway are regulated by several Acts and the main statutes are the Petroleum Act No. 72 of 29 November 1996 (the Petroleum Act) and Pollution Control Act of 13 March 1981 (the Pollution Act). Associated regulations enacted pursuant to the above-mentioned Acts provide a more detailed framework. These regulations include The Petroleum Regulations No. 653 of 27 June 1997 (the Petroleum Regulations); Regulations Relating to Conducting Petroleum Activities, 2010 (the Activities Regulations); and Regulations Relating to Design and Outfitting of Facilities, etc in the Petroleum Activities, 2010 (the Facilities Regulation). The following examines the two main Acts and provides a brief overview of the regulatory framework and authority.

4.2.1. Petroleum Act No. 72 of 29 November 1996 (the Petroleum Act)

The Petroleum Act is the primary law responsible for petroleum activities in Norway including offshore oil and gas as stipulated under Section 1-4 of the Petroleum Act. The Petroleum Act regulates a wider spectrum of issues related to environmental pollution. First, it extensively regulates matters related to licensing of natural resources by establishing a comprehensive licensing and concession system. Section 1-1 of the Petroleum Act grants the State the proprietary right to the petroleum deposits in the Norwegian continental shelf (NCS) and the exclusive right to resource management. Accordingly, the State has the authority to issue licenses for exploration, production, and transport of petroleum. Under Section 1-3 of the Petroleum Act, the oil operators are required to obtain a license in order to conduct offshore oil and gas activity and in addition, approvals and permits are required in all phases from survey to decommissioning.

Furthermore, only the State is allowed to conduct offshore oil and gas activity without a license or approval, however, all activities are subject to the provisions of the Petroleum Act and other and regulations issued pursuant to the Act. Offered licenses include exploration, production or specific license to install and operate offshore pipelines as conferred under Sections 2-1, 3-3 and 4-3 of the Petroleum Act. The exploration license is non-exclusive and only gives the licensee⁷⁰ the right to explore for petroleum in specific geographical area for a period of three years, unless otherwise stipulated. The production license is exclusive for exploration and production as stated in Sections 2-1 and 3-3 of the Petroleum Act.

Secondly, as far as environmental pollution is concerned, the Petroleum Act provides a legal framework to tackle environmental pollution from offshore oil and gas activities in all phases starting from exploration, production as well as decommissioning. Section 3-1 of the Petroleum Act obliges the Ministry of Petroleum and Energy of Norway (MPE) to

⁷⁰ Section 1-6 (j) defines licensee as physical person or body corporate, or several such persons or bodies corporate, holding a licence according to this Act or previous legislation to carry out survey, production, transportation or utilisation activities. If a licence has been granted to several such persons jointly, the term licensee may comprise the licences collectively as well as the individual licensee.

conduct an environmental impact assessment to evaluate the possibility of pollution before awarding a production license and also to share the assessment for consultation with other various interested parties that could be affected.

After awarding a production license, and the licensee decides to develop petroleum deposits, Section 4-2 of the Petroleum Act requires a licensee to submit a plan for development and operation and plan for installation and operation⁷¹ to MPE for approval and the plan shall include environmental impact assessment as well as decommissioning plan.

Section 5-1 of the Petroleum Act states that the decommissioning plan shall include a detailed proposal for continued production or shutdown of production and disposal of facilities and, to that end, it is required to be submitted to MPE two to five years before the termination of the operations, before the license expires or is relinquished. Section 5-3 of the Petroleum Act mandates MPE to make a final decision on the disposal, limit the time for the implementation of the decommissioning plan and its decision shall, inter alia, be based on environmental considerations. Accordingly, the licensee must carry out the decision for disposal unless otherwise decided by the MPE.

With regard to emergency preparedness and response, Section 9-2 of the Petroleum Act establishes that licensees and other participants engaged in offshore oil and gas activities shall maintain emergency preparedness to deal with emergencies which may lead to pollution and in the case of an incident the licensee is obliged to take all necessary measures to prevent, and reduce pollution as well as to return the damaged environment to the condition it was before the incident. Furthermore, in the event of a pollution incident, MPE may take measures to deal with the pollution or ask a third party to make available necessary contingency resources at the expense of the licensee as conferred under Section 9-2 of the Petroleum Act.

⁷¹ PIO is only required when the offshore activity is involved with installation and operation of an offshore facility.

Lastly, the Petroleum Act regulates a licensee's liability for pollution damages. Chapters 7 and 8 of the Petroleum Act deal with liability issues. In the event of pollution damage or loss resulting from effluence or discharge of petroleum from a facility such as well, whether intentional or accidental, Chapter 7 of the Petroleum Act applies. Section 7-3 of the Petroleum Act states that the licensee is liable for such damage without regard for fault. Obviously, the Petroleum Act applies strict liability for any discharge of oil into the waters of NCS on the licensee and correspondingly to an operator⁷² which is usually appointed or approved by the MPE as conferred under Section 3-7 of the Petroleum Act. Chapter 8 of the Petroleum Act specifically deals with damages or loss to Norwegian Fishermen due to offshore oil and gas activities which is not covered under Chapter 7. The loss, in this case, may be caused by pollution from substances other than oil or waste or as a result of offshore installation (Section 8-1, Petroleum Act). If because of such offshore installation or activity impede substantially the fishermen activities, then according to Section 8-2 of the Petroleum Act the State is obliged to compensate those fishermen who suffered financial loss. Subsequently, the State may claim recovery from the licensee subject if the licensee was obliged to prevent such loss.

4.2.2. Pollution Control Act of 13 March 1981 (the Pollution Act)

The Pollution Act is the legal framework that deals with the protection of environment from pollution including pollution resulting from offshore oil and gas activities in the NCS (Sections 1 and 4). Although the main law that regulates the offshore oil and gas activities is the Petroleum Act, the Pollution Act specifically regulates the pollution permits required to carry out offshore activities that regularly result in pollution to the marine environment.

According to Sections 1 and 2, the Pollution Act is based on the principle of prevention and, accordingly, as stipulated under Section 7, all pollution or any activity that can result in pollution is prohibited unless the activity is permitted. However, any lawful polluting activity must be combined with a duty to take measures to prevent such pollution from

⁷² Section 1-6 (k) defines operator as anyone executing on behalf of the licensee the day to day management of the petroleum activities.

occurring and measures to mitigate pollution in the event it occurs. From these provisions, it is clear that elements of duty to prevent pollution and strict responsibility for action are the fundamental principles established in this Act. Furthermore, the element of the precautionary principle is also implied according to the wording of Section 7 of the Pollution Act which not only prohibits actual pollution but also any activity that may cause a risk of pollution.

According to Section 8 and 9 of the Pollution Act, pollution arising from offshore oil and gas activity is prohibited unless it is permitted by a special pollution permit. Sections 11 and 16 deal with the issue of permits. Section 11 states that the pollution control authority⁷³ may, on application, issue such permit and impose conditions pursuant to Section 16 which explicitly states that conditions should be laid down in order to prevent pollution and clean up in the event of an oil spill. This is in line with the main objective of the Pollution Act and the guidelines in section 2 which is discussed above.

Furthermore, the pollution permit is always subject polluter pays principle⁷⁴ and the principle of mandatory environmental impact assessment as stipulated under Sections 2 and 13 of the Petroleum Act. Furthermore, the best available technology principle is required to be included in the permit as mentioned under Section 2 (3) of the Petroleum Act, but the requirement is not strict in the Pollution Act as it can be interpreted from its wording which states that:

“efforts to avoid and limit pollution and waste problems shall be based on the technology that will give the best results in the light of an overall evaluation of current and future use of the environment and economic considerations.”

Another important principle included in the Pollution Act is the obligation to deal with all pollution problems with the same extent irrespective of whether the damage arises within or outside Norway (Section 2 (6)). This simply means that the Norwegian legal regime applies the principle of non-discrimination and deals with pollution matters resulting from

⁷³ Norwegian Environmental Agency

⁷⁴ Section 2 (5): The costs of preventing or limiting pollution and waste problems shall be met by the person responsible for the pollution or waste.

offshore oil and gas activities that affect areas beyond its national jurisdiction or other States in the same way as effects within Norway.

Section 40 of the Pollution Act provides a duty to establish and maintain an emergency response system on any person or company that is involved in an activity that entail risk of pollution including the offshore oil and gas activities. Furthermore, requirements for monitoring, inspection to address pollution from offshore oil and gas activities as well as a duty to provide information in the event of pollution are also established under Sections 48, 49 and 50 of the Pollution Act.

Lastly, liability for pollution damage caused by offshore oil and gas activities is not regulated under the Pollution Act, but, under Section 53 (1)⁷⁵ preference is given to the Petroleum Act which contains provisions that specifically regulate liability for pollution damage in the offshore oil and gas.

4.3. Other Relevant Regulations of Norway

4.3.1. *The Petroleum Regulations No. 653 of 27 June 1997 (the Petroleum Regulations)*

In addition to the Petroleum Act, there are several comprehensive regulations that are enacted pursuant to it and, together, they adequately regulate the petroleum activities. However, the Petroleum Regulations No. 653 of 27 June 1997 (the Petroleum Regulations) is the most relevant and associated secondary legislation for the environmental pollution in the offshore oil and gas activities as it provides the technical details which are not specified in the Petroleum Act. Generally, the provisions set out in the secondary regulations in Norway stipulate functionally defined requirements through specification of required outcomes and standards to be met. This is because of the performance-based approach used in Norway's legal regime.

⁷⁵ Section 53 (1): This chapter applies to the duty to pay compensation for pollution damage insofar as the question of liability is not separately regulated by other legislation or a contract.

4.3.2. Regulations Relating to Conducting Petroleum Activities, 2010 (Activities Regulations)

The Activities Regulations applies to offshore oil and gas activities and activities related to facilities and equipment used underwater to extract oil as stated in Section 1 of the Activities Regulation. The Activities Regulations provides comprehensive requirements for monitoring the offshore environment to sufficiently maintain an acceptable environment condition (Section 52), obligation to carry out baseline survey before conducting exploration drilling (Section 53), requirement to emissions, discharges and waster into the offshore environment (Chapters 11 & 12) and requirement for maintenance and emergency preparedness (Chapter 13).

4.3.3. Regulations Relating to Design and Outfitting of Facilities, etc in the Petroleum Activities, 2010 (Facilities Regulation)

The Facilities Regulations applies to offshore oil and gas activities and provide regulations that deal with the design and outfitting of facilities in order to prevent pollution and deploy emergency preparedness (Section 1). The requirements set under Chapters 2, 5 and 7 of the Facilities Regulations with respect to the design of facilities, physical barriers and drilling and well systems used all reflect the prevention and precautionary principles established under the Pollution Act. In addition, under Section 9 of the Facilities Regulations, the principle of best available technology is also observed.

4.4. Regulatory Framework

The main governmental regulatory bodies involved in petroleum activities with respect to environmental matters in Norway include the MPE and the Ministry of Climate and Environment. The MPE and its subordinate, the Norwegian Petroleum Directorate have the responsibility of managing the oil and gas resources with the main objective of ensuring that resources management is conducted in the best possible manner. The Norwegian Petroleum Directorate is the administrative body that performs a regulatory role to prevent and mitigate environmental pollution in oil and gas activities.

The Ministry of Climate and Environment and its main subordinate, the Norwegian Environmental Agency are also responsible for all environmental matters including prevention of environmental pollution in the offshore oil and gas activities and implementing the Pollution Act and all other regulations enacted therein.

4.5. The Ghana Legal Framework for Regulating Offshore Environmental Pollution

There are numerous laws and regulations that govern the oil and gas activities in Ghana and the relevant legislation relating to environmental pollution in the upstream offshore oil and gas are the Petroleum (Exploration and Production) Act, 2016, Act 919 and Environmental Protection Agency Act 1994, Act 490. In addition, a number of subsidiary legislations are enacted pursuant to these Acts. The following examines the above-mentioned primary legislation and provides an overview of their relevant subsidiary legislation. In addition, the regulatory framework that regulates the offshore oil and gas activities in Ghana is examined.

4.5.1. Petroleum (Exploration and Production) Act, 2016, Act 919 (the E&P Act)

The E&P Act is the primary legislation that regulates the petroleum activities including the upstream sector in Ghana according to Article 1. The E&P Act under Article 10 gives the Minister responsible for petroleum activities⁷⁶ the right to enter into Petroleum Agreement (PA) to explore, develop and produce oil and gas subject to parliamentary approval. However, as stipulated under Article 81(1) of the E&P Act all offshore oil and gas activities must be carried out in accordance with the principles established under the Environmental Protection Agency Act, 1994 (EPA Act) and regulations enacted pursuant to this Act.

⁷⁶ Article 95 of the E&P Act

The E&P act, according to Article 82(1), establishes strict requirements for environmental impact assessment in all phases of the petroleum activities including reconnaissance, exploration drilling, development and production, decommissioning as well as installation and operation of an offshore facility. In addition, all the above-mentioned activities require a license, a permit or approval issued by the Minister or the Petroleum Commission in accordance with Articles 9, 24, 27, 30, 38, 43 and 46 of the E&P Act.

Prior to the development and production phase, the licensee is obliged to submit a detailed plan of development and operation to the Minister for approval and the plan must include, among other things, solutions to prevent and minimize environmentally harmful discharges and emissions, emergency preparedness as well as decommissioning and disposal of facilities as stipulated under Article 27 E&P Act. In addition, the E&P Act Articles 43, 44 and 45 specifically regulate the decommissioning and disposal process of the offshore facilities once the petroleum operations had ceased or the license has expired as well as the establishment of a decommissioning fund.

The obligation to implement the decommissioning plan is placed on the licensee and this obligation is applicable even after the expiration of the petroleum license or agreement as conferred in Article 44 of the E&P Act. Furthermore, Article 44 (9) states that if a licensee fails to implement decommissioning plan within the given time frame, the Minister, in consultation with the Petroleum Commission, may take measures to implement the decommissioning plan on the account and risk of the licensee.

The decommissioning plan obligation also applies to the petroleum operations conducted by the Ghana National Petroleum Corporation (GNPC) in accordance with E&P Article 43. However, as elaborated in Article 45, the GNPC is excluded from the obligation of establishing a decommissioning fund.

The E&P Act Article 83 lays down the polluter pays principle and applies strict liability for any pollution damage caused as a result of oil and gas activities and the rules of this article apply to all parties involved including licensees, contractors and the GNPC itself

as well as jointly and severally when several parties are involved. The parties involved are also required to take necessary measures to remedy any pollution caused as conferred in Article 81(4).

The E&P Act Article 84(3) contains special rules on where an event of force majeure results in pollution damage, the liability will be based on the assessment of the Minister in consultation with the Petroleum Commission. However, due account shall be taken of:

“The scope of the activity, the measures taken to avoid or mitigate the effects of the force majeure event, the situation of the party that has sustained the damage as a result of the force majeure event, and the insurance opportunities for each party”. Article 84 (3) E&P Act.

4.5.2. Environmental Protection Agency Act 1994, Act 490 (EPA Act)

The E&P Act requires strict compliance with the EPA Act and its subsidiary legislation in matters related to oil and gas activities as conferred under Articles 24, 81 and 82. Therefore, the EPA Act is the central piece regulating environmental pollution in Ghana. However, it only contains a few relevant provisions related to environmental pollution in the offshore oil and gas activities. First, the EPA Act Article 1(1) establishes the Environmental Protection Agency (EPA). Secondly, Article 2 mandates the EPA to formulate policies and issue recommendations on environmental pollution, to prescribe standards and guidelines dealing with pollution and to issue environmental permits to operational discharges from all sources of pollution including the offshore oil and gas activities. Lastly, Article 12 empowers the EPA to require an environmental impact assessment for any operations that may adversely affect the environment before issuing an environmental permit. This particular section of environmental impact assessment is further regulated under Environmental Assessment Regulations 1999, (LI 1652) which is enacted pursuant to the EPA Act.

4.6. Other Relevant Regulations

4.6.1. *Environmental Assessment Regulations 1999 (LI 1652) as amended in 2002*

The LI 1652 is a subsidiary legislation enacted pursuant to the EPA Act and it provides the necessary details in conducting environmental impact assessment in all activities that are considered to adversely affect the environment. The environmental pollution related to offshore oil and gas is thoroughly regulated under LI 1652, and all petroleum-related activities are included in the list of those that require a mandatory environmental impact assessment before an environmental permit is issued by the EPA (Schedules 1 and 2, LI 1652).

4.6.2. *The Petroleum (Exploration and Production) (Health, Safety and Environment) Regulations, 2017 (LI 2258)*

The regulation is enacted pursuant to the E&P Act and it applies to all oil and gas activities within the scope of the E&P Act as in Article 2(1) of LI 2258. The main aim of this regulation is coherent with the principles of prevention and mitigation of environmental pollution prescribed under the E&P Act as conferred under Article 1 of LI 2258. Furthermore, the LI 2258 comprehensively deals with issues of operational discharges, design and operation of offshore facilities, decommissioning, emergency preparedness as well as pollution incident reporting.

4.7. Regulatory Framework

The Main governmental regulatory bodies involved in oil and gas activities are the Ministry of Petroleum, the Petroleum Commission and EPA. The Minister of Petroleum is the main actor on behalf of the Government of Ghana and provides policy direction on oil and gas matters in accordance with Article 10(12) E&P Act. Under E&P Act, the Minister is given the power to issue regulations (Article 94), and in consultation with the Petroleum Commission, to grant reconnaissance license (Article 9), approve operator (Article 13), approve development and production plan (Articles 27 & 30), grant license for installation and operation of offshore facility (Article 38) as well as approve decommissioning plan (Article 44).

4.7.1. *The Petroleum Commission*

The Petroleum Commission is established under the Petroleum Commission Act, 2011 (Act 821). The main responsibility of the Petroleum Commission is to regulate and manage the upstream oil and gas activities according to Article 2 of the Act 821. The main functions of the petroleum commission include monitoring compliance with national policies, laws, regulations and agreements by carrying out the necessary inspection and audit as well as compliance to environmental standards in oil and gas activities as per Article 3 of the Act 821.

4.7.2. *Environmental Protection Agency (EPA)*

As indicated above, the EPA is established under the EPA Act as the responsible authority on environmental regulation in Ghana. According to Article 2 of the EPA Act, the functions of the EPA include prescribing standards and guidelines dealing with environmental pollution and ensuring compliance with Ghana's environmental law. In addition, it is mandated to issue environmental permits and pollution abatement notices.

4.8. Conclusion

This chapter examined Norway and Ghana's legal and regulatory regimes for regulating environmental pollution in the offshore oil and gas activities. The above discussions indicated that, although both countries use two distinct regulatory approaches, they have established a discretionary licensing system that allows them to thoroughly predict potential environmental impact resulting from any oil and gas activities. In addition, requirements for environmental impact assessment in all phases of the oil and gas activities exist. Aspects of emergency preparedness and response, as well as strict liability for pollution damage, are adequately regulated and detailed in both jurisdictions.

In each jurisdiction, the Petroleum Act, the main statute, and associated regulations are coordinated with the separate statutes that address environmental protection. Also, because of the clear separation of responsibilities and division of authority among the

regulatory authorities in both jurisdictions, the principal regulatory authority ensures coordination among all authorities thus allowing effective compliance and enforcement of the overall legal regime.

5. CHAPTER FIVE: EXAMINATION OF THE SOMALI LEGAL, REGULATORY AND INSTITUTIONAL FRAMEWORK FOR REGULATING OFFSHORE ENVIRONMENTAL POLLUTION

5.1. Introduction

This chapter examines the overall legal and regulatory framework of Somalia governing the environmental pollution. Key aspects in the Somali regime addressing environmental pollution in offshore oil and gas exploration is analyzed in comparison with those of Ghana and Norway discussed in chapter four. These key aspects include the licensing system to ensure that offshore oil and gas activities fulfill the regulatory requirements concerning the environmental protection, mandatory environmental impact assessment in all phases, liability for pollution damages, decommissioning as well as preparedness and emergency response to pollution incidents. National legislation and regulations examined in this chapter include the 2012 Provisional Constitution, 2008 Petroleum Law, the 2019 Petroleum Bill, and 2019 Agreement of Ownership, Management and Revenue Sharing of Natural Resources (Petroleum and Minerals).

5.2. National Legal Framework for Oil and Gas

5.2.1. The Provisional Constitution of the Federal Republic of Somalia, 2012 (the Constitution)

The Constitution contains relevant provisions relating to environmental regulation and management. Article 25 the Constitution forms the basis of environmental protection in Somalia. The provisions of this article grant every Somali citizen the right to an environment that is not harmful to their health and well-being, to be protected from pollution, the right over the natural resources of the country and sets the obligation of protecting these resources from excessive exploitation.⁷⁷

⁷⁷ Article 25 states that ... (1) Every person has the right to an environment that is not harmful to their health and well-being, and to be protected from pollution and harmful materials. (2) Every person has the right to have a share of the natural resources of the country, whilst being protected from excessive and damaging exploitation of these natural resources.

Under Article 25, the primary responsibility rests on the Government. The provisions oblige the Government to provide a safe environment, protect the citizens from problems arising from pollution and other harmful materials as well as the preservation of the natural resources from excessive exploitation. The element of rational utilization of the natural resources is important and it implies that the natural resources shall be managed in such a way that it benefits both the current and future generations while incorporating general protection and sustainable development.

Furthermore, the Constitution declares the obligation of the Government to prioritize the protection, conservation, and preservation of the environment against anything that may cause harm, but it also imposes a duty on the citizens to safeguard and enhance the environment. Accordingly, citizens are required to participate in the development, execution, management, conservation and protection of the natural resources and environment.⁷⁸

The above provisions contain two important aspects. First, the requirement of an obligatory environmental protection is introduced and, secondly, it does not limit the sources that can harm the environment. Therefore, the Constitution places a clear obligation on the Government to protect the marine environment from pollution resulting from offshore explorations.

Similarly, the Constitution introduces a series of obligations on both levels of the Government, federal and regional. It obliges both to take measures to clean any hazardous waste dumped on the land or in the waters of Somalia, enact national legislation that regulates the dumping of waste in accordance with international laws and also take urgent measures to prevent future dumping. In addition, seek compensation from those responsible for any dumping of waste and to take measures to reverse the environmental damage.⁷⁹

⁷⁸ Article 45 of the Constitution

⁷⁹ Article 45 of the Constitution

It is apparent that the Provisional Constitution addresses the issue of dumping of wastes more specifically and the reason behind this is that there have been numerous reports of illegal dumping of hazardous waste in the sea and coastline of Somalia in the early 1990s when the country was still at the peak of the civil war (Panjabi, 2010).

The Constitution obliges the Federal Government to ensure that issues related to the protection of the marine environment and prevention of erosion affecting federal member states territories are regularly discussed at the highest levels of the regional governments including the presidents of the federal member states.⁸⁰

In respect to mineral rights and hydrocarbon explorations, the Constitution remains ambiguous. In accordance with Article 44, the allocation of natural resources shall be negotiated and agreed between the Federal Government and the federal member states.⁸¹ Accordingly, on 18 May 2019, the House of the People of the Federal Parliament approved the Revenue Sharing Agreement which was negotiated between the Federal Government and the federal member states. Key elements of this agreement and how it addressed the issues of ownership, sharing and managing the natural resources are discussed in this chapter.

5.2.2. Somali Petroleum Law 2008 (the Petroleum Law)

The Petroleum Law is the primary legal document responsible for managing and regulating the oil and gas activities in Somalia both onshore and offshore.⁸² The introduction of Petroleum Law in 2008 as separate legislation from the Somali Mining Code of 1984⁸³ was a landmark step towards developing comprehensive legislation that specifically dealt with oil and gas exploration. The main objective of this legislation is to regulate issues including licensing, environmental protection responsibilities during the exploration and production activities, and the establishment of the Somali National Oil

⁸⁰ Article 52 of the Constitution

⁸¹ Article 44 states that...The allocation of the natural resources of the Federal Republic of Somalia shall be negotiated by, and agreed upon, by the Federal Government and the Federal Member States in accordance with this Constitution.

⁸² Article 1 of the Petroleum Law 2008

⁸³ The Mining Law of 1984 regulates all mining operations and related activities within the territory of Somalia.

Company⁸⁴ as well as the Somali Petroleum Authority. The roles and responsibilities of the latter is discussed under the regulatory framework in this chapter.

The Petroleum Law also regulates environmental responsibilities on the licensee conducting oil and gas activities. Pursuant to Article 9, the Petroleum Law imposes a responsibility on the Federal Government and the licensees to protect the environment in which they are conducting oil and gas activities. The environmental obligations are further described under the provisions of Article 28 of the Petroleum Law. However, Article 28 places these obligations solely on the licensees. The provisions in the Petroleum Law, therefore, are contradictory and it is not clear who has ultimate responsibility.

Under Article 28, the licensees are required to prevent pollution, damage to the ecological environment, oil spills, develop emergency clean-up plans and procedures as well as to conduct an environmental impact assessment before any major exploration activity. In addition, an obligation to conform to good oilfield practice in the restoration of the environment at the closure of the exploration activity.

In respect to the environmental impact assessment, the approach of the Somali legal regime is slightly different and ambiguous than those of Ghana and Norway. The environmental impact assessment is a key component and mandatory requirement in both Ghana and Norway's environmental regulatory regime before conducting any activity related to oil and gas. However, the Somali legal regime applies a different approach and requires the assessment to be conducted only in 'appropriate circumstances' according to the wording of Article 28 (7) of the Petroleum Law. In this respect, two fundamental questions arise. First, what constitutes appropriate circumstance and who decides when it is appropriate. But it can be concluded that the wording used in this article means that the Petroleum Law does not constitute a compulsory environmental impact assessment but a rather optional procedure which is left for the licensee or operators to decide when it is appropriate to conduct.

⁸⁴ Article 3 of the Petroleum Law 2008

Instead of applying compulsory impact assessment, Article 24.6 (5) of the Petroleum Law requires environmental protection and preservation provisions to be included in the PSA and according to Article 26.3 the application for exploration and production license shall include proposal for protecting the environment and preventing as well as mitigating the pollution arising from the oil and gas activities.

Furthermore, both Norway and Ghana regimes require pollution permit to be applied and issued before any oil and gas activity is started. However, surprisingly, the Somali Petroleum Law does not mention any requirement to apply or issue such pollution permit.

Although Article 28 of the Petroleum Law lists obligations of operation when conducting oil exploration and production activities, it does not fully define the obligations of the licensee in terms of measures to be taken in order to prevent pollution, respond to an oil spill or procedures to conduct an environmental impact assessment. However, the Petroleum Law gives the Minister of Petroleum and Mineral Resources the authority to enact such regulations that define these obligations more clearly according to Article 28 (2) of the Petroleum Law. Both Ghana and Norway's regimes lay down further rules detailing the procedure of conducting the environmental impact assessment and also secondary legislation that provide further technical details and reinforce the overall framework regulating pollution resulting from oil and gas activities. More importantly, the Norway regime goes one step further by requiring the assessment to be shared for consultation with interested parties that could be affected.

In respect to liability for pollution damage, Article 30 (3) of the Petroleum Law states that the licensee is liable to pay fair and reasonable compensation for any damages resulting from oil and gas activities. Although environmental pollution damage is not directly mentioned in this article, it is however implied. Furthermore, Article 30 (4) states the Somali Petroleum Authority shall decide what constitutes fair and reasonable compensation. This cautious wording means that unlike Norway and Ghana regimes, the

Somali Petroleum Law does not apply strict liability principle for pollution damages on the licensee without regard to fault.

The Petroleum Law regulates the installation and operation of offshore facilities as well as decommissioning of production installations and creates removal obligation on oil operators. According to Article 25, the Petroleum Authority is given the power to grant surface access authorization which allows the installation and operation of offshore facilities within the areas of jurisdiction. Although the authorization does not give the holder permission to drill a well according to Article 25.2 (2), the Petroleum Law does not establish any environmental requirements for installation and operation of such offshore facilities. This is contrary to the requirements set under the Norway and Ghana regimes in which the application and permission for installing and operating offshore facility include a detailed provision dealing with an environmental component.

Also, under Article 37 licensees are required to remove structures upon the termination of the oil license or when they are no longer in use except if the agreement otherwise provides or with the consent of the Somali Petroleum Authority. Article 37 (2) of the Petroleum Law requires that provisions dealing with decommissioning to be included in the license and mandates the Ministry to enact specific regulations that address the technical matters regarding decommissioning. The decommissioning issue is solely covered under Article 37 of the Petroleum Law without adequate details when compared with Norway or Ghana's Petroleum Laws which dedicate a complete chapter to decommissioning and removal of offshore facilities.

Although Article 28.1 (6) of the Petroleum Law obliges the licensee to provide the necessary emergency response system to prevent and mitigate any pollution incident, it fails to lay down further rules and conditions related to submission of such plans and approval as well as sharing of information with the authority in the event of pollution. These rules are clearly detailed in both Ghana and Norway's regimes.

Presently, the Petroleum Law is the only statute that governs oil and gas in Somalia whether offshore or onshore. In both Ghana and Norway, although the Petroleum Law is the principal statute governing the oil and gas activities, the scope also includes other separate legislation that addresses specific topics such as environmental protection.

The lack of such separate environmental protection statute and regulations has pushed the Petroleum Law to expand the powers given to the Minister of Petroleum and Mineral Resources by mandating them to make regulations for, among other things, specific aspects related to environmental pollution in the various phases of the oil and gas activities as conferred in Articles 28, 37 and 45 of the Petroleum Law.

5.2.3. Somali Petroleum Bill 2019 (the Petroleum Bill)

On 20 May 2019, the House of the People of the Federal Parliament approved the Petroleum Bill which seeks to amend the 2008 Petroleum Law of Somalia. The Petroleum Bill is now pending before the Upper House of the Federal Parliament and then to be signed by the President into law. Initially, Article 11 of the Petroleum Bill clarifies the contradictory rules of Articles 9 and 28 of the Petroleum Law by solely placing the environmental obligation on the licensees, obliging them to conduct oil and gas activities in accordance with national and international environmental regulations. The Petroleum Bill further obliges the Federal Government to regulate and monitor compliance of licensees with provisions of this law. However, the Petroleum Bill doesn't clearly define the international regulation applicable in this regard. Also, there is no codified international law that specifically and adequately addresses the environmental pollution resulting from offshore oil and gas activities (Kashubsky, 2006). In fact, according to (Jessen, 2018) offshore oil and gas is exclusively regulated by national laws. Therefore, the only recourse available in this case is the national law or regulations.

Apparently, the wording of Article 11 of the Petroleum Bill refers to a separate regulation that governs environmental pollution related to oil and gas activities. However, presently, there is no separate national environmental law or regulations that specifically regulate environmental pollution but under Article 45, the Petroleum Bill mandates the Ministry of

Petroleum and Mineral Resources to issue regulations dealing with environmental pollution based on the recommendations of the Somali Petroleum Authority. These regulations may include but are not limited to those dealing with the protection and restoration of the environment, cleanup of oil spills, reporting of environmental pollution, offshore installations, as well as abandonment and decommissioning.

To date, the Ministry has not yet developed such regulations. Furthermore, the Petroleum Bill does not mention any reference whatsoever to another national legislation that governs environmental pollution. This means that the country lacks the legal framework that regulates environmental pollution related to offshore oil and gas activities. However, the Petroleum Bill and its regulations (none issued yet) try to exclusively govern the environmental pollution related to offshore oil and gas activities.

Similar to the Petroleum Law, the Petroleum Bill itself does not establish strict liability for pollution damage on the licensees. However, Article 28.1 (9) of the Petroleum Bill requires the licensee to set up a pollution damage fund to clean and restore the damaged environment. Article 28 (3) states that pollution damage claims shall be brought before the competent court. The question then becomes, which law regulates the liability for pollution damages? Also, which court is the competent court in this case?

Additionally, Article 37 of the Petroleum Bill requires operators to setup a fund for decommissioning soon after granting the license to conduct oil production activity. The Petroleum Bill does not define whether two separate funds are required or only one common fund for both cases are adequate, but in the logical interpretation of the language of these articles, it implies that there must be two separate funds, each earmarked for a specific purpose.

5.3. Other Relevant Regulations

5.3.1. Agreement of Ownership, Management and Revenue Sharing of Natural Resources (Petroleum and Minerals), 2019 (the Agreement)

The importance of this Agreement for this dissertation is that it addresses the issues of ownership and management of the offshore oil the gas in Somalia. Article 44 of the Constitution states that the matter shall be negotiated by, and agreed upon, by the Federal Government and the federal member states.

This created important questions such as: who owns and manages the oil and gas exploration? Who can issue oil exploration license? or more specifically, which institution regulates the environmental responsibilities of the offshore oil and gas?

This agreement has resolved the issue of Article 44 and addressed questions related to ownership and management of the natural resources in line with the Constitution. More importantly, the House of the People of the Federal Parliament approved this agreement two days before it amended the 2008 Petroleum Law.

The Agreement states that petroleum and mineral resources in Somalia's land and waters is owned by the people of Somalia. The Federal Government and the federal member states are vested in the responsibility of managing these resources. More specifically, the Federal Ministry of Petroleum and Mineral Resources is responsible for drafting policies, legislation, and issuing licenses of the petroleum and mineral resources.

5.4. Regulatory Framework

The Federal Ministry of Petroleum and Mineral Resources and the Somali Petroleum Authority are involved in regulating environmental pollution related to offshore oil and gas as per Article 28(2) and 45 of the Petroleum Law. The Ministry of Petroleum and Mineral Resources is responsible for issuing regulations dealing with environmental pollution based on the recommendations given by the Somali Petroleum Authority (Article 45 (1)).

These regulations may include those dealing with the protection and restoration of the environment, cleanup of oil spills, reporting of environmental pollution, offshore installations, and abandonment and decommissioning (Article 45 (1)).

The Somali Petroleum Authority is established under the Petroleum Law Article 19 (1). The Somali Petroleum Authority is the main regulatory authority regulating oil and gas activities. It performs several functions including granting reconnaissance license, enter into negotiations of PSA, grant surface access authorization to install and operate offshore facilities and to ensure compliance with the Petroleum Law and other associated regulations according to Article 19 (13 & 14).

It is obvious that the Somali Petroleum Authority is the main regulatory body in the offshore oil and gas activities. Since the Petroleum Law is the only statute that governs the oil and gas activities, there is no other institution that has regulatory responsibilities for environmental pollution in the offshore oil and gas activities. In spite of this, it is important to note that in the Federal Government structure there is a Directorate of Environment working under the Office of Prime Minister. However, the Petroleum Law does not mandate this Directorate with any authority related to oil and gas activities.

The clear division of responsibility over environmental protection and delineation of authority among regulatory bodies reviewed in both Ghana and Norway regimes does not exist in Somalia's regulatory regime. It seems that the Petroleum Law combines these responsibilities and authorities in a single authority or otherwise the legal and regulatory regime governing the offshore oil and gas is yet to develop fully.

5.5. Conclusion

Somalia is at the early stages of developing its national legal regime governing oil and gas activities. This chapter has established that offshore oil and gas in Somalia is regulated only through a single statute which is the Petroleum Law 2008. In the countries compared with the Somali regime, offshore oil and gas is regulated by multiple statutes

and associated regulations and is highly coordinated. The Petroleum Act is the principal statute and the environmental aspect is regulated by separate legislation.

Since the Petroleum Law is the only statute that governs oil and gas in Somalia, this chapter examined key aspects contained in this law that deal with environmental pollution in the offshore oil and gas activities and compared with those in Norway and Ghana. In this examination, the chapter identified that the Somali regime is not comprehensive and fails to adequately regulate the key aspects identified in those of Ghana and Norway regimes including licensing system, mandatory environmental impact assessment in all phases, liability for pollution damages, installation and operation of offshore facilities, decommissioning as well as preparedness and emergency response to pollution incident.

Unlike Norway and Ghana which have a clear separation of responsibilities over environmental protection and division of authority among regulatory bodies, Somalia's regime, all aspects of regulation including the environmental aspects is administered by a single body, the Somali Petroleum Authority; which is subordinate to the Ministry of Petroleum and Mineral Resources. This uncommon practice reflects the underlying problem of a lack of separate environmental statute in the Somali legal regime. Therefore, considering the major weaknesses identified above, it can be concluded that the Somali legal and regulatory regime governing the offshore oil and gas is incomplete.

6. CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1. Conclusions

This dissertation set out to answer three central questions. First, what is Somalia's obligation under the international and regional conventions that regulate environmental pollution arising from offshore oil and gas activities? Second, what are the gaps in the legal and regulatory frameworks governing environmental pollution arising from offshore oil and gas activities in Somalia? Third, how can the available best practices from Ghana and Norway be applied in Somalia to effectively regulate environmental pollution arising from offshore oil and gas activities?

The dissertation focused on examining key aspects in the legal and regulatory regimes of Norway and Ghana and compared with those in Somalia. Those key aspects in the legal regime include licensing system, environmental impact assessment, offshore installations, decommissioning, preparedness and emergency response as well as liability for pollution damages. In addition, the regulatory regime which is crucial for effective and efficient enforcement and compliance with the legal regime is also examined. A comparative analysis was used to benchmark and identify the gaps in the Somali legal regime governing environmental pollution.

The main findings of the dissertation were that the environmental legal and regulatory framework for oil and gas activities in Somalia are inadequate and fail to comprehensively regulate the key aspects identified in Ghana and Norway regimes. Also, although Somalia is a party to a few international conventions, those examined mainly place general obligations to adopt necessary regulations and develop measures to prevent pollution in the offshore marine environment. Furthermore, the regional conventions play a critical role in dealing with marine environment pollution and place obligations on Somalia to protect and sustainably manage the offshore environment.

In respect to the national regime, presently, the petroleum sector is exclusively regulated through a single statute; the Petroleum Law, and the secondary legislation, as well as regulations under this law, are not yet developed. Also, because of the absence of a separate environmental statute, the Petroleum Law tries to concentrate the environmental legislative authority by mandating the Minister of Petroleum to make regulations governing the environmental aspect.

The examination of the identified key aspects showed that in spite of the licensing system in Somalia is undertaken in discretionary and under the control of the Somali Petroleum Authority and the Minister of Petroleum of Mineral Resources, the legal regime does not establish sufficient requirement for environmental permit or approval before conducting any activity related to oil and gas. Also, it does not require mandatory environmental impact assessments in all phases of oil and gas activities. Environmental issues related to installation and operation of offshore facilities as well as decommissioning are loosely regulated and there are no detailed provisions that address any related environmental requirements to grant such license or approve a decommissioning plan.

Furthermore, the liability for pollution damage is not clearly defined in the legal regime and it does not impose strict liability on the licensee. The duty to establish necessary emergency response system to prevent and mitigate any impact of pollution is included in the regime but it fails to lay down further rules and conditions related to submission of such plans and approval as well as a requirement for sharing of information with the authority in the event of pollution.

The regulatory regime is still emerging and all regulatory responsibilities in the oil and gas sector including responsibilities for environmental regulation are placed under a single regulatory authority. This model of regulatory structure differs substantially to that of Norway and Ghana and this is because of the underlying structure of the legislation. Indeed, the concentration of many responsibilities related to oil and gas activities including environmental aspect under a single regulatory authority can considerably

increase the enforcement burden on the authority, hence jeopardizing effective compliance and to the overall legal regime.

The dissertation intends to contribute towards a better understanding of the gaps existing in Somalia's environmental legal and regulatory regime in the oil and gas sector and overall, enable Somalia to develop better legal and regulatory capacities to adequately address the risk of environmental pollution and achieve a balance of economic development and environmental protection.

6.2. Recommendations

Based on the examination of the Norway and Ghana legal and regulatory regimes and the gaps identified in the Somali legal and regulatory regime, the dissertation proposes the following recommendations to strengthen the Somali regime governing the offshore oil and gas activities in order to prevent environmental pollution. First, Somalia should amend the Petroleum Law and enact, as a matter of urgency, the necessary subsidiary regulations.

The amendment should include provisions that adequately regulate all environmental aspects in the offshore oil and gas activities. Foremost, it should include provisions of a more stringent licensing system which ensures that only applicants with sufficient technical and financial capacities necessary to deal with potential environmental pollution are awarded licenses for reconnaissance, production or installation of offshore facility. Also, as a part of the procedure of granting an environmental permit, the Petroleum Law should require a mandatory environmental impact assessment in all phases of oil and gas activities and submission of an operational development plan which provides detailed environmental component prior to approving a production sharing agreement.

Furthermore, the amendment should also include specific requirements for decommissioning, defined strict liability for pollution damage as well as requirement of emergency response plan from each licensee subject for approval from the regulatory authority.

Secondly, as per the requirement of the provisional constitution, Somalia should enact, as a matter of urgency, a separate environmental law and regulations that comprehensively regulate the protection of the marine environment from all sources of pollution including pollution resulting from petroleum activities.

This separate legislation is not only necessary to adequately regulate environmental pollution but also, to develop a clear and streamlined regulatory regime in the oil and gas sector. The environmental responsibilities in the offshore oil and gas sector should be placed under a separate Ministry or Directorate, for instance, the existing Directorate of Environment under the Office of the Prime Minister.

Together the amended Petroleum Law and the proposed environmental law can provide a comprehensive environmental regulation in the overall oil and gas activities, however, to ensure the efficiency and effectiveness of the regime, there must be a highly coordinated approach where a single authority, for instance, the Somali Petroleum Authority administers the primary responsibilities and coordinates the application of the other legislation and regulatory authorities.

Finally, Somalia should transfer and adopt Norway's performance-based regulatory approach to regulate environmental pollution in the offshore oil and gas activities. The approach will allow Somalia to enact a set of detailed subsidiary legislation and guidelines that clearly define the standards and desired outcomes for regulated entities while allowing them substantial flexibility to determine how they will conduct oil and gas activities and achieve the outline goals or standards of environmental protection. For instance, regulated entities will be allowed to adopt solutions and technologies that are optimal for specific for the environment in which they operate. This would allow the regulatory authorities to focus on issues of compliance and enforcement of the regime.

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