



IMO
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**A LEGAL ANALYSIS OF MARINE POLLUTION
LAWS AND REGULATIONS AND THEIR
ADEQUACY TO MEET THE CHALLENGES
POSED BY RECENT OFFSHORE DRILLING
OFF THE COAST OF SIERRA LEONE**

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the award of the Degree of Master of Laws (LL.M.) in International
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Submitted By: RAMAT JALLOH (SIERRA LEONE)

Supervisor: MR. RUBEN MACEDA

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International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, Brussels, 1971, entry into force: 16 October 1978, cessation of the convention: 24 May 2002, replaced by the 1992 FUND, 1110 UNTS 57, RMC I.1.7.90, II.7.90;

International Convention for Prevention for Pollution from Ships, London 1973, entry into force: not intended to enter into force without the 1978 Protocol, 1340 UNTS 184; 12 ILM 1319, as modified by protocol of 1978 relating to the International Convention for Prevention of Pollution from Ships, 1973, London, 17 February 1978, entry into force: 2 October 1983, 1340 UNTS 61; 17 ILM 546.

Convention on Limitation of Liability for Maritime Claims, London 1976, entry into force: December 1986, 1456 UNTS 221; 16 ILM 606; RMC I.2.330, II.2.330.

Convention and Protocol for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African (Abidjan Convention); 20 ILM (1981).

Convention for Protection of the Marine Environment and Coastal Region of the Mediterranean, Barcelona, 1976, entry into force: 12 February 1978, 1102 UNTS 27 ILM 290, 22 Ratifications (as of 1 April 2011).

The United Nations Convention on the Law of the Sea, Montego Bay, 1982, entry into force: 16 November 1994; 12 ILM 1245; 160 Ratifications (as of April 2011);

International Convention on Oil Pollution Preparedness, Response, and Cooperation, London, 1990, entry into force: 13 May 1995, 102 Ratifications (as of 1 April 2011).

Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matters, enter into force 30 August 1975.

Declaration of the UN Conference on Environment and Development, 1992, UN Doc.A/CONF.151/26/Rev.1, Report of the UNCED, Vol. 1 (New York).

International Convention on the Control of Harmful Anti-Fouling Systems on Ship, Adopted on the 5 October, 2001, Entry into force 17 September 2008.

International Convention for the Control Management of Ships Ballast Water and Sediments, Adopted 13 February, 2004, not yet in force.

The Convention for the Protection of the Marine Environment of the Baltic sea (Helsinki Convention) (1992), In force 17 January 2000.

The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention); 32 ILM (1993) 1072, in force 25 March, 1998.

The Regional Convention for the Cooperation on the Protection of the Marine Environment from Pollution (The Kuwait Convention); 17 ILM (1978) 511, in force 1 July 1979.

Protocol for the Protection of the Mediterranean Sea against Pollution resulting from the Exploration Exploitation of the Continental Shelf and Sea-bed; (1994) not yet in force.

Table of National Legislations

GHANA

Energy Commission Act 1997 (Act 541).

National Petroleum Authority Act 2005 (Act 691).

Petroleum (Exploration and Production) Act, 1984 (PNDCL 84).

The Ghana National Petroleum Corporation Act (PNDC Law 64).

NIGERIA

Federal Environmental Protection Agency Act 1990 (as amended in 1992).

Petroleum (Drilling and Production) Regulation 1969 (Cap 350 of 1990).

The Oil Pipeline Act (As amended) 1965 (Cap. 338 of 1990).

The Associated Gas Re-injection Act 1979 (as amended) 1985(Cap. 26 of 1990).

SIERRA LEONE

The Environment Protection Agency Act, 2008; Passed in Parliament on 11th September 2008.

The Petroleum Exploration and Production Act, 2001; Passed in Parliament on 8th September 2011.

UNITED STATES OF AMERICA

The Oil Pollution Act 1990.

PERU

Regulations for Environmental Protection in Mining and Metallurgical Activities 1993.

Supreme Court Decree No. 046-93-GM Regulations for Environmental Protection in Hydro-Carbon Activities 1993.

Acronyms

BAT	-	Best Available Technology
BEP	-	Best Environmental Practice
BOP	-	Blow-out Preventer
DG	-	Director-General
E&P	-	Exploration and Production
EIA	-	Environmental Impact Assessment
EM&E	-	Environmental Monitoring and Evaluation
EMP	-	Environmental Management Plan
EMS	-	Environmental Management Standards
EPA	-	Environment Protection Agency
EPE	-	Environmental Performance Evaluation
FDI	-	Foreign Direct Investment
FEPA	-	Federal Environmental Protection Act
FPSO	-	Floating Production Storage Offshore
GNPC	-	Ghana National Petroleum Company
GoSL	-	Government of Sierra Leone
IMO	-	International Maritime Organization
ISO	-	International Standard Organization
IUCN	-	International Union for the Conservation of Nature
MODU	-	Mobile Offshore Drilling Units
MARPOL	-	International Convention for the Prevention of Pollution from Ships

O&G	-	Oil and Gas
OGP	-	Oil and Gas Producers
OPRC	-	Oil Pollution Preparedness, Response and Cooperation
OSPAR	-	Oslo and Paris
UN	-	United Nations
UNCED	-	United Nations Conference on Environment and Development
UNCLOS	-	United Nations Convention on the Law of the Sea 1982
UNEP	-	United Nations Environmental Programme
WB	-	World Bank

INTRODUCTION

The first oil-well was discovered in 1857 in the United States and since then the oil and gas (O&G) industry has been indispensable in industrialised and developing countries alike. Now, mining and drilling in the territorial sea and the continental shelf have assumed enormous proportions of the O&G industry throughout the world, especially as a source of energy. However, offshore industrial activity has caused an increasing risk of pollution in the marine environment. It is an indisputable fact that every stage of the activity of the oil and gas industry – exploration, exploitation, refining and manufacturing, storage, transportation and use – is fraught with environmental consequences¹ which often transcend local and regional boundaries.

The Deepwater Horizon oil spill which took place on April 20, 2010 (also referred to as the BP oil spill or the Macondo blow out) in the Gulf of Mexico illustrates this point. In this incident, the impact of the spill is still present and as recent as 9 July, 2011 about 491 miles (790 km) of coastline in Louisiana, Mississippi, Alabama and Florida had been and remained contaminated by the spill, shutting down the local fishing industry and fouling marshes and the beaches it touched.²

When O&G exploration and production activity is offshore, there are sensitivities such as the preservation of marine life and the possibility of oil fields straddling across boundaries which could complicate applicable regulations. Thus, the extent to which international law addresses the environmental problem is an issue of grave concern and complexity, especially since international law may not be sufficiently adapted to the special issues posed by offshore mining and drilling. Consequently, global and regional conventions; protocols; national laws; guidelines by international organisations; industry guidelines etc., more usefully categorised into “hard and soft law”, have emerged to regulate the oil and gas industry.

Sierra Leone is a small country with a land area of 27,699 square miles (71,740 square kilometers), a coastline of about 250 miles (402 km) off the coast of West Africa, north of

¹ Dias, Ayesha., “The Oil and Gas Industry in the tangled Web of Environmental Regulation: Spider or Fly?” in Gao, Zhiguo., Ed. Environmental Regulation of Oil and Gas, (Kluwer Law, London-The Hague-Boston 1998) P. 61.

² <http://www.usatoday.com/news/nation/story/2>. Accessed on the 23rd March 2012.

the equator. It is bounded in the north-east by Guinea and in the south-east by Liberia and in the west by the Atlantic Ocean. Further east, also along the coast is Ghana. With a population of about 5.7 million people Sierra Leone is rich in natural resources including but not limited to iron ore, diamond, gold, rutile and bauxite. A ten year civil conflict saw the decimation of the economic and social fabric of the country. In an attempt to rebuild the economy, meet the requirements for the Poverty Reduction Strategy and the Millennium Development Goals, Sierra Leone has aggressively embarked on efforts to attract Foreign Direct Investment (FDI).

Oil discovery was made along the Ghanian coast in the 1960's, (Ghana on the 15th December 2010 made a maiden oil commercial export), generating massive interest from International Oil Companies (IOCs) in offshore oil in the region. The sequence of events subsequently sparked interest of oil from both the Government of Sierra Leone (GoSL) and IOCs. Indeed, recent developments have shown a good potential for a commercial discovery and several Petroleum Agreements have been signed between (GoSL) and oil companies for the exploration and production of oil and gas in Sierra Leone.

Due to recent developments in Sierra Leone's E&P activities, confirming substantial and potentially economically viable quantities of oil in the region, Sierra Leone's Petroleum Production and Exploration Act 2001 was recently repealed and replaced by an updated law - the Petroleum Exploration and Production Act 2011 in order to make provisions for the new developments. In 2008, an Environmental Protection Agency Act was also passed which gives guidelines for the protection of the environment relating to all activities in Sierra Leone including that of the O&G sector.

As already noted, oil and gas operations represent a clear and present danger to the environment and this work will seek to legally analyze the laws and regulations relating to offshore drilling in Sierra Leone and their adequacy in the light of potential marine pollution, as Sierra Leone precipitously moves to developing its offshore O&G.

To this end, the research will analyze the consequences of offshore drilling and the potential impact on the marine environment, the current global, regional and other international regimes that regulate offshore operational pollution, together with Sierra

Leone's current national regime. The research will further seek to determine their adequacy, and recommend reforms where necessary.

Sierra Leone is presently at an environmental cross-road, a newcomer to offshore drilling activities and one of the challenges the government the lawmakers face, is to create a regime that will adequately address the relevant aspects of offshore drilling procedures, in order to avoid various forms of oil pollution, especially on the scale of the Macondo blowout. Based on the inadequate laws and regulations currently in place, together with lack of technical competence, insufficient manpower and lack of emergency control equipments, Sierra Leone can be categorized as a country with low emergency response mechanisms and capabilities. In light of this, offshore oil pollution of any magnitude would have disastrous consequences on marine life and the marine environment.

CHAPTER I

CONSEQUENCES OF OFFSHORE DRILLING AND THE POTENTIAL IMPACT ON THE MARINE ENVIRONMENT

1.1 Marine Pollution

Article 1(4) of the 1982 United Nations Convention on the Law of the Seas (UNCLOS)³ defines pollution of the Marine Environment to mean the introduction by man directly or indirectly of substances or energy into the marine environment, which is likely to result in living resources, hazards to human health, hindrance to marine activities including fishing and other legitimate use of the sea, impairment of quality for the uses of the sea water and reduction of amenities⁴.

Before this definition by UNCLOS, the Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP), in 1969 defined pollution as the introduction by man, directly or indirectly, of substances or energy to the marine environment which resulted in deleterious effects on marine activities, such as fishing and other living resources, the impairment of the quality and the use of seawater, and the reduction of amenities.⁵ From this definition, it can be deduced that the UNCLOS adopts a modified version of the GESAMP definition.

There are five main sources of marine pollution; shipping⁶, from and through atmosphere,⁷ dumping,⁸ land activities,⁹ and sea-bed activities.¹⁰

This work however, is confined to pollution arising from the exploration and exploitation of various minerals particularly from offshore drilling and allied activities, although

³ United Nations Convention on the Law of the Seas 1982, entry into force 16 November 1994.

⁴ Sands, Philippe QC; Principles of International Environmental Law, Second Edition, Cambridge University Press, p.398.

⁵ Esmaeili, Hosseini; The Legal Regime of Offshore Oil Rigs in International Law, Ashgate Publishing Limited, USA, 2001, P.

⁶ UNCLOS Article 211.

⁷ Article 212.

⁸ Article 201.

⁹ Article 207.

¹⁰ Articles 208 and 209.

pollution may occur in an area of the seabed and the ocean floor as well as the subsoil thereof, beyond the limits of national jurisdiction.¹¹

1.2 The Nature of Offshore Drilling Activities

Exploring for and extracting oil involves drilling to depths of up to 30,000,000 ft; and the success or failure of the process which in turn also determines how environmental problems are avoided or reduced, is dependent on a whole range of factors such as the techniques and equipment used; the effects of winds, currents, tides etc.; the particular characteristics of the local marine environment; and a range of human factors such as the skill, care and training of those involved in the drilling process.¹²

The entire chain of upstream petroleum operations of E&P activities- seismic survey, exploration and appraisal, development and production, and abandonment, all impact the environment in their own ways. Environmental problems and impacts tend to increase and build up along with the project's progress, from the initial visibility and acoustic issues at the exploration phase, accident spills and blow-out at the development stage, and to operational discharge and emissions such as gas flaring during the production period,¹³ all or some of which may have localised and/or have trans-boundary impacts.

Three forms of pollution resulting from offshore E&P activities have been identified and distinguished as intentional pollution; accidental pollution (involving blow-outs, pipeline ruptures, tankers spillages etc.); and operational pollution arising as a result of the normal operation of offshore installations.¹⁴

Deliberate or intentional pollutions results from installations for exploration and exploitation of sea-bed oil and gas, such as disposal into the sea of domestic and industrial refuse and relatively small amounts of wastes from drilling. Pollution may result from accidents blow-outs, from the breaking of pipelines either through wear and

¹¹ Soni, Ramanal; *Control of Marine Pollution in International Law*, Juta & Co. Ltd, 1995, p. 130.

¹² DeMESTRAL, A.L.C.; "The Prevention of Pollution of the Marine Environment Arising from Offshore Mining and Drilling", (1979) 20 *Harv. Int'l. L. J.* 469, p. 474.

¹³ Gao, Zhiguo., "Environmental Regulation of Oil and Gas in the Twentieth Century and Beyond: An Introduction and Overview" in Gao, Zhiguo ed. P. 7.

¹⁴ Vinogradov, V. Sergei (Dr.) and Wagner, Jay Paul., "International Legal Regime for the Protection of the Marine Environment Against Operational Pollution from Offshore Petroleum Activities" in Gao, Zhiguo ed. P. 93.

tear or from being fouled by trawl. In addition, collisions between ships and installations, as in the case of Ekofisk which took place on the 8 June 2009, when well stimulation vessel Big Orange XVIII collided with it.

Operational pollution at the exploration phase is usually relatively minor and confined in terms of time and space though it can be substantial in sensitive areas.¹⁵ This pollution takes the form of discharges composed of drilling fluids and cuttings which may contain hydrocarbons and surface active materials; water at varying degrees of salinity are also discharged; disposal of waste, atmospheric emissions and discharges of effluents, containing oil, chemicals and other harmful substances is a common environmental problem¹⁶; so also is discharges of drilling muds.¹⁷

Common sense dictates that at the production phase the environmental impact will be more pronounced and severe as effective recovery of oil begins. At this stage, production water is the largest waste source; however other discharges include formation water, drilling fluids and cuttings, ballast water and storage displacement water, produced sand, deck drainage, well-completion and work-over fluids, cement residues blow-out preventer (BOP) fluid, sanitary and domestic wastes, gas and oil processing wastes, slop oil, cooling water, desalination brine, chemical biocides used as coating agents to discourage sedentary species from attaching themselves to platforms etc.¹⁸

These discharges paint a truly frightening picture for the oil industry and it is not difficult to realise that they will affect the marine environment. It has been suggested that these waste streams are a relatively minor source of marine pollution compared to vessel based pollution and land-based activities, and further that the environmental impact of such pollution will vary depending on factors such as the location, fragility of ecosystems, stage of activity and age of installation.¹⁹

The environmental considerations, which are applicable to a country like Sierra Leone, which could potentially have several offshore installations operating simultaneously,

¹⁵ Vinogradov, V. Sergei (Dr.); "Environmental protection in the petroleum industry", Encyclopaedia of Hydrocarbons, Vol. IV/ Hydrocarbons: Economics, Policies and Legislation, P. 508.

¹⁶ Ibid.

¹⁷ DeMestral's article for a description of how drilling is undertaken, P. 475.

¹⁸ Vinogradov, V. Sergei (Dr.) et al; *op cit.*, P. 96.

¹⁹ Ibid. P. 97.

thereby increasing the potential for pollution from those installations. Offshore pollution will pose the greatest threat to Sierra Leone's fishing industry which is currently the country's third highest foreign exchange earner. Marine wild life, shipping and maritime business which it enjoys (due to its position of having the third largest natural harbour in the world) will be impacted adversely. In anticipation of the potential adverse effects of offshore E&P activities on the marine environment, the GoSL has been making gradual efforts to address these issues through the creation of an amendment Petroleum act and the corresponding EPA act as mentioned earlier.

Over the years, offshore E&P activities have resulted in visible harm to the marine environment, its inhabitants and to man through the foodchain. Below is an outline of some of the negative effects on the marine environment and marine life.

1.3 Consequences of Pollution to the Marine Environment

In the process of drilling for oil and gas, both humans and the environment are put at risk. Potential hazards that can affect both humans and the marine environment are oil well eruption (blow-out) at the drilling site, grounding or collision of oil tanker at sea, or the rupture of pipelines, and the subsequent release of oil into the environment.²⁰ The adverse impact of pollution is not secluded to the incident causing pollution but also can result from steps taken to mitigate the damage, as was the case in the Torrey Canyon incident of 18 March 1967. The British government ordered that the wreck of the vessel be destroyed by aerial bombardment in the hope that the remaining 40,000 tons of oil on board the vessel would be burnt off. This caused the death of over 15,000 seabirds and threatened the livelihoods of many of the local people.²¹ Much damage was caused by the heavy use of dispersant detergents to break up the slick, with no concern over the toxicity of their components which also can have adverse effect on the marine environment.

Crude oil contains many thousands of different chemical components. The component in the largest group is hydrocarbon so named as they are composed entirely of the elements

²⁰ Taverne, Bernard; Petroleum, Industry and Governments, Second Edition, Wolters Kluwer, p. 12.

²¹ De La Rue, Collin and Anderson, Charles B; Shipping and the Environment, Second Edition, Informa, London, 2009, p. 10.

of carbon and hydrogen. Other groups of components also contain sulphur, nitrogen and oxygen. Most crude oil contains traces of various metals.²²

Once oil is discharged into the sea, it becomes exposed to weathering which causes physical and chemical changes.²³ The process include among others, release of chemical component into the sea water. This release can be lethal to marine life and the marine environment.

Fish are affected by oil pollution through the intake of oil and contaminated prey, through the intake of contaminated oil compounds through the gills, through effects on fish eggs and larval survival and through ecological changes. The fish may become more vulnerable to disease, including fin rot, reduction in external bacterial flora, reduction in the rate of tissue repair or regeneration and increase parasitism.²⁴ Further their growth rate decreases.

In mammals, it has been found that almost all polar bears, sea otters and otters which come into contact with oil will die due to the fur coat losing its insulating quality and the adverse effects upon the digestive, the nerve and the circulatory systems.²⁵ Also, seals and reptiles are particularly vulnerable because of their need to surface in order to breathe and to leave the water to breed.

Oils also affect on marine bacteria and phytoplankton. The latter is at the bottom of the marine food chain and creates the basis of all life in the sea by its photosynthesis and enormous decrease of their growth rate has been noted after a spill.²⁶ There is evidence that an oil spill can upset the entire invertebrate populations and further evidence show that the impact of oil on snails, crabs and soft shell clams has been visible 6 to 8 years after an incident.²⁷

²² Brubaker, Douglas; *Marine Pollution and International Law, Principles and Practice*, Belhaven Press, 1993; P. 12.

²³ *Ibid.*

²⁴ *Ibid.* P. 19.

²⁵ *Ibid.* P. 21.

²⁶ *Ibid.* P. 29.

²⁷ *Ibid.*

Reef building corals are found off most tropical coastlines, islands and archipelagos, in shallow, warmer waters of suitable salinity and clarity.²⁸ Coral is a living organism that grows on the calcified remains of dead coral colonies which form overhangs, crevices and other irregular bottom features inhabited by a rich and abundant variety of marine life.²⁹ A lagoon is often located at the land side of the reef crest and reef flat, which is a low energy environment usually with a sandy bottom and seagrass beds, protected by the outer reef. If the living coral is destroyed, the reef itself may be subject to erosion.³⁰ Oil pollution causes interference with the reproductive process of coral reefs and furthermore, abnormalities and reduced and suspended growth may occur.

In mangroves, which is shelter and food provider for the young stages of commercially important fish and prawns, is also adversely affected. Oil may block the opening of the air breathing roots of mangrove trees or interfere with their salt balance, causing leaves to drop and the trees to die. The roots systems can be damaged by fresh oil entering nearby animal burrows and the effect may persist for sometime inhibiting recolonisation by mangrove seedlings.³¹

The ability for animal and plant populations to recover from an oil spill may take years especially if it is a population of long-lived, slowly maturing species with low reproductive rates. The replacement of animals is virtually impossible and although some species can be bred and released or be moved from undamaged areas, the probability that acceleration of natural recovery of a complex marine habitat by such programmes is slim.

Apart from oil spills, other effects of offshore drilling which have negatively impacted on the marine life and environment include under water explosions, which have been known to kill small dolphins and seals. Other non-oil related impacts are noise from drilling, discharge of poisonous chemicals, the disposal of waste products generated from the operations such as spent drilling fluids, drill cuttings and production water, reservoir rock particles and flaring.³²

²⁸ Gold, Edgar; Gard Handbook on Protection of the Marine Environment, Third Edition, Gard AS, Norway; P.101.

²⁹ Ibid.

³⁰ Ibid.

³¹ International Tanker Owners Pollution Federation Ltd., Response to Marine Oil Spills, Second Edition, Witherby & Co., London, 1987, p. 1.25.

³² Ibid.

Lastly, abandonment, removal and disposal of production installations have negative effects. The process of decommissioning involves the depressurising, draining and cleaning of the installation's system. Parts of the operational discharges and system effluent will be reinjected downhole or discharged into the sea. Though cleaned, some residue of hydrocarbons, heavy metals and naturally occurring polychlorinated biphenyl's will be found in the disused installations.³³ Corrosion of steel from these installations will cause contaminants to leach into surrounding ecosystem and accumulate within fish and shellfish to the detriment of human consumers.³⁴ The use of explosive cutting in the physical removal of these installations create shock waves that harm or kill marine creatures.

Drilled wells produce contaminated cuttings that are dumped on the seabed around the platform. Removal of structures or pipelines may disturb drill cuttings and thus pollute the environment. These may contain oil, drilling mud and toxic chemicals. Contamination from these waste affect the population of certain fish and organism that live on seabed. Further, if these structures are dumped offshore, the physical act of falling will crush and kill organism beneath the structures. The structures break up and the debris will scatter over a wide area and suffocate marine life.³⁵

With the tremendous risk posed to the marine environment as seen above, it becomes apparent why laws and regulations have to be put in place to govern the activities of offshore drilling of oil and gas in order to minimize these risks.

³³ Disused Offshore Installations and Pipelines; Towards "Sustainable Decommissioning" International Energy and Resources Law and Policy series, P. 29.

³⁴ Ibid.

³⁵ Ibid. P. 32.

CHAPTER II

2. GLOBAL, REGIONAL AND OTHER REGULATORY MECHANISMS FOR COMBATING MARINE POLLUTION FROM OFFSHORE DRILLING

There is no comprehensive international treaty which deals with pollution from offshore oil rigs but there have been attempts to tackle some of the problems created in relation to marine pollution at a global, regional and national level. Apart from codification, answers have also been sought from customary international law and general principles.

2.1. Customary International Law, General Principles of Law and State Responsibility

Customary International Law does oblige States to refrain from polluting the marine environment. This can be found in the principle of *sic utere tuo, ut alienum non laedas*, which Blacks' law dictionary defines as 'use your own property in such a manner as not to injure that of another.' For the purpose of this work, this means States are not allowed to use their own territory in such a manner as to cause any damage to the territory of another State. This principle has found support in the Charter of the United Nations and the General Assembly Declaration on the Principles of International Law Concerning Friendly Relations and Cooperations Among States. It has further been crystallized in The Corfu Channel³⁶ and Nuclear Test Cases.³⁷

In furtherance of marine environment protection, the 'principle of good neighbourliness' and 'the due regard principle' enshrined in the United Nations Charter in relation to social, economic, and commercial matters, has been interpreted as a rule promoting international environmental cooperation.³⁸

The Canadian delegation also advanced the 'principle of custodianship' at the UN Conference on the Law of the Sea as for marine environment protection. This addition to

³⁶ (1949) ICJ Reports 4 at 22.

³⁷ (1973) ICJ Reports 99 at 106.

³⁸ Esmaeili, Hossein; *op cit.*, P.151.

the principle states that every State may be held responsible for polluting its own environment.³⁹

From the principles formulated and discussed, States, according to customary international law and general principles of law, have a duty not to cause harm to their environment and that of other territories.

2.2. Global Regimes

At the global level, United Nations Convention on the Law of the Sea⁴⁰ is the primary instrument that regulates and provides an overall framework for environmental governance of offshore and to some extent, onshore drilling operations of oil and gas. It is the principal global instrument that controls and governs the prevention of pollution to the marine environment.⁴¹

In so far as operational pollution is concerned, Article 208 spells out State parties obligations; with respect to seabed activities subject to national jurisdiction, States party must adopt and enforce national laws and regulations to prevent, reduce and control pollution of the marine environment arising from or in connection with, seabed activities subject to their jurisdiction and from artificial islands, installations, and structures, which must be no less effective than international rules, standards and recommended practices and procedures. States are also required to endeavour to harmonise their policies at the appropriate regional level.

It also provides in Articles 194, 208 and 210 for coastal States to adopt and enforce national laws and regulations to prevent, reduce and control pollution of the marine environment from artificial islands, installations, and structures under their jurisdiction. Furthermore, states must adopt measures to minimise, to the fullest possible extent, pollution from installations and devices used in the exploration or exploitation of the natural resources of the seabed and subsoil.

³⁹ Ibid.

⁴⁰ Montego Bay, 1982, Entry into force 16 November, 1994.

⁴¹ Vinogradov, V. Sergei (Dr.); *op. cit.* P. 511.

Another global regime applicable to offshore operational pollution (to a limited extent) is the International Convention for the Prevention of Pollution by Ships 1973, modified by Protocol of 1978 (MARPOL 73/78),⁴² because Article 2(4) of the convention defines ‘ship’ as a vessel of any type whatsoever operating in the marine environment and includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft and fixed or floating platform”, thus extending (by definition) the convention to virtually all offshore facilities and the coastal state under whose jurisdiction such facilities operate is obliged to regulate such facilities.⁴³

However, the scope and extent of what kind of pollution from Offshore Platforms MARPOL has to regulate has been the subject of much debate and uncertainty. The primary objective of MARPOL 73/78 is preventing and control of vessel-source marine pollution and purports to prevent pollution of the marine environment by discharges of harmful substances or effluents containing such substances.⁴⁴

The MARPOL 73/78 applies to discharges from both vessels and offshore platforms, specifically to any releases including “any escape, disposal, spilling, leaking, pumping, emitting or emptying”.⁴⁵ It does not apply to marine pollution directly resulting from offshore operations, for example, in connection with the use of oil-based drilling muds or leakage of oil during well testing.⁴⁶

Annex I of the MARPOL 73/78, which deals with pollution by oil, applies to machinery space drainage from drilling rigs and other platforms; and as to offshore processing drainage, production water discharge and displacement discharge, there are currently no global rules or standards applicable to these effluents.⁴⁷

The International Convention on Oil Pollution Preparedness Response and Cooperation 1990 (OPRC)⁴⁸ expressly covers oil pollution from offshore oil rigs. The Convention

⁴² London, 1973: Entered into force with the Protocol of 1978; 2 October, 1983; ILM 546.

⁴³ Spackman, Alan; “Environmental Standards for Offshore Drilling” Business Briefing: Exploration & Production (2003).

⁴⁴ Vinogradov, V. Sergei (Dr.) et al., *op. cit.* p. 103.

⁴⁵ MARPOL; Article 2(3)(a).

⁴⁶ Vinogradov, V. Sergei (Dr.); *op. cit.* p. 511.

⁴⁷ *Ibid*, p. 511-512.

⁴⁸ London, Entry into force 30 November, 1990.

defines an 'offshore unit' as 'any fixed or floating offshore installation or structure engaged in gas or oil exploration, exploitation or production activities or loading or unloading of oil.'⁴⁹ The Convention requires State Parties to take all appropriate measures, based on the provisions of the article to prepare for and respond to oil pollution incidents.⁵⁰

Operators of offshore units have an obligation to formulate oil pollution plans. Persons in charge of offshore units have the duty to report any discharge of oil and upon receiving such reports, States are required to take adequate and immediate action.⁵¹

It is submitted that the regulation at the global level is either broad or general and as in the case of MARPOL, completely sidesteps the issue of operational discharge in the context of offshore drilling activities.

UNCLOS deals more effectively with the issues inherent in pollution and the marine environment, in particular those relating to environmental matters consequent to offshore operations and oil rigs used for the purpose of the exploration and exploitation of hydrocarbons from the sea.⁵² However it is only a framework convention and creates the obligation for States to protect the marine environment from pollution, to establish contingency plans and adopt laws and regulations to prevent, reduce and control pollution in areas within and beyond national jurisdiction.

UNCLOS has developed the framework of the law which States have to build upon. States must create compliance and enforcement mechanism, to implement and enforce its provision. It is a springboard for States in creating laws for their individual countries.

Realistically, most developing States trying to secure Foreign Direct Investment (FDI) to conduct offshore exploration will tend to turn a blind eye on their international obligations and UNCLOS has clearly entrusted States with the duty to formulate mechanism to combat this. The pull towards a potential prospective discovery and perceived economic freedom is usually greater than protecting the environment. These

⁴⁹ Article 2.

⁵⁰ Esmaeili, Hossein; *op. cit.*, p. 157.

⁵¹ Articles 3,4,and 5

⁵² Esmaeili, Hossein; *op. cit.*, p. 156.

countries also lack the capacity to develop the relevant laws and regulations and to monitor compliance and this is what this project will seek to remedy in its conclusion.

2.2. Regional Regimes

In its bid to ensure cooperation to combat pollution issues in the marine environment, UNCLOS suggests that States should enter into regional agreements.⁵³ Apart from The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention)⁵⁴ and The Convention for the Protection of the Marine Environment of the Baltic Sea (Helsinki Convention)⁵⁵, United Nations Environmental Programme (UNEP) has taken the lead in organising states on a regional basis to fill the regulation void due to the fact that no global measures have been adopted to regulate the discharges directly arising from the exploration, exploitation and associated offshore processing of oil and gas.⁵⁶

UNEP has done this through its Regional Seas Programme which aims to address the accelerating degradation of the world's oceans and coastal areas through the sustainable management and use of the marine and coastal environment, by engaging neighbouring countries in comprehensive and specific actions to protect their shared marine environment. It has accomplished this by stimulating the creation of Regional Seas Programmes prescriptions for sound environmental management to be coordinated and implemented by countries sharing a common body of water; and currently has 143 countries participating from all parts of the world;⁵⁷ and under this framework, The Regional Convention for the Cooperation on the Protection of the Marine Environment from Pollution (The Kuwait Convention),⁵⁸ Protocol for the Protection of the Mediterranean Sea Against Pollution resulting from the Exploration Exploitation of the Continental Shelf and Sea-bed⁵⁹ and Convention and Protocol for Cooperation in the

⁵³ Article 197.

⁵⁴ 32 ILM (1993) 1072, entry into force 25 March, 1998.

⁵⁵ (1992), entry into force 17 January, 2000.

⁵⁶ Spackman, Alan; *op. cit.* P. 34.

⁵⁷ UNEP website: <http://www.unep.org/regionalseas/about/default.asp>; date accessed 10th November, 2011.

⁵⁸ 17 ILM (1978) 511; entry into force 1 July, 1979.

⁵⁹ (1994) Not yet in force

Protection and Development of the Marine and Coastal Environment of the West and Central African (Abidjan Convention)⁶⁰ etc. were born.

The Abidjan Convention (West African Regional Agreement) is for the purposes of this work the relevant Regional Seas Programme applicable to Sierra Leone. It is drafted to be a comprehensive umbrella agreement for the protection and management of the marine and coastal areas. It lists the sources of pollution which require control; exploitation of the Continental Shelf and sea-bed, pollution from ships, dumping, land-based sources, exploration and exploitation of the sea-bed, and pollution from or through the atmosphere. It also identifies environmental management issues from which co-operative efforts are to be made: coastal erosion, specially protected areas, combating pollution in cases of emergency and environmental impact assessment. There are also articles on scientific and technological co-operation and liability and compensation.

Like UNCLOS, the Abidjan Convention is a frame work Convention with general beautiful ideals and plans about how to combat pollution. States have been left with the task to make specific and /or technical regulatory requirements and enforcement provisions. It has also provided for liability and compensation. As a whole, the said Convention depends on state parties to implement its provisions within national legislations.

In comparison to other regional regimes such as the Helsinki Convention or the Kuwait Convention for example, the Abidjan Convention can be much improved. The Helsinki Convention sets out relatively detailed procedures and measures to be realised by States with respect to offshore petroleum operations conducted in the areas under their jurisdiction. This procedure addresses a wide range of issues, including implementation of BAT, BEP, EIA and monitoring discharges in the phase of exploration and exploitation, reporting and exchange of information as well as contingency planning and abandonment; Annex VI contains a number of provisions regulating operational discharges from offshore platforms in both the exploration and exploitation phases which apply primarily to oil-containing discharges.⁶¹

⁶⁰ Abijan, adopted 1981, in force 1984.

⁶¹ Vinogradov, V. Sergei (Dr.); *op cit.* P. 512.

The Kuwait Convention and 1989 Protocol require that measures against marine pollution from offshore operations should be taken on the basis of “the best available and economically feasible technology”.⁶² The Protocol contains a broad range of pollution-prevention measures, from the licensing system and EIA, to specific regulation of discharges of oil and oily waters, oil-based drilling fluids, water-based drilling muds, chemical substances, garbage and sewage.

On the other hand, the 1994 Mediterranean Protocol, although not yet in force, sets out detailed provisions regarding authorization of offshore exploration and exploitation operations, regulation of operational pollution, safety measures and emergency situations, removal of installations, specially protected areas. It further attempts to maintain a reasonable balance between the protection of the environment and the development of offshore industry requirement.⁶³

The Abidjan Convention does not deal in depth with the issue of pollution from O&G operation like the abovementioned regional conventions. This may be due to the fact that the Abidjan Convention was adopted before the UNEP guidelines which have influenced other regional seas programme. Offshore activities then was not viewed so much of a threat as it is today. Nevertheless, African States find it difficult to regulate offshore activities without clear and concrete laws. The most important strides made by UNCLOS and the Abijan Convention is that they have created the framework, the base from which States have to build upon.

2.3. Other Regulatory Mechanisms

In addition to global and regional regimes, there are institutions which provide guidelines that inform the regulation of offshore operational activities, more commonly referred to as ‘soft law’ within the industry. These instruments are clearly not mandatory but nonetheless they do not lack all authority; it is characteristic that they are carefully negotiated and drafted statements, intended in many cases to have some normative

⁶² Esmaille, Hossein; *op. cit.* P. 163.

⁶³ *Ibid.* P. 162.

significance despite their non-binding, non-treaty form.⁶⁴ They are often enunciated in the form of inter-governmental declarations which are codified but without the usual signature and ratification process to confirm the consent of states as in a treaty,⁶⁵ but there is an element of good faith commitment, an expectation that they will be adhered to if possible, and in many cases, a desire to influence the development of state practice.⁶⁶

It is noteworthy that some of these guidelines are much more detailed and specific in relation to the subject matters they cover. Institutions which have developed instruments to cover offshore activities include UNEP which developed the 1982 guidelines and recommendations, World Bank (WB), IMO and some non-governmental organization such as the International Association of Oil and Gas Producers (OGP, formerly the Oil Industry International E&P Forum), and the World Conservation Union (IUCN).⁶⁷

By way of illustration of how detailed these instruments can be compared to global regimes, the UNEP guidelines and recommendations in relation to offshore hydrocarbon activities, require that adequate control is exercised in particular over well-head equipment and protective devices including blow-out prevention equipment; devices for controlling seabed equipment from the surface; mud programmes and procedures for well casing and cementing; and operating procedures applicable to installations and their implementation.⁶⁸

The International Maritime Organisation's (IMO) Code for the Construction and Equipment of Mobile offshore Drilling Units (MODU) which was revisited in 1991 and came into effect in May 1991 has been applied by most States. The IMO has since 1979 started making recommendatory codes for the Construction and Equipment of Mobile Offshore Drilling Units.⁶⁹ This code was intended to provide international regulations with respect to technical matters of offshore installations.⁷⁰

⁶⁴ Birnie, Patricia et al.; *International Law & the Environment*, Oxford, United Kingdom: Oxford University Press, 2009, P. 34.

⁶⁵ Sunkin, Maurice et al.; *Sourcebook on Environmental Law*, Second Edition, London- Sydney, Cavendish Publishing Limited, 2001, P. 5.

⁶⁶ Birnie et al. *op. cit.* P. 34.

⁶⁷ Vinogradov, V. Sergei (Dr.) et al. in Gao ed., P. 113-117.

⁶⁸ *Ibid.* P. 115; See also <http://www.unep.org/environmentalgovernance/> accessed on the 10th November, 2011.

⁶⁹ Esmalili, Hossein; *loc. cit.*

⁷⁰ *Ibid.*

The oil and gas industry represented by the OGP has been commendably very active with regards to preventing and reducing pollution. OGP has issued industry-specific guidelines for operations in tropical rainforests, onshore areas into arctic and sub-arctic areas, arctic offshore regions, mangrove areas and sensitive areas.⁷¹ These recommendations aim to establish and disseminate internationally acceptable standards, practices and procedures on environmental protection in petroleum E&P activities; to this end they set out requirements for environmental management systems and planning, and identify potential impacts and environmental control measures.⁷²

It has been argued, that even if soft law rules are not binding per se, they can play an important role in the field of international environmental law. They do so in at least three ways: by pointing to the likely future direction of formally binding obligations; by informally establishing acceptable norms of behaviour; and by codifying or possibly reflecting rules of customary international law⁷³ into national legislations in which most of these hard and soft laws depend for implementation.

However, some misgivings regarding the oil industry regulating itself has been proffered. These guidelines are also non-binding and it is hereby submitted that it is practically difficult to regulate oneself in the absence of any sanction for failing to do so. It is like setting your own exam, taking it and marking it.

This chapter has dealt with global, regional and other international regulatory mechanisms and their quest to deal with marine pollution caused or maybe caused by offshore E&P activities in Sierra Leone. As can be seen, there are certain lapses and deficiencies which have brought about challenges to the protection of the marine environment. The next chapter will deal with Sierra Leone's national legislations and to what extent these have contributed towards the protection of its marine environment.

⁷¹ Spackman, Alan; *op. cit.* P. 34.

⁷² Vinogradov, V. Sergei (Dr.); *op. cit.* P. 520.

⁷³ Sands, P; *Principles of International Environmental Law, Vol1: frameworks, Standards and Implementation*, Manchester: Manchester University Press, 1995, P. 77.

CHAPTER III

NATIONAL REGULATORY REGIMES FOR OFFSHORE EXPLORATION AND PRODUCTION ACTIVITIES IN SIERRA LEONE

As already noted practical implementation and enforcement of global, regional and soft law provisions are and can only be given force and effect through local legislations and regulations; these may vary in approach and outlook from country to country. In terms of environmental regulation of O&G activities, three major prevailing regulatory models have been identified; the statutory approach; the contractual approach and the integrated legislative approach.⁷⁴

In Sierra Leone, environmental regulation in relation to O&G activities (including operational activities) is governed by a mixture of the statutory and contractual approach. By way of statutes there are The Petroleum (Exploration and Production) Act 2011⁷⁵ and The Environment Protection Agency (EPA) Act, 2008;⁷⁶ by way of contract all Petroleum E&P agreements so far signed by GoSL contain an environmental protection clause.⁷⁷

3.1. The Petroleum Exploration and Production Act 2011

The Petroleum (Exploration and Production) Act provides for operations to be carried out within prescribed regulations and with international best practice.⁷⁸ It further provides for reasonable steps to secure the safety, health and welfare of persons.⁷⁹ For petroleum operations to be conducted with due diligence and efficiency and in accordance with best international practices, observing sound engineering and technical practices and using appropriate advanced technology and effective equipment, machinery, methods and materials;⁸⁰ restrictions is placed on flaring unless under certain circumstances, in which case it should be done with best practice provision;⁸¹ that to hold a petroleum right the

⁷⁴ Gao, Z., in Gao ed, as used by Vinogradov, V. Sergei (Dr.), P. 520.

⁷⁵ Passed in Parliament on the 8 September, 2011.

⁷⁶ Passed in Parliament on the 11 of September, 2008.

⁷⁷ Article 16 of the Petroleum Contract between GoSL and European Hydrocarbons will be used for the purposes of this work.

⁷⁸ Petroleum (Exploration & Production) Act, 2011, Section 60.

⁷⁹ Ibid Part XI.

⁸⁰ Section 57.

⁸¹ Section 71.

intended licensee should do an assessment of the impact which the proposed petroleum operations may have on the environment and that a licensee will not be permitted to commence petroleum operations without the approval of its environmental impact assessment;⁸² for the contractor to be strictly liable for pollution or damage caused or resulting from petroleum operations and the contractor shall take all necessary measures to remedy any pollution or damage so caused;⁸³ for protection of the environment and natural resources including taking precautions to prevent pollution;⁸⁴ for general requirements for emergency preparedness;⁸⁵ for inspection of petroleum operations;⁸⁶ for penalty for persons carrying on petroleum operations other than in accordance with the act.⁸⁷

The Act further provides for a decommissioning plan and establishes a decommissioning fund and the licensee is made liable for damages for disposal of decommissioned facility and any damage caused in connection with abandoned facility;⁸⁸ for disposal and use of associated gas.⁸⁹

The present Act has gone a long way in addressing safety and environmental problems which were ignored in the 2001 Act. The provisions in the former Act appeared to be drafted like a framework law, highlighting in broad terms what the operator must do, but not how to do it, what degree and which aspect of petroleum operations they apply, is it technical, administrative or legal compliance, what kind of damage constitutes pollution, will the normal discharge of wastes in the course of E&P amount to pollution, how will it quantify such discharges that will qualify as pollution, what if there are more than one operator in the same vicinity, how do you apportion liability? The provisions in the Act raised more questions than they answered. It gave general powers to the Director General (DG) of the Petroleum Unit to make regulations for a wide range of areas including, the safety and health of workers, prevention of pollution and the taking of remedial action during petroleum operations, protection of fishing etc.⁹⁰

⁸² Section 37(e), 91.

⁸³ Section 92 and 93.

⁸⁴ Section 37(f), 96.

⁸⁵ Section 98.

⁸⁶ Section 135.

⁸⁷ Section 17.

⁸⁸ Section 77.

⁸⁹ Section 54.

⁹⁰ Sections 9,45,54,60,64&65 of the Petroleum E&P Act, 2001.

It is proudly submitted that these are all questions answered by the present Act. It dedicates a whole part for environmental protection, including emergency preparedness. Part 3 of the Act establishes a more cohesive administration for E&P activities, creating a Directorate and given powers to the Minister responsible for the management of Petroleum matters.

The Act has highlighted in broad terms what the operator must do but not how to do it. It is typical of the hard and soft laws discussed earlier in that it creates obligations without specifying how they are to be put into effect. Indeed, this may not be unique to Sierra Leone as it has been noted that all countries have general environment protection act which provide a broad legal foundation for more specific legislation dealing with more specific areas of the E&P process such as EIA, planning, pollution etc.⁹¹ The present national regimes have not sufficiently built upon the framework law given to it by UNCLOS and the Abijan Convention.

3.2. The Environmental Protection Act (EPA) 2008

The Environmental Protection Agency Act 2008 is a mixture of administrative and technical provisions. Its only relevant sections for the purpose of this project, is its provision for Environmental Impact Assessment and the power to make regulations. It provides for persons wishing to undertake different projects (the oil and gas industry included) to apply for a licence pursuant to the First Schedule.⁹² It gives the agency the power to determine whether, by the description of the proposed project, the applicant needs to prepare an EIA.⁹³ The Second Schedule lists out in great detail the factors determining whether a project requires an EIA and these include but are not limited to the environmental impact on the community, project location and whether it transforms the locality, likelihood of impact on the ecosystem, whether it will endanger any species of flora and fauna or its habitat, scale of the project, extent of degradation of the environment. It also provides for the contents of an EIA and includes all of the above plus principal concept and life of project, social, economic and cultural effect on people and

⁹¹ Vinogradov, V. Sergei (Dr.); *op. cit.* P. 520.

⁹² Section 24 EPA.

⁹³Section 25.

society, communities and interested parties consulted, any actions which may avoid, prevent, change, mitigate or remedy the likely effects on society, alternatives, plans for decommissioning etc.⁹⁴ There is provision for the Board to make regulations governing such areas as it sees fit.⁹⁵

This is quite a detailed provision and it is submitted from known facts that it is enforced rigidly. However, EIA is just one of several environmental management and control mechanisms which both laws fail to envisage and which are applicable to the O&G industry and specifically to offshore operations. As a minimum, it is submitted that the State must endeavour to apply Health, Safety and Environmental Management Systems consistent with the International Standards Organization (ISO) 14000 series; these are tools by which government and industry can strive to improve environmental compliance and performance.⁹⁶

They are also used to regulate equipment and product standard for offshore platform construction, limits on discharges and emissions, methods of waste disposal, management of chemicals; also used to assist petroleum operators in improving their environmental performance.⁹⁷ These include EIA, Environmental Management Systems (EMS); Environmental Performance Evaluation (EPE); Environmental Management Plans and Programmes (EMP); Environmental Monitoring and Evaluation (EM&E); environmental auditing and environmental reporting. It is submitted that any credible attempt to regulate offshore petroleum activities in Sierra Leone must and should include the aforementioned management tools and the flexibility for regulation in both acts can be used to cure this inadequacy in the short term.

3.3. Contracts with Oil Operators

The European Hydrocarbons petroleum contract with GoSL provides for environmental protection in Article 16 and gives right to the DG to access all sites in consultation with the contractor; requires the contractor to provide an effective and safe system for disposal

⁹⁴ Third Schedule.

⁹⁵ Section 62.

⁹⁶ Spackman, Alan; *op. cit.* P. 40.

⁹⁷ Vinogradov, V. Sergei (Dr.); *op. cit.* P. 521.

of water and waste oil, oil based mud and cuttings in accordance with accepted Petroleum Industry Practice; the contractor shall also be responsible to take measures to control pollution, to clean up petroleum or released material, and to repair damage resulting from pollution.

However, article 16 of the contract is vague, non-committal and unenforceable. One is tempted to ask what is accepted Petroleum Industry Practice? Who determines what those practices are at any given point in time? How are the said practices related to different jurisdictions? Are they binding? How can the State use it to determine when then the contractor contravenes industry practice? What is the standard applicable to industry practice? These are the many questions with no clear answers.

Drafting of a Petroleum Contract could have been an opportunity for GoSL to have developed an effective and comprehensive E&P regulation and control mechanism which does not involve the DG seeking permission before inspecting an offshore platform/activity.

It is submitted that the present national legislations needs strengthening. A fair attempt will be made at recommending approaches to this effect in the next chapter.

CHAPTER IV

RECOMENDATIONS

It is hereby submitted that the current legal regime in Sierra Leone regulating offshore exploration and productive activities are inadequate having seen in the first chapter how catastrophic pollution emanating from E&P operations can be. The recommendations for the way forward are as follows:

1. Strengthening of domestic legislations.
2. An integrated legislative approach.

The manner in which these could be achieved is laid down below.

4.1 STRENGTHENING OF DOMESTIC LEGISLATIONS

There have been improvements made in the national legislations, seeing that the new Petroleum (Exploration and Production) Act is as recent as 8th September, 2011. As mentioned previously, this Act repealed the former act of 2001. The present Act deals more fully with the aspect of protection of the marine environment. However, the laws as seen in the previous chapters are inadequate to protect the marine environment.

Sierra Leone is fortunate in the sense that she has other neighbouring West African States (Ghana and Nigeria) who have discovered oil some 100 years ago and have, through time developed laws to guide the process of oil and gas E&P, from whose vast knowledge and experience she can borrow and benefit from.

It is no secret that most international conventions are born out of some marine disaster. For example, The International Convention for the Safety of Life at Sea (SOLAS)⁹⁸ was born after The Titanic incident in 1912, International Convention on Civil Liability for Oil Pollution Damage,⁹⁹ and the International Convention for the Prevention of Pollution from Ships 1973,¹⁰⁰ The International Convention relating to Intervention on the High

⁹⁸ London, 1974; entry into force 25 May, 1980.

⁹⁹ Brussels, 29 November, 1969, entry into force 19 June, 1975.

¹⁰⁰ Not in force, modified by the Protocol of 1978 in force 2 October 1983.

Seas in Cases of Oil Pollution Casualties¹⁰¹ and the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage¹⁰² were also as a result of the disaster of The Torrey Canyon incident in 1967. The Exxon Valdez incident in 1989 propelled the domestic legislation of the United States of America, The Oil Pollution Act 1990 (OPA '90). The same can be said for Nigeria, West Africa's big brother and a senior and major exporter of crude oil, who also owe most of its available legislations to a major disaster, like the Funiwa-5 (Texaco) oil-well blowout on the 17 January 1980,¹⁰³ which gave rise to its 1988 Federal Environmental Protection Act. This disaster was followed by the Mobil/Qua Iboe spillage on the 12 January 1998.¹⁰⁴

4.1.1 Nigeria's Legislations Related to Oil Exploration and Production

Nigeria has enacted several legislations committed to environmental protection. These include Petroleum (Drilling and Production) Regulation,¹⁰⁵ which imposes stringent duties on oil companies to exercise all practicable and reasonable precautions in drilling activities through the use of up-to-date equipment and in conformity with the demands of good practice. The Oil Pipeline Act¹⁰⁶ regulates use of oil and gas pipeline and this has a subsidiary legislation which lay down guidelines for the operations of such pipelines.¹⁰⁷ It also obliges a licensee to assure the department of Petroleum in writing on contingency plans established to prevent pollution in case of system failure or accidents and he is further obliged to ensure regular checks and repair of pipelines, failing which punitive measures apply.

The Associated Gas Re-injection Act¹⁰⁸ enacted to reduce gas flaring. It prohibits flaring except with the permission of the Minister and obliges operators to develop ways of utilizing associated gas discovered in petroleum operations. The Federal Environmental

¹⁰¹ Brussels, 29 November 1969, entry into force 6 May 1975.

¹⁰² Brussels, 18 December 1971, entry into force 16 October 1978, cessation, 24 May 2002, replaced by the 1992 Fund Convention.

¹⁰³ Aghalino and Eyinla, Oil Expolration and Marine Pollution:Evidence from the Niger Delta, Nigeria, Kamal-Raj 2009.

¹⁰⁴ Ibid.

¹⁰⁵ 1969 (Cap. 350 of 1990).

¹⁰⁶ (As amended) 1965 (Cap. 338 of 1990).

¹⁰⁷ Oil and Gas Pipeline Regulations; 1995.

¹⁰⁸ 1979 (as amended) 1985(Cap. 26 of 1990).

Protection Agency Act¹⁰⁹ regulates environmental quality standards. It prohibits the release of hazardous and noxious substance into the sea. The Agency pursuant to its powers has made several regulations and guidelines such as the National Guidelines and Standards for Waste Management in the Oil and Gas Sector and are revised from time to time. The FEPA has since 1999 ceded to the Ministry of Environment. The Environmental Impact Assessment Act, which prohibits commencement of any project without first conducting.

They have created a Department of Petroleum Resources and Petroleum Inspectorate Division comprising of various arms or departments of the Ministry of Petroleum resources responsible for the working of the exploitation of oil and gas. Particularly they ensure compliance with applicable statutes and the enforcements of environmental rules and regulations.

Apart from government's efforts to ensure a pollution free environment, the oil companies themselves have set up guidelines for their petroleum activities these include qualified staff, use of best equipment and technology. Pursuant to regulations most companies have entered into alliance with each other for emergency help and cooperation. They engage staff education on environmental matters and create awareness on the need for the safety in their various safety programmes.

Even with all of these Acts, Regulation and Guidelines, Nigeria continues to have O&G related accidents causing environmental disasters. Nonetheless, there are early response systems to deal with such disasters.

4.1.2. Ghana's Legislations Related to Oil Exploration and Production

Ghana, is much younger than Nigeria in petroleum activities but yet has managed to also develop laws and guidelines to help control pollution during operations. A number of laws have also been passed to regulate various aspects of the petroleum industry. They include the following: Energy Commission Act 1997 (Act 541), Petroleum (Exploration and Production) Act, 1984 (PNDCL 84), The Ghana National Petroleum Corporation Act (PNDC Law 64), National Petroleum Authority Act 2005 (Act 691). The object of the

¹⁰⁹ 1990 (as amended in 1992).

Authority is to regulate, oversee and monitor activities in the petroleum downstream industry and The Environmental Protection Agency is responsible for the enforcement of the environmental laws of Ghana.

There is an obligation on international oil companies to ensure that they conduct their activities in accordance with the best international practices prevailing in the industry. In particular, it requires the company to maintain at its worksite a facility capable of dealing adequately with fire, oil spills, gas leakages, blowouts, accidents or other emergency situations so as to prevent or control those situations. An international oil company is therefore required to maintain the required oil facilities to comply with these obligations.¹¹⁰

As a means of enforcing compliance with required standards, Ghana National Petroleum Company (GNPC) personnel are stationed on board the production platform or Floating Production Storage Offshore (FPSO) and other facilities where the oil and gas produced are metered. The GNPC personnel on board would submit daily, weekly, monthly, quarterly and annual production reports to GNPC. There would also be customs representatives on board all production facilities at all times.¹¹¹ In order to protect installations and facilities, the GNPC has made arrangements with the Navy for the conduct of regular patrols in areas where production is taking place.¹¹²

It is advisable for Sierra Leone to follow the legislative model in Nigeria and Ghana, having one single instrument that deals exhaustively with an area vulnerable to pollution. For example The Oil Pipeline Act which as we have seen is specific to use and care of pipelines, and The Associated Gas Re-injection Act, which is specific to flaring.

Further, Sierra Leone is also encouraged, in addition to emulate the practice in the O&G operations in these countries. For example stationing personnel on board FPSOs and in all other facilities where O&G operation is being carried out, to ensure adherence to the governing laws in Ghana. Their practice of naval patrol regularly in these vulnerable areas for security purposes is one that ought to be emulated.

¹¹⁰ Kimathi Kuenyehia Sr. and Ernest Kusi; "Oil Regulation" Getting the Deal Through, 2011, P. .67.

¹¹¹ Ibid. P. 69.

¹¹² Ibid. P. 71.

4.1.3 Ratifying and Domesticating International Legislations

The 1982 United Nations Convention on the Law of the Sea and other conventions have left it up to national legislations to protect their marine environment by building on the framework laws that they have created. In the said Convention, coastal States are directed to adopt laws and regulations to control, reduce, and prevent pollution from seabed activities under their jurisdiction.¹¹³ The importance of protection of its marine environment is seen in the fact that Sierra Leone has ratified nearly all the marine protection treaties such as MARPOL, OPRC, Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matters,¹¹⁴ International Convention on the Control of Harmful Anti-Fouling Systems on Ship,¹¹⁵ International Convention for the Control Management of Ships Ballast Water and Sediments.¹¹⁶

Sadly, apart from MARPOL, they have not been domesticated. This is the also the case on the regional level, such as the Abijan Convention and the Protocol on concerning cooperation in combating pollution in cases of emergency adopted in 1981, in force 1984 (Central Africa).

The OPRC is an important international treaty that addresses the issue of pollution from oil rigs in an efficient manner. It applies to oil installations, defines them and obliges States Parties to have emergency plans in place for accidents on board oil rigs under their jurisdiction. The OPRC, when compared to other international conventions, has been said to be apt for offshore O&G operations, as it covers issues of pollution from oil installations in greater detail. Instead of providing general guidelines for the prevention of pollution from installations, it provides practical guidelines by urging the operators of oil platforms to prepare oil emergency plans.¹¹⁷ It specifies the measures which need to be taken in the aftermath of an incident. It obliges States to make provisions for the actions to be taken by them upon receiving an oil pollution report, and demands the establishment of national and regional systems for preparedness and response.

¹¹³ Article 208.

¹¹⁴ London, 1972, entry into force 30 August, 1975.

¹¹⁵ Adopted 2001, entry into force 17 September, 2008.

¹¹⁶ Adopted in London on 9-13 February 2004, not yet in force.

¹¹⁷ Esmaeili, Hossein; *op. cit.* P. 158.

Experts have suggested that other international and regional treaties dealing with pollution resulting from offshore oil activities should consider the pattern in the OPRC. This suggestion shows how much weight is being placed on the matter and as a result, it is hereby submitted that Sierra Leone having ratified the OPRC, should domesticate it, in order to benefit from its many provisions of international cooperation in pollution response,¹¹⁸ cooperative research and development and traditional cooperation.¹¹⁹ The IMO subject to its agreement, is designated to perform various functions in relation to information services, education and training, technical services, and technical assistance.¹²⁰

The domestication of the OPRC would not only strengthen the national regime but will also provide external help in emergencies in combating pollution incidents and will therefore benefit from the protective powers enshrined therein.

In this regard, having been aware of the dangers posed by offshore drilling of oil and gas, the country cannot wait until an incident happens before policies are put in place. It might be argued that Sierra Leone is in a premature stage of drilling for oil and gas but there is a need to be proactive to minimize pollution incidents by enacting restrictive laws as Primary Safety precautions and Secondary Safety precautions such as domesticating the OPRC, because it is in the wake of pollution incidents that prompt and effective action is essential in order to minimize the damage which may result from such an incident.

Finally, Tertiary Safety precautions in terms of liability and compensation for any damage which may be caused by oil and gas as a result of drilling activities should also be adopted. In terms of liability and compensation, Sierra Leone has endeavoured to ratify most of the international conventions dealing with this aspect. These include The International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea 1996¹²¹ (HNS Convention), Convention on Limitation of Liability for Maritime Claims (LLMC)¹²² and its 1996

¹¹⁸ Article 7.

¹¹⁹ Article 9.

¹²⁰ Article 12.

¹²¹ Not yet in force.

¹²² London, 1976: entry into force December, 1986; ILM 606.

Protocol, the International Convention on Civil Liability for Oil Pollution Damage (CLC).¹²³

The downside of this is that the definition of ships to which the conventions are applicable does include that of offshore units. It may be argued that a mobile floating cargo storage unit can fall under the definition, but this would be uncertain. In effect these compensation regimes will not apply to offshore E&P activities and therefore, national legislation has to provide adequately for compensation.

4.1.4. Legislate by using established International Principles in the Conservation and Protection of the Marine Environment

Sierra Leone has an obligation to legislate and regulate according to the Principle of Prevention, Precautionary Principle, Polluter-Pays Principle and the concept of Sustainable Development.¹²⁴ Therefore it is hereby recommended that in strengthening its laws, Sierra Leone should take these principles into account.

The Principle of Prevention implies that protection of the environment is better achieved by preventing environmental harm than by endeavouring to remedy or compensate for such harm. It is usually implemented by means of application of minimum standards or use of the Best Available Techniques (BATs) or Best Environmental Practices (BEPs).

The Precautionary Principle or approach requires taking appropriate action to anticipate, prevent and monitor the risks of potentially serious irreversible damage from human activities, even without scientific certainty.¹²⁵

The Polluter-Pays Principle implies that the cost of preventing, controlling and reducing pollution are to be borne by the person responsible for causing the pollution and consequential costs.¹²⁶

¹²³ Brussels, 1969: entry into force 19 June, 1976; 1411 UNTS 81.

¹²⁴ Sadeleer, de Nicolas; *Environmental Principles, From Political Slogans to Legal Rules* (Oxford, United Kingdom: Oxford University Press 2002).

¹²⁵ Principle 15, 1992 Rio Declaration.

¹²⁶ Principle 16.

The concept of Sustainable Development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs¹²⁷. The concept of quasi sustainability has also emerged; the overall objective of this approach is to save a portion of the state's wealth for future generations by among other things, creating petroleum trust funds, similar financial mechanism or generally invest in a sustainable substitute.¹²⁸

The current legal regime in Sierra Leone has some elements of the Polluter-Pays Principle but it is not specific. It does not state what will trigger this mechanism or the quantity of discharge or emission before it becomes applicable.

It is hoped that this will be corrected in the new legislations.

4.2 AN INTEGRATED LEGISLATIVE APPROACH

This represents the second recommendation in this work and this is the internationally recommended approach in the spheres of O&G operations.¹²⁹ This approach seeks to consolidate all the petroleum environmental regulations on all levels. This will afford Sierra Leone the opportunity not only to meet its global and regional treaty obligations, but it will also ensure that the regulations are industry-specific, setting out detail operational requirements for the various phases of E&P activities.¹³⁰ In the process, it can take the opportunity to make use of concepts that have crystallized into legal principles that are governing the petroleum industry worldwide.¹³¹

Although this legislative practice on comprehensive petroleum regulations is still in its budding stage and not been adopted by many production States, but examples of it can be found in Latin American countries such as Argentina, Ecuador and Peru.¹³²

¹²⁷ Principle 8.

¹²⁸ Vinogradov, V. Sergei (Dr.); *op. cit.* P. 509.

¹²⁹ Gao, Z., in Gao ed, as used by Vinogradov, V. Sergei (Dr.), P. 520.

¹³⁰ Vinogradov, V. Sergei (Dr.); *op. cit.* P. 521.

¹³¹ *Ibid.* P. 509.

¹³² Dias, Ayesha., "The Oil and Gas Industry in the tangled Web of Environmental Regulation: Spider or Fly?" in Gao, Zhiguo., Ed. *Environmental Regulation of Oil and Gas*, (Kluwer Law, London-The Hague-Boston 1998) P. .38.

Peru, in its thirst to get an all encompassing petroleum law promulgated two regulations for both its mineral and petroleum sectors. These are the Regulations for Environmental Protection in Mining and Metallurgical Activities, 1993 and The Supreme Court Decree No. 046-93-GM Regulations for Environmental Protection in Hydro-Carbon Activities, 1993.¹³³ The latter Regulation consolidates all national laws and deals with all aspect of petroleum activities as they relate to environmental protection such as technical standards on discharge and emission which cover all stages of petroleum operations from exploration and production to processing, transportation and storage throughout the country.¹³⁴

A series of environmental requirements including environmental auditing, EIA, environmental management plan, plan for abandonment, procedures and standards for the conduct of operations in each phase of the operations, violations and penalties are also provided for. These could be found in articles and appendices to the said regulations.

The approach though new, is catching on slowly but surely as it has now reached other parts of the world. Angola has been working on its draft Decree on Environmental Protection in Petroleum Activities and in Nigeria, The Petroleum Industry Bill which is an environmental guideline specific for their petroleum industry. In south-east Asia, Vietnam is also in the process of drafting its own laws in this regard.

Sierra Leone, in implementing this new integrated approach, must take into account that as a State it has the right under international law to exploit its resources pursuant to its environment and development policies but it also has the responsibility to ensure that such exploitation does not harm the environment.¹³⁵ As a result, its obligations under UNCLOS and the Abidjan Convention must be reflected in the new regulatory framework.

Such a law will be able to consolidate all relevant marine environmental protection provisions existing in various acts and conventions mentioned above, in order to create a system that would be consistent, effective and easy to follow. The lacuna in the

¹³³ Ibid.

¹³⁴ Ibid.

¹³⁵ Principle 2 of 1992 Rio Declaration.

contractual approach (contract between GoSL and OGPs) will be cured by the introduction of more comprehensive petroleum regime. It is an approach that is considered to be politically desirable, legally feasible and practically implementable.

CONCLUSION

The aim of this research is to legally analyze the environmental marine pollution laws and regulations and their adequacy to meet the challenges posed by recent offshore drilling of oil and gas in Sierra Leone. To this end, chapter 1 dealt with the consequences of offshore drilling activities and the potential impact on the marine environment. In chapter 2 and 3, the global, regional, other international and national regimes for combating marine pollution from offshore drilling have been analyzed, including the provisions under customary international law. The last chapter broadly covers recommendations based on the conclusions of the analysis in chapters 2 and 3.

It is hereby submitted that the unless these recommendations are considered and acted upon, Sierra Leone remains unprotected and vulnerable as far as protection of its marine environment is concerned.

There is a need for the protection of marine environment. The thought that the marine environment has unlimited absorbing capacity is now found to be untrue. The effect of misuse of the marine environment is now clearly seen in the degradation of the marine environment. Presently, protection of the environment has been included in human rights regimes. The Brussels Convention in its preamble links the present and future generation and obliges present users of the environment to be mindful to preserve the environment for future users of it. Principle 7 specifically encourages States to take steps to protect marine life.

Further, it needs to be recalled that article 195 of UNCLOS specifically prohibits states from acting ‘...to transfer, directly or indirectly, damage or hazards from one area to another.’ In such circumstances the appropriateness of any action a coastal state may take will depend on what is necessary to protect all those who may potentially be affected.

Further, international cooperation to deal with pollution incidents or emergencies at sea is primarily a matter of prudent self-interest, but international law does impose certain obligations on states confronted with such risks. Both customary law and article 198 of UNCLOS indicate that once they are aware of imminent danger or actual pollution of the

marine environment, states must give immediate notification to others likely to be affected.

It is submitted that Sierra Leone should take seriously its international obligations and be mindful of its present and future generation's enjoyment of the environment and particularly for the purposes of this work, to be mindful of its marine environment and be a pre-emptive nation, well prepared to guard against and respond to marine pollution from offshore drilling.

BIBLIOGRAPHY

Textbooks

Birnie, Patricia., Boyle, Alan., Redgwell, Catherine., International Law & the Environment (Oxford, United Kingdom: Oxford University Press, 2009).

Brubaker, Douglas; Marine Pollution and International Law, Principles and Practice, Belhaven Press, 1993.

Churchill, Robin & Lowe, Vaughan; The Law of the Sea , Third Edition, Juris Publishing Manchester, UK, 1999.

CMI, Handbook of Maritime Conventions, Vancouver Edition, LexisNexis, 2004.

De La Rue, Collin and Anderson, Charles B.; Shipping and the Environment, Second Edition, Informa, London, 2009.

Dias, Ayesha.; “The Oil and Gas Industry in the tangled Web of Environmental Regulation: Spider or Fly?” in Gao, Zhiguo.; ed. Environmental Regulation of Oil and Gas, (Kluwer Law, London-The Hague-Boston 1998).

Esmaeili, Hossein; The Legal Regime of Offshore Oil Rigs in International Law, Ashgate Publishing Limited, USA, 2001.

Gao, Zhiguo; “Environmental Regulation of Oil and Gas in the Twentieth Century and Beyond: An Introduction and Overview” in Gao, Zhiguo; ed. Environmental Regulation of Oil and Gas, (Kluwer Law, London-The Hague-Boston 1998).

Gavouneli, Maria; Pollution Offshore Installations, International Environment law and Policy Series, Graham & Trotman/ Martinus Nijhoff, London, 1995.

Gold, Edgar; Gard Handbook on Protection of the Marine Environment, Third Edition, Gard AS, Norway.

Grant, John. P & Cusine Douglas,j.; *The Impact of Marine Pollution*, Allanheld, Osmon & Co publisher Ins.;USA,1980.

Holder, Jane; Lee, Maria,; *Environmental Protection, Law and Policy*, Second Edition, Cambridge University Press, 2007.

International Tanker Owners Pollution Federation Ltd., *Response to Marine Oil Spills*, Second Edition, Witherby & Co., London, 1987.

Sadeleer, de Nicolas.; *Environmental Principles, From Political Slogans to Legal Rules* (Oxford, United Kingdom: Oxford University Press 2002).

Sands, P., *Principles of International Environmental law, Vol1: frameworks, Standards and Implementation*, (Manchester: Manchester University Press, 1995).

Sands, Philippe QC,; *Principles of International Environmental Law*, Second Edition, Cambridge University Press, 2004.

Soni, Ramanal; *Control of Marine Pollution in International Law*, Juta & Co. Ltd 1995.

Sunkin, Maurice; Ong M. David., Wight, Robert., *Sourcebook on Environmental Law* 2nd Edition (London- Sydney, Cavendish Publishing Limited, 2001).

Taverne, Bernard; *Petroleum, Industry and Governments: A study of the Involvement of Industry and Governments in the production and use of petroleum*, 2nd Edition, Kluwer Law International B.V, Netherlands, 2008.

Vinogradov, V. Sergei (Dr.) and Wagner, Jay Paul., “International Legal Regime for the Protection of the Marine Environment Against Operational Pollution from Offshore Petroleum Activities” in Gao, Zhiguo ed. *Environmental Regulation of Oil and Gas*, (Kluwer Law, London-The Hague-Boston 1998).

Williams, H; Meyers, C,; *Oil and Gas Law (Abridged Second Edition)*, LexisNexis, 2004.

Articles

Aghalino and Eyinla; “Oil Expolration and Marine Pollution: Evidence from the Niger Delta, Nigeria,” Kamal-Raj (2009).

DeMESTRAL, A.L.C.; “The Prevention of Pollution of the Marine Environment Arising from Offshore Mining and Drilling” (1979) 20 Harv. Int’l. L. J. 469.

International Energy and Resources Law and Policy Series; Disused Offshore Installations and Pipelines, Towards “Sustainable Decommissioning.”

Kimathi Kuenyehia, Sr and Ernest Kusi; “Oil Regulation” Getting the Deal Through, 2011.

Odidi Okidi C. Regional Control of Ocean Pollution, Legal and Institutional Problems and Prospects, Sijthoff Publications on Ocean Development.

Spackman, Alan., “Environmental Standards for Offshore Drilling” Business Briefing: Exploration & Production (2003).

Vinogradov, V. Sergei (Dr.), “ Environmental protection in the petroleum industry”, Encyclopaedia of Hydrocarbons, Vol IV/ Hydrocarbons: Economics, Policies and Legislation, 507.

Websites

<http://www.unep.org/regionalseas/about/default.asp>; date accessed 10th November, 2011.

<http://www.unep.org/environmentalgovernance/> accessed on the 10th November, 2011.

<http://www.usatoday.com/news/nation/story/2>. Accessed on the 23rd March 2012.