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# Occupational health and safety framework in the upstream oil and gas sector: a case study of Rwanda.

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## **Recommended Citation**

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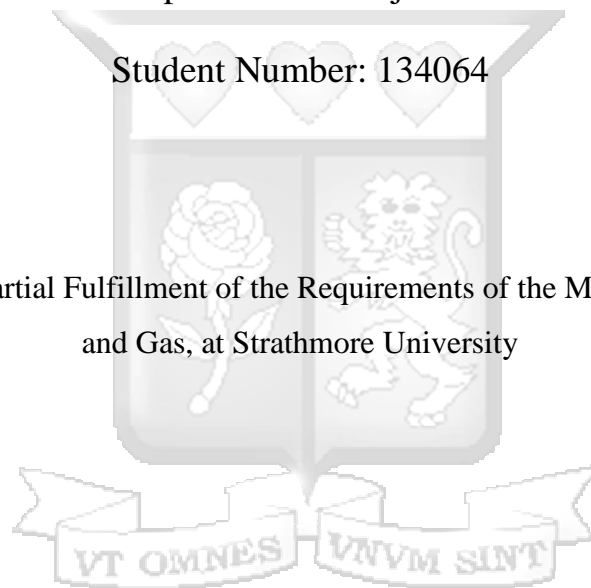
**Occupational Health and Safety Framework in the Upstream Oil and Gas  
Sector: A Case Study of Rwanda**

BY

**Specioza Mukanjishi**

Student Number: 134064

A Thesis Submitted in Partial Fulfillment of the Requirements of the Master of Laws Degree, Oil  
and Gas, at Strathmore University



**Master of Laws**

**Strathmore University**

**December, 2021**

## Declaration

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the Thesis itself.

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Specioza Mukanjishi



19<sup>th</sup> September 2021

### Approval

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## Abstract

Rwanda's upstream oil and gas sector has realized the benefit for exploring its natural resource having recently discovered commercially viable quantities of oil and gas. Rwanda is still at its nascent stages of oil and gas operations. There is however, the need for the sector to legislate the inescapable 'occupational health and safety' concerns exposed to workers.

The study explored the legal and institutional framework that mirrors the sector aspects of occupational health and safety. The inadequacy of occupational health and safety provisions under Rwanda's Petroleum Act to establish whether the requirements meet international best practices remains problematic.

This study was guided by two research questions. The first (1) research question determined whether upstream laws of Rwanda have catered for occupational health and safety concerns within the sector.

The second (2) research question determined whether occupational health and safety requirements in the upstream sectors should be enforceable in Rwanda, and if the said meets international best practice standards.

As a yardstick, the study underscored the presence of occupational health and safety framework within other jurisdictions. These include Norway, Angola and UK for Rwanda's sector placement as a proposed methodology.

This study was conducted through analysis of primary and secondary data such as statutes, Text books, scholarly Articles, Journals, and Reports.

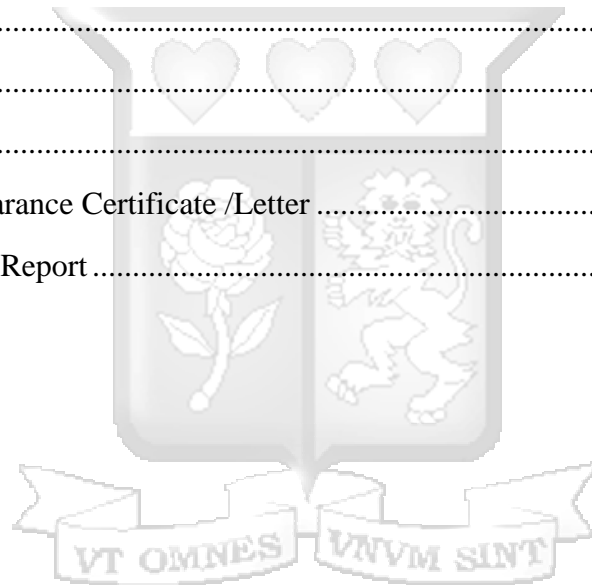
This study hopes to inform the Government of Rwanda(GOR), and policy makers within the upstream sector on how best to implement the occupational health and safety framework through making reforms so as to incorporate the concerns within the sector.

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## List of Abbreviations

<b>AIPN</b>	Association of International Petroleum Negotiators
<b>BP</b>	British Petroleum
<b>CSR</b>	Corporate Social Responsibility
<b>GDP</b>	Gross Domestic Product
<b>E&amp;A</b>	Exploration and Appraisal
<b>FID</b>	Final Investment Decision
<b>GOR</b>	Government of Rwanda
<b>HSWA</b>	Health and Safety at work Act
<b>ILO</b>	International Labor Organisation
<b>IOC</b>	International Oil Companies/Corporations
<b>OHS</b>	Occupational Health & Safety
<b>OPEC</b>	Organisation of Petroleum Exporting Countries
<b>OPRC</b>	Convention on oil Pollution Preparedness, Response, and Cooperation
<b>OSHA</b>	Occupational Health and Safety Act
<b>PSA</b>	Petroleum Safety Authority
<b>RMB</b>	Rwanda Mines, Petroleum and Gas Board
<b>RNRA</b>	Rwanda Natural Resources Authority
<b>RSSB</b>	Rwanda Social Security Board
<b>UDHR</b>	Universal Declaration of Human Rights
<b>UNGPs</b>	United Nations Guiding Principles
<b>WHO</b>	World Health Organisation

## Acknowledgements

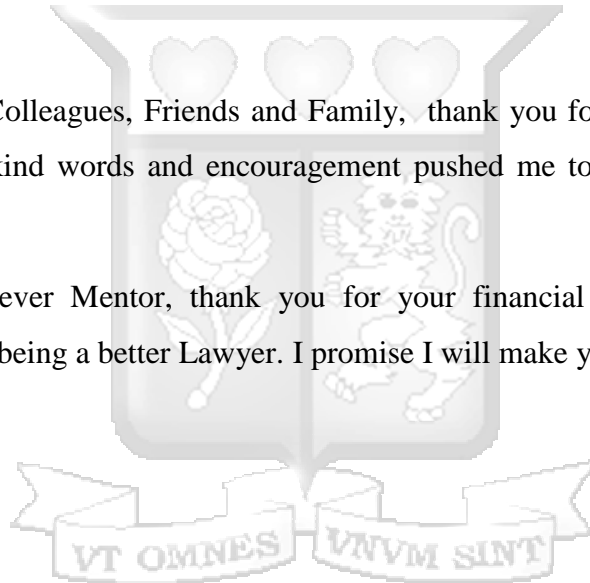
Dear God, I will always Acknowledge your goodness. When I was thick and confused, you supplied wisdom.

To my Lecturers: Tom Mitro, Dr. Melba Wassuna, Dr. Eduardo Pereira, Dr. Damilola Olawuyi and Dr. Francis Kariuki. Thank you for enlightening me towards various concerns on “Occupational Health and Safety in the Upstream oil and gas sector”.

I would like to thank my supervisor, Dr. Erick Komolo for helping and guiding me towards formulating this topic, and his professionalism in the academic sphere as a Supervisor, Lecturer and Academician.

To my fellow program Colleagues, Friends and Family, thank you for the kind support in this project Journey. Your kind words and encouragement pushed me towards accomplishing my research.

And finally, to my Forever Mentor, thank you for your financial support and for always encouraging me towards being a better Lawyer. I promise I will make you proud someday.



## List of Cases

Deepwater Horizon -BP Gulf of Mexico Oil Spill (2010)

Brown v Humble Oil & Refining Co (1935) Tex. S. C.

Piper Alpha Disaster (1988), Issue 925/926

Royal Dutch Shell oil spill in Nigeria (2012)

City of Edmont v Vernon(2009)

Smelter case –United States v Canada(1938)

Urgenda Foundation v Netherlands(2015) Haza C/09/00456689 (June24,2015); aff'd (Oct.9,2018)



## List of Statutes

British Petroleum Act 1987

Constitution of the Republic of Rwanda 2015

Local content Bill 2018 (Kenya)

Mineral workings(Offshore Installations) Act 1971

Oil&Gas (Enterprise Act) 1982

Petroleum (Local Content and Local Participation Regulations) 2013, Ghana

Petroleum Act of Rwanda 2016

Petroleum Submarine Pipeline Act 1975

The Upstream Policy of Rwanda 2013



## Chapter I : Introduction

It could be argued that the Upstream sector's risks suffered by employees may not be prevented 100%. However, 'Safety First...'<sup>1</sup>

### 1.1 Background to the study

Occupational health and safety (OHS) is generally defined or relates to health, safety, and welfare issues in the workplace. It includes the laws, standards, and programs that are aimed at making the workplace better for workers, along with co-workers, family members, customers, and other stakeholders.<sup>2</sup> This therefore means that improving a company's occupational health and safety standards will ensure good business, a better brand image, and higher employee morale.

Occupational health and safety is adopted by resource rich countries through different strategies. The strategies vary on a case to case basis and may include requirements in law to promote local employment and national industry participation of employees or enhance skills development among local employees.<sup>3</sup>

Increasingly, many countries are introducing safeguards and protection mechanisms in their framework through legislation, regulations and industry contracts.<sup>4</sup> This therefore will mitigate some of the sector concerns brought about by the activities of the sector like Oil spillage, gas flaring as a result of operational, geological and equipment risks created.

The recent discovery of petroleum and huge gas in Lake Kivu - Rwanda has necessitated the exploration of the resource which often accounts for a huge share to the country's Gross Domestic Product(GDP).<sup>5</sup> One of the main challenges however, that Rwanda faces in the wake of its latest discoveries of Petroleum and Gas in the law is the ability of her petroleum laws to insure occupational health and safety within the sector which creates a huge legal risk towards employees within the upstream sector.

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<sup>1</sup> Health, Safety, and Environmental Encyclopedia, <https://hsewatch.com/safety-first> Accessed on 12 August 2020.

<sup>2</sup> Occupational health and safety(OHS), <https://www.safeopedia.com/definition/439/occupational-health-and-safety-ohs> , Accessed on 12 August 2020.

<sup>3</sup> Tordo, et al, Local content policies in the oil and gas sector. 115-117.

<sup>4</sup> Olawuyi DS, 'Local content requirements in oil & gas contracts: Regional trends in the Middle East and North Africa.' *Journal of Energy and Natural Resources Law*, (2018).

<sup>5</sup> Peter CD, and Micheal SC, *Oil, Gas, and Mining: A source book for Understanding the Extractives Industries*, World Bank Group, 2017, 30.

The oil and gas exploration presents unique and complex risks, which are inevitable during exploration and production(E&P) which using the assumption –based reasoning might lead to failure in the final Investment of the projects. This is therefore why the presence of the profitable reserves has been termed as a ‘mixed blessing’ with a lot of optimism for prospects’.<sup>6</sup>

In Rwanda’s vision 2050 report (2016), the Minister of Finance and Economic Planning, Rwanda National Dialogue Presentation, recognized new opportunities of Transformation for prosperity towards citizens through sectors like the extractive industries, mining, oil and gas, with a focus on value addition to the country.<sup>7</sup> This undoubtedly explains a country’s blessing through its sectors with employment opportunities and capacity building.

Similarly, there have been on-going discussions on how Rwanda can benefit from their natural resources and maximize on the economic opportunities offered by the emergent upstream petroleum industry. The Rwanda’s Petroleum Regulatory Authority(“RMB”) came in to regulate the sector. However, a framework on occupational health and safety within the specific sector has not been catered for. The sector must have a clear division of controlling mechanisms for mitigation of the risks towards workers ensuring the sector is efficient, and encouraging investment through robust policies and guidelines.

Peter CD, and Michael SC demonstrate that absence of occupational health and safety policies and regulations to combat the risks in Rwanda’s upstream sector is a huge legal risk which could threaten business and sector employees.<sup>8</sup>

The rationale for adopting an effective framework is the prospective health and safety concerns of the sector which are mirrored through past upstream disasters that have happened. This then calls for institutions in charge to adhere to sector’s known principles like the preventional principle, precautionary principle, and human rights perspective approach.

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<sup>6</sup> Martin MM, ‘An Evaluation of the Legal & Institutional Framework Governing Insurance of Upstream Petroleum Operations: A case study of Ghana’, Unpublished LLM Thesis, Strathmore University Nairobi, 2019, 8.

<sup>7</sup> Republic of Rwanda: Vision 2050,

[https://www.minecofin.gov.rw/fileadmin/user\\_upload/Minecofin/Publications/REPORTS/National\\_Development\\_Planning\\_and\\_Research/Vision\\_2050/English-Vision\\_2050\\_Abridged\\_version\\_WEB\\_Final.pdf](https://www.minecofin.gov.rw/fileadmin/user_upload/Minecofin/Publications/REPORTS/National_Development_Planning_and_Research/Vision_2050/English-Vision_2050_Abridged_version_WEB_Final.pdf) , Accessed on 7 September,2021.

<sup>8</sup> Peter CD, and Micheal SC, Oil, Gas, and mining: *The Upstream Segment*, World Bank Group, 5.

The sector regulators additionally need to adhere to international practice standards in place relating to occupational health and risks like:

- The International Labor Organization (“ILO”) guidelines on the ‘promotional framework for occupational health and safety convention (No.187) which sets out that workers must be protected from sickness, diseases and injury arising from their employment.
- The promotional framework for occupational safety and health convention, (2006). This convention is designed to provide for a coherent and systematic treatment of occupational safety and health issues and to promote recognition of existing conventions on occupational safety and health.
- The safety and health in mines convention, 1995( No.176). This convention regulates the various aspects of safety and health characteristics for work in mines, including inspectors, special working devices and special protective equipment for workers.
- The safety and health in construction convention, 1988 ( No.167). The convention provides for a preventive and protective measures within the workplaces, the machines and equipments used, work at heights and work executed.

A report concluded on employee’s health and safety in 2015...shows that over 2.3 million occupational accidents happen annually around the world with an estimated death of over 6,000 employees daily. These work uncertainties however depend on countries level of industrialization...”<sup>9</sup>

This might however lead many to conclude that these instruments are not bidding. Rwanda is however a signatory country to many, and so the reason to adopt the practices. The occupational health and safety guidelines is crucial. It has got ends. One cardinal end is the protection of workers’ rights (‘Human rights’) within the sector.

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<sup>9</sup> Suxia L, Edmund NKN, and others, ‘The State of Occupational Health and Safety Management Frameworks (OHSMF) and Occupational Injuries and Accidents in the Ghanaian Oil and Gas Industry: Assessing the Mediating Role of Safety Knowledge, <https://www.hindawi.com/journals/bmri/2020/6354895/> on 19 August 2020.

## 1.2 Statement of Problem

- There is absence of a legal framework on occupational health and safety concerns within the upstream sector in Rwanda. The existing sector laws are silent on the issues of occupational health and safety of the workers within the sector.

The upstream sector is known for exploration and production( E&P) activities which pose a threat to worker's safety and health working in the sector. The hazards range from oil spillages, Gas flaring, Effluent discharge, firebreakouts, accidents, fatalities, etc which affect worker's health and safety.

- Enforceability of occupational health and safety in Rwanda's upstream sector is problematic, thus the concerns cannot be adjudicated in Rwandan courts.

**Note: The study addressed health and safety concerns faced by workers within the upstream sector so as to legislate sector policies for mitigations of the risks.**

## 1.3 Research Aim and Objectives of Study

The research aim is the overarching goal or the general purpose of the project. The Research objectives are specific statements on key ideas and essential features of this project.

The republic of Rwanda is a signatory to the international instruments on Occupational Health and Safety. This is why the constitution of Rwanda revised in 2015, calls for laws to be put in place...<sup>10</sup>

The following were my research aims and objectives to the study.

- a) **Aim:** To examine whether an 'Occupational Health and Safety' framework should be enforced in the upstream sector in Rwanda.

### b) Objectives

The objectives of this dissertation were to:

- Advocate for the reform of an occupational health and safety framework within Rwanda's upstream oil and gas sector so as to cater for sector concerns towards employees.

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<sup>10</sup> Article 21, Constitution of Rwanda, revised in (2015)

- Compare the framework for occupational health and safety with other countries like Norway, Angola and UK.
- Determine whether the existing general law on occupational Health and safety in Rwanda can be reformed to include the existing concerns of the sector.

#### 1.4 Justification/Rationale of the Study

- The study advocated for an occupational health and safety framework within Rwanda's upstream oil and gas sector. The nature of the sector exposes sector employees to risks ranging from operational, geological, equipment, etc.
- The study would benefit national sector employees through mitigation measures like adoption of leak detection technologies, provision of insurances to workers, Trainings and workers safety programs, setting of oil spill reduction targets, etc.
- Additionally, the employees would have effective channels of 'Access to Remedy' incase of liability. This is a component of the UN Guiding Principles on the business and human rights ( 'UNGPs') which requires states to take appropriate steps to prevent, investigate, punish and redress business-related human rights abuses within their territory and/or jurisdiction.
- Transparency and Accountability within the sector will be ensured.

#### 1.5 Hypothesis

- Occupational Health and Safety should be enforceable in the Upstream sector in Rwanda for purposes of Transparency and Accountability.

#### 1.6 Research Questions

This research was anchored on the following two research questions:

- Has the current upstream laws of Rwanda catered for Occupational Health and Safety concerns in the sector ? **To examine the existing law on Occupational Health and Safety and suggest for reforms to include the unique concerns.**
- Should an occupational health and safety framework be enforceable in Rwanda upstream oil and gas sector? **A comparative study to be made of Norway, Angola and the UK.**

#### 1.7 Research Methodology and Approach

The research was hinged on qualitative approach.

- The approach was a **Comparative Research Methodology**. The comparison undertaken was comparing three legal systems having adopted an occupational Health and Safety system within their upstream sector. This is Norway, Angola and UK.
- This methodology was chosen as a possible tool for Rwanda to draw possible lessons for an effective occupational health and safety framework implant in its upstream sector.
- I embarked on both primary and secondary sources like legislations ( Acts of parliament and secondary legislations of these countries), Case laws on occupational health and safety, Journal articles, Opinion pieces, etc.

### **1.8 Research Design**

This research was largely anchored on qualitative analysis. The study was an in-depth analysis of ‘Occupational Health and Safety’ framework in the upstream sector in Rwanda.

### **1.9 Limitations or Delimitation of the Methodology (Scope)**

The following were limitations I encountered in my research

- The supply of data explicitly on issues of occupational health and safety in Rwanda was termed as confidential and inaccessible for research purposes. The Rwanda Mines, Petroleum and Gas Board( ‘RMB’)is the institution leading this sector. ( Limited access to data). The Failure to obtain this essential information was quite a challenge because it left questions of practice within the sector unanswered.
- There was a challenge also in obtaining data regarding the enforceability of occupational health and safety issues under Rwandan courts. The reason is mainly because the sector is still new and the country is within its exploration stage. This therefore means that there are hardly any pending litigation before courts of law regarding the sector.
- Lack of previous research studies on the topic since the sector is still new in Rwanda. In view of this, it is difficult to pinpoint the performance of the health and safety unit practically within the sector altogether with its related impacts towards the workers.

## 1.9.1 Literature Review

### 1.9.2 Introduction

This section of the study attempted to present various Authors scholarly works and opinions undertaken within the emerging oil and gas upstream sector relating to the concept of Occupational Health and Safety. The various scholars that have addressed the issue of occupational health and safety, with the industry known land mark cases or incidences that have happened in the past. The study will also suggest recommendations on how Rwanda can respond to these upstream concerns for a proper implant of the same in Rwanda's upstream sector.

Jilcha Daniel K emphasized on occupational Health and Safety as of 'concern to human well-being involved within the sector, which necessitates safety legislations and standards'.<sup>11</sup> The attempt to having an occupational Health and Safety framework within the sector is indeed not a waste of time. The sector activities like oil spills and blowouts cause health and safety risks. Human rights are therefore key to occupational health and safety regulatory framework.

Jilcha's opinion was supported by Na'ankwat Lami Dabup who demonstrates that the concept of social and civil responsibility to organisations and the people is paramount because the environment usually has a negative impact on human-well being. The health of the planet's natural resources will continue to be vital to the livelihood of all of earth's living things. Therefore, it has become imperative to safeguard natural resources.<sup>12</sup>

The argument presented therefore, reflects the ABC's Theory of Safety and the Utilitarian Theory as presented in chapter two of the Thesis in having a regulatory framework so as to safeguard the activities of the sector.

This is why Quinlan, Michael, Philip and others advocated for occupational health and safety to be managed. In their view, occupational health and safety present serious and costly

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<sup>11</sup> Jilcha DK, 'A literature review on Global Occupational Safety & Health Practice & Accidents Severity', *International Journal for Quality Research*,(2016),279-280, <http://ijqr.net/journal/v10-n2/4.pdf> , Accessed on 12 May 2021.

<sup>12</sup> Na'ankwat LD, 'Health, Safety and Environmental Implications in Nigeria's Oil and Gas Industry', Unpublished Thesis, Nelson Mandela Metropolitan University, October 2012, 14-15.

burden to all countries and major challenges to managers, unions, governments and workers employed within the sector, and thus the reason to address the concerns.<sup>13</sup>

Forexample, Jennifer S, Salim G, Necer M and Mervin B demonstrated that countries like the United states have tried to address occupational health and safety concerns. Companies like ExxonMobil has initiated a new committee for infectious disease that may affect workers and communities. With regards to training, the company's Procurement Sustainability Network trained more than 200 employees about procurement sustainability in 2012.<sup>14</sup>

In regards to gas emissions concerns, oil companies like Chevron had reduced their greenhouse gas emissions intensity by 0.7 metric tons of CO<sub>2</sub> per 1,000 barrels at the upstream operations and by 0.4 metric tons of CO<sub>2</sub> at the downstream ones in 2012. However, they had recorded 232 spills with a volume of 3,092 barrels.<sup>15</sup>

This emphasis corresponds to the recent on going case rendered on the 26 May 2021 by the Dutch court. In this ruling, 'shell is being ordered to deepen carbon cuts in the land mark dutch climate case' by cutting emissions by 45% by 2030.<sup>16</sup>

This decision of the dutch court to the researcher's opinion is way far an international best practice within the sector since it addresses issues of occupational health and safety towards the workers and sector's sustainability.

Marathon oil has developed an emergency preparedness through an internal management system named Global Performance System (GPS) to enhance its EHS and social responsibility performance and meet regulatory compliance. The company

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<sup>13</sup> Quinlan, Michael, Philip, 'Managing occupational health and safety', <https://eprints.mdx.ac.uk/7085/>, Accessed on 17 June 2021.

<sup>14</sup> Jennifer S, Salim G and others, 'Towards Sustainability in the Oil and Gas Sector: Benchmarking of Environmental, Health and Safety Efforts', *Journal of Environmental sustainability*, (2013), 106, <https://scholarworks.rit.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1028&context=jes>, Accessed on 17 June 2021.

<sup>15</sup> Jennifer S, Salim G and others, 'Towards Sustainability in the Oil and Gas Sector: Benchmarking of Environmental, Health and Safety Efforts', *Journal of Environmental sustainability*, (2013), 105, <https://scholarworks.rit.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1028&context=jes>, Accessed on 17 June 2021.

<sup>16</sup> Shell ordered to deepen carbon cuts in land mark dutch climate case, <https://www.reuters.com/business/sustainable-business/dutch-court-orders-shell-set-tougher-climate-targets-2021-05-26/>, Accessed on 17 June 2021.

has regional and local response teams. However, it still faces challenges in placing teams in all the sites.<sup>17</sup>

According to the Authors, an occupational health and safety policy is the foundation of the whole management systems and it specifies the goals that the organization is prepared to undertake with commitment to continual improvement, compliance with laws and regulation, pollution prevention, and prevention of injury and illness.<sup>18</sup>

While Rwanda is carrying out Methane gas exploration in Lake Kivu,<sup>19</sup> with prospects of oil, we can state that the sector needs to have a strengthened occupational Health and safety(OHS) framework to protect employees and the sector's sustainability. This indeed corresponds to the the ABC's and Utilitarian Theories of the sector to have guidelines that correspond to the sector needs.

Rwanda in particular (and has often done) participated in the writings of and negotiation of international human rights treaties and other instruments. Some of the international instruments relevant is the 'International Labor Organization (ILO) guidelines on the Promotional Framework for occupational health and safety convention (No.187), and its accompanying Recommendation (No.197)'.<sup>20</sup>

The safety and health in mines convention, 1995( No.176), where this convention regulates the various aspects of safety and health characteristics for work in mines, including inspectors, special working devices and special protective equipment for workers.<sup>21</sup> and may other instruments as will be analysed.

It is therefore not far –fetched to state that the country needs to have an effective occupational health and safety framework within the sector. It might be true that the sector is

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<sup>17</sup> Jennifer S, Salim G and others, 'Towards Sustainability in the Oil and Gas Sector: Benchmarking of Environmental, Health and Safety Efforts', *Journal of Environmental sustainability*, (2013), 106, <https://scholarworks.rit.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1028&context=jes> , Accessed on 17 June 2021.

<sup>18</sup>Jennifer S, Salim G and others, 'Towards Sustainability in the Oil and Gas Sector: Benchmarking of Environmental, Health and Safety Efforts', *Journal of Environmental sustainability*, (2013),107, <https://scholarworks.rit.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1028&context=jes> , Accessed on 17 June 2021.

<sup>19</sup> Rwanda celebrates the success of Lake Kivu Methane to Electricity Project, <https://www.eaif.com/rwanda-celebrates-success-of-lake-kivu-methane-to-electricity-project/>, Accessed on 16 August 2020.

<sup>20</sup>International Labor Organisation, (No.197) and (No.187), 31 May 2006.

<sup>21</sup>UN, International Labour Organisation: International Labour standards on occupational health and safety, <https://www.ilo.org/global/standards/subjects-covered-by-international-labour-standards/occupational-safety-and-health/lang--en/index.htm> , on 12 February 2021.

still new, however, for sustainability, the international community expects to see progress through forums, share expertise and experiences from other jurisdictions having developed upstream sectors in order to minimize the risks within the sector likely to affect the workers.

This is why a benchmark from advanced jurisdictions like Texas, Norway and UK would be paramount in realizing how occupational health and safety risks have been dealt with in terms of having established regulations and their enforceability.

### **1.9.3 The Rationale for Adopting Occupational Health and Safety Framework in the Upstream Oil and Gas Sector in Rwanda**

The various research conducted globally indicated that Exploration and production (E&P) is a huge business within the upstream sector. However, analyzing the nature of the sector, many might conclude that the sector is also a blessing in disguise due to the risks it presents towards workers.

Landmark cases of occupational health and safety were cited in the history of the upstream oil and gas sector like; The piper Alpha disaster (1988) which happened in the UK,<sup>22</sup> Texas city disaster (2010),<sup>23</sup> etc, and of which all of these incidents recorded deaths of workers within the sector, many employees attained permanent while others simple injuries as a result of the disasters along the oil platforms.

According to Karen N, & McLeod R, the huge explosions have caused ‘chemical hazards, physical hazards, and Ergonomic hazards to human life, property, and the environment’.<sup>24</sup>

An example is the most recent 2010 case of “United States v BP Exploration & Prod, Inc., et al.” The Judgement was rendered on 22 February 2012 with Judge Barbier who rendered the decision that Deepwater Horizon was liable for the civil penalties since it was fully engaged in the activities on Macondo well.<sup>25</sup>

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<sup>22</sup>July 6, 1988: The Piper Alpha Disaster, 5<sup>th</sup> May 2018, <https://www.maritime-executive.com/article/july-6-1988-the-piper-alpha-disaster>, on 16 August 2020.

<sup>23</sup>Deepwater Horizon Oil spill, 20 April 2010, <https://www.britannica.com/event/Deepwater-Horizon-oil-spill>, Accessed on 12 May 2021.

<sup>24</sup>Karen N, & McLeod RW, ‘Offshore industry: Management of Health hazards in the upstream petroleum industry’, *Occupational medicine Journal*,(2009),305-306, [https://www.researchgate.net/publication/26676483\\_Offshore\\_industry\\_Management\\_of\\_health\\_hazards\\_in\\_the\\_upstream\\_petroleum\\_industry](https://www.researchgate.net/publication/26676483_Offshore_industry_Management_of_health_hazards_in_the_upstream_petroleum_industry) Accessed on 16 August 2020.

<sup>25</sup>United States v BP Exploration & Prod, Inc., et al, (2010), [https://www.epa.gov/sites/production/files/2013-10/documents/deepwater-rulingonliability\\_0.pdf](https://www.epa.gov/sites/production/files/2013-10/documents/deepwater-rulingonliability_0.pdf), Accessed on August 2020.

The other case is the City of Edmond v Timothy K. Vernon”, plus the workers, that was decided on the 22 December 2009, the claimants brought a lawsuit to the compensation civil court Appeals of Oklahoma stating that as a firefighter, he had been exposed to a wide variety of burning and hazardous materials which caused him cancer. The court awarded the claimant compensation stating that the city of Edmond had failed to overcome the issue by minimizing the causes of the disease at the workplace.<sup>26</sup>

The idea presented by Jilcha K,<sup>27</sup> for the need towards having an improved health and safety system within the sector would help Rwanda to establish an occupational Health and safety(OHS) framework to safeguard the workers within the sector. The Author acknowledges that occupational health and safety concerns is a threat to human well –being working within the sector involved with high technology and exploration equipments used by the very same workers. He therefore calls upon for the sector’s safety legislations and worker’s standards to be improved at all times.<sup>28</sup>

This means that workers involved should be highly protected from upstream related activities ranging from oil spills, and other disasters caused as a result of Operational risks, Equipment risks, Geological risks and others. These risks if not mitigated through robust industry policies would result into health and safety concerns. These concerns include fatalities, high death rates, permanent disabilities and many more.

A study report conducted by the European Agency for Safety and Health at work indicates that an overview of the most important issues related to occupational safety and health (OSH) for workers in the sector in terms of working conditions are risks and prevalence of exposures, and health outcomes, and identifies information gaps and challenges. Cleaning includes a broad range of activities performed in different work environments across all sectors.

The risks to which cleaners are exposed depend on the tasks they perform and the premises they work in. As most cleaning work is performed as contract cleaning,

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<sup>26</sup>Edmond v Timothy K. Vernon(2009), <https://caselaw.findlaw.com/ok-court-of-civil-appeals/1128725.html>, Accessed on 14 August 2020.

<sup>27</sup> Jilcha KD, Kitaw ‘ A literature review on Global Occupational Safety & Health Practice & Accidents Severity’, *International Journal for Quality Research*,(2016), 39, <http://ijqr.net/journal/v10-n2/4.pdf> , Accessed on 12 May 2021.

<sup>28</sup> Jilcha KD, Kitaw, ‘ A literature review on Global Occupational Safety & Health Practice & Accidents Severity’, *International Journal for Quality Research*, (2016), 279-280.

employers sometimes face difficulties in managing OSH conditions in the 'host companies' in which their staff work. Accessing information on occupational accidents and diseases remains challenging, as there are cleaning workers in many different sectors and it is therefore difficult to put monitoring systems in place. In addition, a significant part of the cleaning workforce is undeclared, especially in private households, which also complicates data collection.

Studies on work-related diseases indicate that musculoskeletal disorders, respiratory diseases, including asthma, skin diseases and mental ill health are the most common work-related health effects found in cleaners, and suggest a higher prevalence of health problems in workers in the cleaning sector than in other sectors.<sup>29</sup>

The concerns provided by the European Agency for Safety and Health reflect the same concerns that workers working in the sector face which impact their health and safety, yet nations like Rwanda can develop robust policies governing activities of the sector. This would reduce work related injuries, death rates and improve sustainability of the sector at the same time.

The robust and effective legislations within the sector would provide a sound basis for a good and effective management with improvement to Health and Safety of the workers within the sector which in the long run encourages a thriving workforce, job satisfaction and sustainability in the sector.<sup>30</sup>

The emphasis for having a sound occupational health and safety framework was additionally highlighted in the 2011 report of the president of the United States of America (USA), President Barack Obama, concerning the offshore disaster in Mexico. Part of the report investigations highlighted that the cause of the disaster which led to deaths of workers was due to a failure of risk management which required reforms that were inadequate.<sup>31</sup>

The issue of occupational Health and safety has indeed been debated on for centuries. This then explains why the majority oil and gas producing countries such as the United

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<sup>29</sup> European Agency for Safety and Health at work, Literature review: The occupational health and safety of cleaning workers, <https://osha.europa.eu/en/themes/dangerous-substances/practical-tools-dangerous-substances/literature-review-occupational> , on 17 June 2021.

<sup>30</sup>K. Jilcha, D. Kitaw, ' A literature review on Global Occupational Safety & Health Practice & Accidents Severity', *International Journal for Quality Research*, 39.

<sup>31</sup> National commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, January 2011, <https://www.govinfo.gov/content/pkg/GPO-OILCOMMISSION/pdf/GPO-OILCOMMISSION.pdf>, On 16 August 2020.

Kingdom(UK), United States of America, Norway and many others have set guidelines to protect the health and safety of workers within the sector considering past events that have happened within the industry.

According to the African Tripartite workshop report of 2017 conducted in Mozambique, the primary occupational hazards within the sector mainly suffered by offshore workers during exploration and production(E&P) range from issues of physical hazards, Ergonomic hazards, Biological hazards, and psychological hazards.<sup>32</sup>

In East Africa, countries like Uganda, have established the occupational Health and safety Act (2006), with the purpose of regulating and safe guarding health and safety of persons employed in the oil and gas sector. These guidelines require monitoring plus controlling the release of dangerous substances towards the environment and liable to cause diseases to humans and the animal life.<sup>33</sup>

The discovery of petroleum exploration in Rwanda started in 2007,<sup>34</sup> with the Methane gas sub-sector which has also been active since 2009. This therefore necessitated an upstream policy so as to regulate the activities of the sector, which came in place in 2013.<sup>35</sup> This policy was later followed by an upstream exploration and production law which was passed in 2016.<sup>36</sup>

The concept of occupational Health and safety however seems to be new in the country's sector laws because the Petroleum law has not addressed the concerns towards workers of the sector. This therefore doesnot reflect on he sector best practice standrads since various studies have indicated that the activities of the sector need to be managed to protect the activities of the sector carried out by its workers.

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<sup>32</sup> International Labor organization, 'occupational Safety and Health in the oil and gas industry in selected sub-Saharan countries', 17-18 May, 2017, 16-22, [https://www.ilo.org/wcmsp5/groups/public/---ed\\_dialogue/---sector/documents/meetingdocument/wcms\\_554798.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/meetingdocument/wcms_554798.pdf), On August 2020.

<sup>33</sup> Emmanuel BK, 'Environmental Regulation of Oil and Gas Exploration and Production in Uganda', *Journal for Energy & Natural Resources Law*, (2012), 215.

<sup>34</sup>Oil Exploration to begin in Rwanda, <https://www.petroleumafrika.com/oil-exploration-to-begin-in-rwanda/>, On 14 August 2020.

<sup>35</sup> Petroleum policy, (Policy no. 85/2013 of 11/9/2013) Regulating Petroleum and Petroleum products trade in Rwanda.

<sup>36</sup> Petroleum Act, (Act n°13/2016 of 02/05/2016) Governing Petroleum Exploration and Production activities in Rwanda.

In the survey conducted by the Ministry of Public Services and Labor in Rwanda, in 2012 reveals an increase in the number of occupational injuries and fatalities from various sectors in the country.<sup>37</sup>

It was in this report from the survey conducted that the country had to adopt a ministerial order on occupational Health and safety in accordance with ILO C 187 - on promotional framework for occupational safety and health convention, so as to protect the health of workers within the various sectors.<sup>38</sup>

From the oil and gas sector, there was the adoption of the upstream exploration and production law of 2016. Its adoption was indeed timely, however, the law did not address or cater for issues of occupational Health and Safety as per the international standards and principles within the upstream oil and gas sector. The inadequate legislation in Rwanda's upstream sector has for this matter necessitated sector operators to consult other laws and policies in place like the labor laws, the various Ministerial orders, in order to cover the gap.

This can, however, lead to confusion among various stakeholders and industry players which most of them might practice a 'plug and abandon' (P&A) due to fear of huge risks and losses in the future since the sector has not covered for the health and safety of its workers. This mainly could be the oil companies since they suffer most of the risks resulting from the sector activities.

It is believed that Vanoil, a Canadian company cancelled its deal for exploration of oil within lake kivu in Rwanda which had commenced in 2010. Their reason put forward was that the international oil company (IOC) failed to meet the expectations to the oil exploration.<sup>39</sup> However, other sector operators claim the risks in the contract might have been bigger than the contract and the host country was not ready to meet them leading to a plug and abandon of the oil exploration in lake kivu -Rwanda.

In an interview with Nizere Irene, a senior Engineer working with Gas Meth in Rwanda, a private company involved in exploration of gas within lake kivu, he says the issue of occupational Health and safety is a big concern to the sector. He adds that

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<sup>37</sup>Government of Rwanda(Gov), 'Report on occupational Health and safety(OHS) in Rwanda: Ministry of Public Services and Labor', 4, [https://mifotra.gov.rw/uploads/media/OSH\\_POLICY-FINAL.pdf](https://mifotra.gov.rw/uploads/media/OSH_POLICY-FINAL.pdf), On 14 August 2020.

<sup>38</sup>Government of Rwanda(Gov), 'Report on occupational Health and safety(OHS) in Rwanda: Ministry of Public Services and Labor', 1, [https://mifotra.gov.rw/uploads/media/OSH\\_POLICY-FINAL.pdf](https://mifotra.gov.rw/uploads/media/OSH_POLICY-FINAL.pdf), On 14 August 2020.

<sup>39</sup>Government, vanoil oil prospecting deal cancelled, (2010), <https://www.newtimes.co.rw/section/read/72539>, On 14 August 2020.

the reason why so many practitioners are not advocating for it is because the sector is new, and having no/or less expertise to advise.<sup>40</sup>

He further points out that unclear occupational Health and Safety policies within the sector have necessitated private companies engaged in exploration to negotiate and pay a fee to the local communities as a compensation fee to cover for any hazards and risks that might develop during exploration. For the workers working within the sector, it would also be a challenge to initiate a litigation within the sector since there are no mechanisms for protection with the law.<sup>41</sup>

He however, notes, that there have not been serious issues since the sector is still at its nascent stages of exploration. He emphasises that due to the nature of the sector, going forward, there needs to be adequate policies protecting occupational Health and safety since the law is silent within the sector.

The issue of occupational Health and safety concerns within the upstream sector can be addressed in Rwanda by relying on the various literature review studies as identified, and adopting the practices of other successful countries within the sector like Norway, United Kingdom, Texas and others in order to prevent future risks imminent within the sector.

#### **1.9.4 Conclusion**

The inevitable risks within the upstream oil and gas sector always have a negative impact on the health and safety of the workers. The need to have an occupational health and safety framework is of necessity so as to minimize the imminent risks.

The assumption for inadequate policies in Rwanda's upstream sector to regulate the activities of exploration and production (E&P) is relatively due to limited financial capacity, Lack of expertise in the sector, limited public awareness of the sector's dangers towards the workers, issues of Transparency and accountability, etc.

The various studies conducted within the sector indicate that health and safety measures are crucial in the sector. It is crystal clear that the sector's concerns can be managed once the government legislates, regulates, and monitors compliance of the activities within this sector.

This could be done through making reforms within the existing Occupational Health and safety law in order to cater for the upstream unique concerns. This would be a means of

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<sup>40</sup> Interview with Nizere I, on 24 June, 2020.

<sup>41</sup> Interview with Nizere I, on 24 June, 2020.

mitigation through having a safety management system in place to monitor the activities of the sector, Clauses of insurance should be well elaborated within the employment contracts for enforceability in cases of breach, and also Transparency and accountability should have a strong force in cases of negligence and lack of commitment towards the international oil companies ('IOC') and governments.

This argument corresponds with some known principles like the precautionary principle, preventional principle, indemnification principle, and others where governments and international oil companies should take all measures so as to mitigate or minimize the occupational health and safety related risks within the sector.

The governments have a role to protect their citizens through having effective policies governing the concerns, while international oil companies have the role to respect the human rights of the workers.



## **1.9.5 Chapter Breakdown**

### **Chapter 1: Introduction to the Study**

The proposal was chapter one of the Thesis. The aims of the study were expounded within Five(5) distinct chapters. The current chapter was the introductory chapter which elaborated on the background of the problem, Statement of the problem, Justification of the study, hypothesis, research questions, literature review, Methodological approach, and finally the chapter layout.

### **Chapter 2: An Overview of the Theoretical Framework**

Chapter two of the study identified new Key concepts relevant to the research. Chapter two is where the study discussed oil and gas as a natural resource recognized under international law with possible best practice standards, the various occupational health and safety risks imminent within the sector, and various historical events within the sector.

The Theories under pinned to Occupational Health and Safety within the upstream oil and gas analyzed were: ‘ABCs’ Theory of Safety’ and the ‘Utilitarian Theory’. These theories explicitly addressed the need for nations to legislate Occupational Health and Safety frameworks within the oil and gas sector.

Many successful oil and gas countries have stood with the said theories and constantly made them part of the sector. As clearly elaborated in chapter four, countries under this study will be Norway, Angola and UK. The study indicated how the various countries put into consideration the ‘ABCs’ Theory and the ‘Utilitarian Theory’ as best industry practice towards the smooth operations and its sustainability.

### **Chapter 3: Occupational Health and Safety(‘OHS’): Rwanda’s Practical Experience in the Upstream Oil and Gas Sector**

This chapter ventured into Rwanda’s upstream sector, and how the workers within the industry have treated the issues of health and safety. The research made an analysis towards the legal framework within Rwanda’s upstream sector, the challenges, and recommendations towards the domestication of health and safety concerns.

The research further examined the issue of occupational health and safety at the international level (International outlook), and identified the common practice for the sector. This provided

an insight on how Rwanda can best adopt through best practice standards. This was further elaborated and solutions provided under chapter four of the research paper.

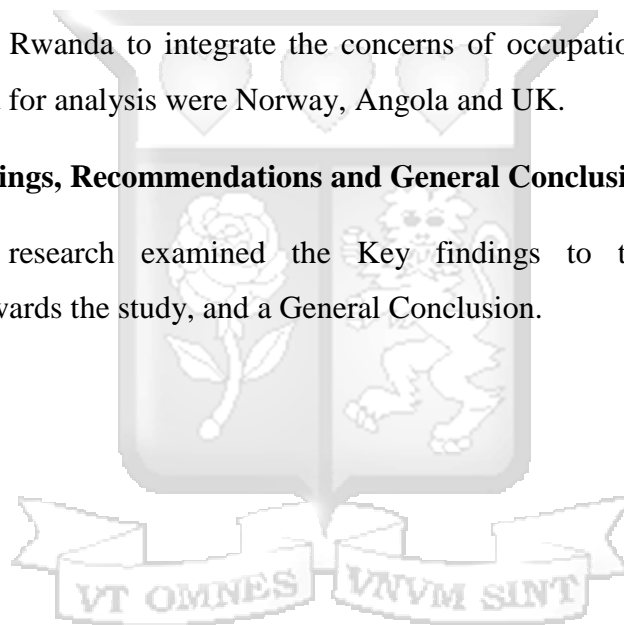
Lastly, the study discussed the various challenges that hindered the enactment of an occupational Health and safety framework within the sector for possible recommendations as per the next chapter, which is chapter four of this research paper.

#### **Chapter 4: Benchmarking with Best Upstream Practices: Case Studies of Norway , Angola and United Kingdom(UK)**

This chapter introduced the methodology adopted for this research, identified mechanisms adopted by upstream oil and gas jurisdictions in implementing a successful occupational health and safety framework. The lessons from these countries are recommendations for possible transplant to Rwanda to integrate the concerns of occupational health and safety. The countries selected for analysis were Norway, Angola and UK.

#### **Chapter 5: Key Findings, Recommendations and General Conclusion of the Study**

Chapter 5 of the research examined the Key findings to the research, various Recommendations towards the study, and a General Conclusion.



## CHAPTER 2 : OVERVIEW OF THEORETICAL FRAMEWORK

### 2.1 Introduction

Chapter I of the study provided a general introduction to the research, outlining the statement of the research problems and research questions that the study aims to answer. This chapter is unique from the previous. It introduces new key concepts, principles, and a theoretical framework to this thesis. Chapter two is where the study discusses oil and gas as a natural resource recognized under international law with possible best practice standards.

The theories under pinned to Occupational Health and Safety within the oil and gas sector to be analyzed were: ‘ABCs’ Theory of Safety’ and the ‘Utilitarian Theory’. These theories explicitly address the need for nations to legislate Occupational Health and Safety frameworks within the oil and gas sector.

This chapter responds to research questions 1, where it seeks to determine whether the upstream laws of Rwanda have catered for occupational health and safety concerns within the sector.

### 2.2 Oil and Gas as a Natural Resource: Towards its Regulation

Natural resources are said to exist on planet earth and are independent of human actions.<sup>42</sup> They are usually ‘categorized into minerals, energy resources like soil resources, water resources, and biological resources’.<sup>43</sup> The Ministry of Environment (MoE) is the coordinating institution of the Environment and Natural Resources sector in Rwanda, formerly Natural Resources of Rwanda (MINIRENA).<sup>44</sup>

The Environmental Protection Act, Organic Law No.04/2005 of 08/04/2005 determining the modalities of protection, conservation, and promotion of environment in Rwanda defines the soil and subsoil to constitute natural resources of the country.<sup>45</sup> The subsoil is the soil lying beneath the surface soil.<sup>46</sup> The origin of hydrocarbons generation is the natural result of the

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<sup>42</sup>Introduction to Natural Resource Economics, <https://courses.lumenlearning.com/boundless-economics/chapter/introduction-to-natural-resource-economics/>, Accessed on 12 March 2021.

<sup>43</sup>OECD, Glossary of Statistical Terms, December 2005, <https://stats.oecd.org/glossary/detail.asp?ID=1740>, Accessed on 12 May 2021.

<sup>44</sup>Adaption Fund, Ministry of Environment (MoE), <https://www.adaptation-fund.org/ie/ministry-of-natural-resources-minirena/>, Accessed on 12 March 2021.

<sup>45</sup>Article 11, Environmental Act of Rwanda (Organic Law No.04/2005 of 08/04/2005)

<sup>46</sup>Subsoil, <https://www.wordnik.com/words/subsoil>, Accessed on 12 March 2021.

maturation of buried organic matter.<sup>47</sup> The organic matter form from resources is a fact check expressed by Okonkwo's literature, who evaluates that:

Natural resources as extracted from the ground or soil can only be modified by man for his benefit and use. They include fossil fuels, coal, oil, natural gas, gold, copper, iron, diamonds, and minerals.<sup>48</sup>

The extraction of the minerals is done through geology where heavy machinery and other equipment are used to extract the resource. This explains the need for safety mechanisms for the workers through the use of personal protective equipment for workers and the use of the best available technology.<sup>49</sup> This will prevent injuries and promote safe working conditions from anthropocentric activities within the sector.

The oil industry activities should be regulated to curb employee risks. The concept of ownership over natural resources and the principle of permanent sovereignty through the charter of the United Nations (UN) places a mandate towards host states to exploit their resource according to policies in place.<sup>50</sup> From international best practice standards, this emphasis is not an option but rather compulsory.

The 'Universal Declaration of Human Rights'(UDHR)1948 has it on record that the responsibility to protect human rights has primarily fallen onto governments.<sup>51</sup> There has been an urge to legislate adequate policies, laws, and enforcement measures to prevent companies from violating human rights. An example of such rights is the right to life and health, among others.

As such, though not binding, the United Nations (UN) framework on business and human rights principles by Prof. John Ruggi also places responsibility on multinationals to protect the right to life of their workers and of the residents of any country where they do business.<sup>52</sup>

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<sup>47</sup>Hydrocarbon Origins and Occurrences, [http://www-odp.tamu.edu/publications/tnotes/tn30/tn30\\_2.htm](http://www-odp.tamu.edu/publications/tnotes/tn30/tn30_2.htm) , Accessed on 12 March, 2021.

<sup>48</sup>Okonkwo T, 'Ownership and control of natural resources under Nigerian Constitution 1999 and its implication for environmental law and practice' , *International Law Research* Vol 6, No. 1 Canadian Centre for Science and Education (2017), 1

<sup>49</sup>Extraction of Resources, <https://courses.lumenlearning.com/wmopen-geology/chapter/outcome-extraction-methods/> , Accessed on 12 March 2021.

<sup>50</sup>Mwangoma LV, 'Local content implementation strategy for Kenya's Oil & Gas industry: An evaluation of sections 50, 51 and 52 of the Petroleum Act, 2019: Concept of Ownership of Natural Resources' , Unpublished LLM Thesis, Strathmore University Nairobi, June 2019, 17.

<sup>51</sup>UN Human rights, '10 Human rights Priorities for the Extractives sector: Labor risks, Published by BSR.

<sup>52</sup>Damilola OS, *The principles of Nigerian Environmental law: Loss of life and wrongful deaths*, Business perspectives, Nigeria, 2015, 185.

The UN Guiding Principles require companies to undertake due diligence and identify negative human rights impacts even when governments are failing to create or enforce the necessary laws. The ‘Corporate Social Responsibility’ (CSR) towards companies not only respects workers’ rights but places ‘socially accountability –towards companies, stakeholders and the public’.<sup>53</sup>

‘The concept is not new and has been evident since the days of the industrial revolution towards reframing issues that have a legal face. Forexample, work place health and safety, human rights, etc’...<sup>54</sup>

The advocacy corresponds to the ‘Principle of Prevention’ to anticipate and prevent potential negative impacts arising from sector activities. Lack of certainty cannot be a defense under the ‘Precautionary Principle’ for host states and oil companies due to serious and irreversible health and safety concerns. As if to contribute ‘practice’ to the principles, Damilola described the necessity in the instance of Nigeria succinctly thus:<sup>55</sup>

The activities of the sector cause health risks. For example, many residences working in the Niger Delta have complained of asthma, breathing difficulties and pain, throat irritation, chronic bronchitis...

The health concerns under international law are ‘substantive causes of action in toxic tort for exposure of dangerous substances and chemicals by oil companies’.<sup>56</sup> This has been held to be a violation of the right to health and life in the ‘*Piper Alpha disaster*’ case in the UK that led to the loss of lives and severe injuries due to the explosion of the oil platform.<sup>57</sup>

Part of the known causes of this disaster was the lack of a safety culture system. Lord Cullen's inquiry report recommendations were for companies to have a safety culture, emergency response evacuation plans, and so on. This can only be successful once clear policies and regulations are active and not just merely in the statutes.

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<sup>53</sup>Corporate Social Responsibility (CSR), <https://www.investopedia.com/terms/c/corp-social-responsibility.asp> , Accessed on 16 April 2020.

<sup>54</sup>Margaret HS, ‘Self Regulation, Corporate Social Responsibility and Business Case: Do they work in Achiving work place Equality and Safety?’, *Journal of Business Ethics*,(2010), 588.

<sup>55</sup>Damilola OS, *The principles of Nigerian Environmental law: Health risks*, Business perspectives, Nigeria, 2015, 183.

<sup>56</sup>Damilola OS, *The principles of Nigerian Environmental law: Health risks*, Business perspectives, Nigeria, 2015, 183.

<sup>57</sup>Piper Alpha: The Disaster in Detail, 06<sup>th</sup> July 2018, <https://www.thechemicalengineer.com/features/piper-alpha-the-disaster-in-detail/> ,Accessed on 31 March 2021.

The same has also been held in *Jonah Gbemre v Shell Petroleum Development Company of Nigeria Ltd and others*, where the federal high court held that gas flaring and oil spillage by a shell during exploration and production activities was a violation of the right of the dignity of humans. It is by law that humans are guaranteed the right to a clean and poison-free pollution surrounding.<sup>58</sup> This postulation was not entirely an innovation. The smelter case (*United States v Canada*) had recognized much earlier that:<sup>59</sup>

No State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein when the case is of serious consequence and the injury is established by clear and convincing evidence. The defendant (Canada) paid huge damages worth \$78,000 as compensation.

Against this backdrop, the regulation of occupational health and safety risks within the oil and gas sector towards employees cannot be clearer.

To achieve the ends to this chapter, the attributes above will be discussed through the introduction of Theories: The ‘ABC’s theory of safety Analysis’ and the ‘Utilitarian Theory’. For each theory, a discernible study will be made in addressing the sector's concerns as below:

### **2.3 ABC’s Theory of Safety**

The ABC’s Theory of Safety was defined by Ian Ackland a senior safety auditor with ‘NCS International’. He defined this theory by creating the letters of the Alphabet, A, B, and C. A represented Attitude, B represented Behavior, and C represented Commitment.<sup>60</sup> He demonstrates that it is from ‘attitude to behavior and commitment for having a successful implementation of any management system through characteristics of an organization and its staff’.<sup>61</sup>

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<sup>58</sup>Gbemre v Shell Petroleum Development Company and others, (2005) , <https://www.globalhealthrights.org/africa/gbemre-v-shell-petroleum-development-company-and-ors/> , Accessed on 29 March 2021.

<sup>59</sup>Trail Smelter Case, (*United States v Canada*), (1938), <https://www.informe.org/en/court-decision/trail-smelter-case-united-states-v-canada> , Accessed on 16 April 2021.

<sup>60</sup>Ian Ackland, *The ABC’s of Safety: It’s as easy as ABC*, 2013, <https://www.bsigroup.com/LocalFiles/EN-AU/AS%204801%20and%2018001%20Safety/Documents/The-ABCs-of-Safety-Management-Systems.pdf> , Accessed on 13 March 2021.

<sup>61</sup>Ian Ackland, *The ABC’s of Safety: It’s as easy as ABC*, 2013, <https://www.bsigroup.com/LocalFiles/EN-AU/AS%204801%20and%2018001%20Safety/Documents/The-ABCs-of-Safety-Management-Systems.pdf> , Accessed on 13 March 2021.

This emphasis was supported by Professor Andrew Hopkins who examines that ‘unsafe behavior is often merely the last link in a causal chain and not necessarily the most effective link to focus on, for prevention’.<sup>62</sup>

This explains the need for having a safe culture within organizations due to the unsafe behaviors of the employees working within the organizations. This as proposed by Ian should be conducted through audit behavior checklists for the promotion of health and safety, and also have a clear national framework with its objectives.<sup>63</sup> This indeed put in lime light Garry’s opinion that lack of health and safety rights amounts to unsafe working conditions exposed to workers, and advocates for regulations towards corporate violations.<sup>64</sup>

The ethical underpinning of this theory is the need for organizations to have policies governing occupational health and safety for a safety management system. ‘The ‘ABC’s Theory of safety acts as a root cause analysis tool used by investigators in determining the cause of a particular incident, how it happened and why it happened’.<sup>65</sup>

An example is the Deepwater Horizon offshore drilling rig which exploded in the Gulf of Mexico, in April 2010 killing about 11 workers. This incident is believed to have been the largest oil spill in drilling operations, where the oil flowed from the damaged Macondo well for over 87 days before it could be capped.<sup>66</sup>

This disastrous incident occurred just seven hours after a group of BP and Transocean VIPs had arrived for a routine management walk-around, with a focus on checking on

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<sup>62</sup>Andrew Hopkins, What are we to make of safe behavior programs?,<http://homepages.wmich.edu/~rantz/www/5100/hopkins%202006.pdf> , Accessed on 13 March 2021

<sup>63</sup>Ian Ackland, The ABC’s of Safety: It’s as easy as ABC, 2013, <https://www.bsigroup.com/LocalFiles/EN-AU/AS%204801%20and%2018001%20Safety/Documents/The-ABCs-of-Safety-Management-Systems.pdf> , Accessed on 13 March 2021.

<sup>64</sup>Gray GC, ‘The Regulation of corporate violations: Punishment, Compliance, and the Blurring of Responsibility’ *British Journal of Criminology*,(2006), 876.

<sup>65</sup>Leadership and worker involvement Toolkit: ‘ABC’ Analysis,<https://www.hse.gov.uk/construction/lwit/assets/downloads/abc-analysis.pdf> , Accessed on 23 February 2021.

<sup>66</sup>Deep water Horizon -BP Gulf of Mexico Oil Spill (2010), <https://www.epa.gov/enforcement/deepwater-horizon-bp-gulf-mexico-oil-spill#:~:text=On%20April%2020%2C%202010%2C%20the,of%20marine%20oil%20drilling%20operations.>, Accessed on 13 March 2021.

the safety systems.<sup>67</sup> The attempts were made to catch, contain, disperse, and stop the reservoir fluids from reaching the Gulf of Mexico.

Unfortunately, all of the plans and preparations for controlling, monitoring, and mitigating the blowout repeatedly failed or were ineffective. One major failure was the fact that there were no effective safeguards in place that would enable minimization or elimination.

The rationale behind ABC's Theory of safety is to have a safety management system backed up by adequate policies in place to combat the risks which could result from employee behavior. The risks inevitable within the upstream range from Operational, Geology, and Equipment. These emanate from employee activities such as oil spillages, Gas flaring, and Effluent discharge of which negatively impact the health and safety of the employees.

This theory has been in favor of other legal scholars and philosophers like John Austin. Austin's 'command theory' is a better match fit towards the 'ABCs' Theory of Safety', and attempted to formulate it by stating:<sup>68</sup>

...laws are man-made rules that define a type of command. These laws are issued by a supreme authority, or sovereign member of an independent political society, and should be backed up by credible threats of punishment...

Austin's emphasis was that subordinate judges have the power of making laws since the community has little control over those who make the laws by which its conduct must be governed. John Austin's interpretation was highly supported by Jeremy Bentham's idea that 'Judicial legislators legislate arbitrary, hence uncertain, and incoherent...'<sup>69</sup>

Analyzing the various scholars, the 'ABCs Theory of safety' brought into submission achieving community well-being'<sup>70</sup>

Austin's theory left an incredible impression albeit strongly judged for lack of a methodology.<sup>71</sup> An example is H.L.A Hart who stated that Austin's law is through commands and sanction and that he does not explain how laws originate.<sup>72</sup>

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<sup>67</sup>Ian Ackland, The ABC's of Safety: It's as easy as ABC, 2013, <https://www.bsigroup.com/LocalFiles/EN-AU/AS%204801%20and%2018001%20Safety/Documents/The-ABCs-of-Safety-Management-Systems.pdf> , Accessed on 13 March 2021.

<sup>68</sup>Aisha U-K Umaru, Austin's Sovereign: A true Legal Theory, 3, [https://www.researchgate.net/publication/339365818\\_Austin's\\_Sovereign\\_A\\_True\\_Legal\\_Theory](https://www.researchgate.net/publication/339365818_Austin's_Sovereign_A_True_Legal_Theory) , Accessed on 23 February 2021.

<sup>69</sup>Wayne M, *Jurisprudence: The Role of Judicial Law-Making*, 241-242.

<sup>70</sup>Bentham J, *Internet Encyclopedia of Philosophy: Law, Liberty and Government*, <https://iep.utm.edu/bentham/> Accessed on 23 February 2021.

The researcher opines to the ‘ABCs Theory of safety’, supported by Austin’s developed theory to respond to the third research question that seeks to determine whether occupational health and safety concerns need to be legislated to enable enforceability in Rwanda’s upstream sector.

This study is mirror research based on ‘ABC’s Theory of safety’. The behavior of employees and their work activities need to be regulated through clear policies set by host states to provide leeway for oil companies to develop occupational health and safety management systems that combat risks imminent towards employees within the sector.

The rationale for adopting an occupational health and safety framework is an international best practice. Failure to abide by the industry best practices calls for legal actions as discussed earlier towards states and oil companies.

An example is the recent *Urgenda Foundation v The Netherlands case*.<sup>73</sup> The citizens of the Netherlands lodged an action towards the federal courts for the failure of their government to regulate climate change side effects originating from the oil industry activities. The court compelled the Dutch government to reduce greenhouse emissions to protect its citizens from climate change effects which is a cause of health issues.

## 2.4 Utilitarian Theory

Utilitarianism is an ethical theory that determines right from wrong by focusing on outcomes.<sup>74</sup> This theory asserts that the rightness of an act depends entirely on the maximization of overall wellbeing.<sup>75</sup> ‘This theory ascribes to a form of consequentialism, that is, the consequence produced will determine the right action’.<sup>76</sup> One of the core significance of the utilitarian theory is Maximization. Jeremy Bentham in ‘*An Introduction to the Principles of Morals and Legislation*,<sup>77</sup> made his statement as below:<sup>78</sup>

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<sup>71</sup>Stanford Encyclopedia of Philosophy: Austin’s views, <https://plato.stanford.edu/entries/austin-john/> Accessed on 23 February 2021.

<sup>72</sup>Wayne M, Jurisprudence: *The Role of Judicial Law-Making*, 355-356.

<sup>73</sup>Urgenda Foundation v The State of Netherlands <https://elaw.org/nl/urgenda.15>, Accessed on 28 April 2021.

<sup>74</sup>Utilitarianism, <https://ethicsunwrapped.utexas.edu/glossary/utilitarianism>, Accessed on 14 March 2021.

<sup>75</sup>Eggleston B, *Utilitarianism Encyclopedia of Applied Ethics*, Second Edition, (2012), Vol. 4, 452-458.

<sup>76</sup>Stanford Encyclopedia of Philosophy, <http://plato.stanford.edu/en/Ties/ulitarianism-history/> Accessed on 20 January 2016.

<sup>77</sup>Bums HJ, *Happiness and Utility: Jeremy Bentham's Equation*, Cambridge University Press Vol. 17, No. 1, (2005), 48.

...By the principle of utility is that principle which approves or disapproves of every action whatsoever according to the tendency which it appears to have to augment or diminish the happiness of the party whose interest is in question...

The Cambridge dictionary of philosophy upholds the Utilitarian theory and attempts to define it as such:<sup>79</sup>

...an act is morally right if and only if it produces at least as much good (utility) for all people affected by the action as any alternative action the person could do instead. One who does not think of the happiness of others, cannot expect to get any happiness from others...

Jeremy Bentham further invoked what he described as a 'fundamental axiom' of the greatest good for the greatest number', a statement that is frequently associated with this theory.<sup>80</sup> Additionally, actions that are right in proportion tend to promote happiness which is the presence of intended pleasure and the absence of pain.<sup>81</sup>

Although constantly criticized for his rejection of natural law and subjective values, his profound thoughts on law reform and social welfare provided a directive to the lawmakers on the welfare of society.<sup>82</sup>

The Utilitarian theory is a relevant tool for addressing the health and safety concerns of the workers within the upstream sector. The theory is a correlation to the 'ABCs theory of safety' towards sector employee behavior. As rightly put by Jeremy Bentham, regulation of sector concerns is a skillful legislator tool for controlling and directing social behavior of the international oil companies.<sup>83</sup>

## **2.5 Concept of Occupational Health and Safety: What is OHS?**

The Cambridge Advanced Learner's Dictionary defines "welfare" as 'well-being'.<sup>84</sup> Health and Safety are strictly aspects of employee welfare.

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<sup>78</sup> Bums HJ, *Happiness and Utility: Jeremy Bentham's Equation*, Cambridge University Press Vol. 17, No. 1, (2005), 48.

<sup>79</sup> Bums HJ, *Happiness and Utility: Jeremy Bentham's Equation*, Cambridge University Press Vol. 17, No. 1, (2005), 48.

<sup>80</sup> Bums H.J, *Happiness and Utility: Jeremy Bentham's Equation*, 46.

<sup>81</sup> Mill S.J, *Utilitarianism*, Batoche Books, 2001, 12.

<sup>82</sup> Freeman M, *Introduction to Jurisprudence Ninth Edition*, Thomson Reuters, 2014, 197.

<sup>83</sup> Wayne M, *Jurisprudence-From the Greeks to post-modernism:Utility proposed as the Fundamental Principle for a new science of Morality*, Cavendish Publishing Limited, 187.

<sup>84</sup> Cambridge Learners' Dictionary.

Agnes ascribes to the definition of the International Labor Organization (ILO) and the World Health Organization (WHO) towards the promotion and maintenance of the highest degree of physical, mental, and wellness of workers in all occupations.<sup>85</sup>

The definition was a clear-cut of MacEachen and Kosyn for organizations to set up occupational health and safety (OHS) legislations and enforcement mechanisms to prevent workplace injuries and illness.<sup>86</sup>

I am opined to Na'ankwat Lami and Nwagbaraocha's opinion towards strengthening of sector regulations of occupational health and safety (OHS). 'The failure would result in more court cases, punitive damages, and compensation pay-outs due to non-compliance.'<sup>87</sup>

Damilola further demonstrates in his literature how an aggrieved neighboring state can bring an action before the International Court of Justice (ICJ) under the court's jurisdiction in Article 36(c) for violation or breach of international obligations...<sup>88</sup>

Simply put, it is paramount for host-states and oil companies to have in place safety measures towards operations of the sector. For example, before any exploration and production (E&P) commences, the company must avail a risk assessment conducted from comprehensive due diligence (occupational health and safety) which identifies, evaluates, and proposes mitigation measures.

This requirement should be presented before contracts are signed off. There should be a waste treatment and disposal plan, decommissioning plan, flaring to be done upon authorization of relevant government agencies responsible for occupational health and safety within the sector and a remedy avenue in case of violation of the aforementioned. These preventive measures should be clear towards implementation and not just on paper.

For example, the Republic of Kenya implemented a national risk management program to conduct a chemical risk analysis through its material safety data sheet

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<sup>85</sup>Agnes- N A, 'Management of occupational Health and safety in selected organizations of the south west region of Cameroon', Unpublished Thesis, Pan African Institute for Development West Africa, 2015, 27.

<sup>86</sup>MacEachen E, Kosny A, 'Systematic review of qualitative literature on occupational health and safety legislations and regulatory enforcement planning and implementation', *Norwegian National Institute of occupational health and the Scandinavian Journal of work*, (2016), 3.

<sup>87</sup>Na'ankwat -Lami D, 'Health, Safety & Environmental implications in Nigeria's oil & Gas Industry: Trends in occupational Health and Safety', Unpublished PHD Thesis, Nelson Mandela Metropolitan University, October 2012, 37, <http://www.masterbuilders.co.za/resources/docs/OHS-PDFs/Final%20HSE%20Implications%20040613%20in%20Nigerias%20Oil%20and%20Gas%20Industry%20PhD%20Constr%20Man%20Thesis.pdf>, Accessed on 12 April, 2021.

<sup>88</sup>Damilola OS, *The principles of Nigerian Environmental law: Loss of life and wrongful deaths*, 2ed, Business perspectives, Nigeria, 2015, 186.

(MSDS). In the Republic of Zambia, the Occupational Health Safety Bill (OHS) introduced requirements of the Health & Safety committees, and for the employees.<sup>89</sup>

## 2.6 Understanding Risk in the Upstream Sector

### 2.6.1 Introduction

Risk within the oil and gas industry implies future uncertainties about deviations from expected earnings or expected outcomes. Globally, the health and safety risks suffered by employees in the sector are on the increasing path. These risks carry an economic cost too, which has often raised the question; *who establishes IOC's rights to explore and Exploit the hydrocarbon resources?* Given the risky nature of oil and gas upstream operations, the need to have a legal framework should be a key priority to the sector.

The host states play a role through regulations, legislations, and adjudication of the sector's concerns. This can be done by establishing a clear legal framework that would mitigate employee risks in the sector. If it's lacking, the stability would as well be questionable in regards to the economic life of the project.

The oil and gas sector accounted for nine (9) activities that resulted in loss among the top most 20 incidents in 2013. This positioned oil and gas as one of the non-catastrophe top losses in 2013 accounting for about \$ 3.2 billion and 40 percent of the top 20 total losses and one of the largest insured losses on the 2014 list.

The oil and gas sector (energy) had the highest average value of claims of €20.8 million and it cuts across the energy line of business.<sup>90</sup>

This, therefore, explains the need for developing policies by host states and ensuring they are adhered to by oil companies. This however is still a challenge as government regulatory bodies lack the skills and manpower.

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<sup>89</sup>Na'ankwat -Lami D, 'Health, Safety & Environmental implications in Nigeria's oil & Gas Industry: Trends in occupational Health and Safety', Unpublished PHD Thesis, Nelson Mandela Metropolitan University, October 2012, 37-38, <http://www.masterbuilders.co.za/resources/docs/OHS-PDFs/Final%20HSE%20Implications%20040613%20in%20Nigerias%20Oil%20and%20Gas%20Industry%20PhD%20Constr%20Man%20Thesis.pdf>, Accessed on 12 April, 2021.

<sup>90</sup>Bigliani R, 'Reducing risk in oil and gas operations' IDC Energy Insights; Allianz, 'Global Claim Review, 2014: Loss trends and emerging risks for global businesses', Allianz Global Corporate and Specialty Business Scope (2014).

Melbas illustrates an example of Kenya where the Directorate of Safety and Health services has 71 professional officers to inspect about 140,000 workplaces.

This is a challenge for inspectors working in remote areas where oil exploration is taking place. They can take two to three years before they visit, leaving most workers exposed to hazards.<sup>91</sup>

## **2.6.2 Upstream Occupational Health and Safety Risks and the Role of Regulations**

This sub-section of the study expounds on the Occupational Health and Safety risks faced by the workers in the upstream sector to determine the benefits of legislation to minimize the sector's risks.

The concept of establishing a legal framework in the formulation is, however often attributed to Martin. Martin spread constructive intellectual moments towards the study. He identified various risks faced by employees within the sector ranging from Operational, Equipment and, Geology.<sup>92</sup>

These risks pose threats to worker's well-being unless policies for mitigation are clear and well-established. The inadequacy of occupational health and safety risk policies is a discrepancy to the 'ABCs Theory of safety' and 'Utilitarian Theory'.

In order to achieve the ends of this research, it is paramount to briefly analyze the potential occupational health and safety risks directed towards workers within the upstream sector as below:

### **a) Operational related –risks**

The operational risks are those risks that negatively affect workers within the sector resulting from explosions or leaks during the operations. An example of the operational risk is the

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<sup>91</sup>Melba Wassuna K, 'what Kenya needs to do to better protect those working in the oil sector', 2018, <https://theconversation.com/what-kenya-needs-to-do-to-better-protect-those-working-in-the-oil-sector-103845> , Accessed on 30 March 2021.

<sup>92</sup>Muhoro M, 'An Evaluation of the Legal & Institutional Framework Governing Insurance of Upstream Petroleum Operations: A case study of Ghana', Unpublished LLM Thesis, Strathmore University Nairobi, 2019, 41.

famous Deepwater Horizon Oil spill disaster that happened in Mexico, where various explosions occurred followed by a huge fire.<sup>93</sup>

The consequence of the explosion caused injuries, accidents, and death of the workers at the Macondo well. This, therefore, explains the need to regulate the risks which affect the workers negatively. A report research conducted by the Lincoln institute of Land Policy advocates for legislations to be enacted so as to safeguard against risks towards health and damage which include spill prevention, reporting, etc...<sup>94</sup>

In the famous Ogoni v Nigeria case, the government of Nigeria had been directly involved in irresponsible oil development practices within the Ogoni region which was a violation of the Right to Health of the ngoni people as confirmed by the African Commission on Human and People's Rights.<sup>95</sup> The activities of the oil company included Gas flaring and oil spillage which negatively affected the health of employees and the general community. The failure by the Nigerian government and oil companies to protect the people's rights was contrary to international best practices..



As many might state, part of the reasons for failure to effectively address the operational risks by sector operators is due to capital intensive to employ safety mechanisms in the sector, lack of regular training due to lack of expertise within the sector, and overall weak or no occupational health and safety regulations in place to direct sector operations.



For example in the Republic of Kenya, there is a key concern of how waste and pollution will be managed. This includes; the disposal of drill cuttings

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<sup>93</sup>Deep water Horizon –BP Gulf of Mexico Oil Spill(2010), <https://www.epa.gov/enforcement/deepwater-horizon-bp-gulf-mexico-oil-spill#:~:text=On%20April%2020%2C%202010%2C%20the,of%20marine%20oil%20drilling%20operations>, Accessed on 19 April 2021.

<sup>94</sup>Patrick Field TK, *Approaches to local Regulation of Shale Gas Development: Overview of the Regulatory Framework Governing Oil and Natural Gas Development*, Lincoln Institute of Lan Policy, 2013, 19.

<sup>95</sup><https://www.business-humanrights.org/en/latest-news/decision-of-the-african-commission-on-human-and-peoples-rights-on-communication-15596-submitted-by-the-social-and-economic-rights-action-center-and-the-center-for-economic-and-social-rights-case-concerning-the-ogoni-people-in-nigeria/> , Accessed on 04 March 2021.

reduced air quality due to the flaring of gas which negatively affects both workers and the community at large.<sup>96</sup>

There is also a general requirement that contractors be prepared in case of an emergency –like fire. There is however no direction of who is responsible for what and the procedures that must be followed. Kenya’s National Oil Spill Contingency Plan is meant to make this clearer, but it has been in drafts for over four years now.<sup>97</sup>

The inadequacy to curb the risks carries significant financial, legal, and reputational risks to corporations. There is therefore a strong business case in terms of costs, reputation, and effectiveness in managing the sector’s risks. Such risks may manifest in the form of disruption of the project, suspension or closures of projects by supervising bodies, director and shareholder liability, etc. This may impact the company’s profitability to maintain the license to operate too.

The operational risks within the sector are inevitable. However, oil companies can reduce or shift this risk through engaging in regular employment and training practices, behavioral-based safety programs, carrying out due diligence before the commencement of operations, following international best practices in place, ensuring there is a monitoring and compliance regime, employing working schedule management systems and ensuring government regulations and enforcement mechanisms are active.

Towards governments, failure to legislate occupational health and safety concerns is against the principle of ‘Pacta Sunt Servanda’ where treaties are binding under public international law.<sup>98</sup> In case a state fails to commit, it can easily be sanctioned. This can be done through expelling a country from the committee of nations or either economically sanctioned. This is an international principle that says all agreements must be kept, thus binding and enforceable.

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<sup>96</sup>Melba Wassuna K, ‘what Kenya needs to do to better protect those working in the oil sector’, 2018, <https://theconversation.com/what-kenya-needs-to-do-to-better-protect-those-working-in-the-oil-sector-103845> , Accessed on 30 March 2021.

<sup>97</sup>Melba Wassuna K, ‘what Kenya needs to do to better protect those working in the oil sector’, 2018, <https://theconversation.com/what-kenya-needs-to-do-to-better-protect-those-working-in-the-oil-sector-103845> , Accessed on 30 March 2021.

<sup>98</sup>Anthony A, ‘Pacta Sunt Servanda’, <https://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e1449> , Accessed on 19 April 2020.

## **b) Equipment – related risks**

The equipment-related risks cannot be underscored about risk in the industry. These risks often attract high premiums due to the sophisticated machinery and equipment used during operations. Examples of such machines include pumping equipment machines, Tight Electric Pumps, Trunk oil pumps, etc.<sup>99</sup>

The equipment employed might get defects and malfunction at times, which creates hazards to the operating personnel within the sector. The poor maintenance of the machinery is also a root cause of blowouts and break down which is a violation of international principles of prevention and precautionary within the sector.

The good governance approach for companies to embark on the use of the best available technology could be known and not practiced. The reason for this would be short-term thinking of profits and gains and not focusing on the big picture of the workers' health as benefit but cost.

The equipment-related risks can be mitigated by the industry Operators by employing up-to-date technologies and equipment to reduce or mitigate preventable risks that might be exposed to the workers.<sup>100</sup> This is often referred to as the best available technology in host states. 'In the BBC News of 19 August 2018, improvement in technology usage has slightly reduced the death toll'.<sup>101</sup>

Allianz demonstrates that the adoption of up-to-date equipment certified by the regulators of operations in the oil and gas industry enhances competitiveness and conformity with global best practices. The machinery breakdown risk accounted for six percent (6%) by value and 14 percent by several claims globally in 2013.<sup>102</sup>

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<sup>99</sup>Oil and Gas industry Equipment's, <http://www.aem-group.ru/static/images/buklety/GNH-eng.pdf> , Accessed on 14 March 2021.

<sup>100</sup>Bigliani R, 'Reducing risk in oil and gas operations' IDC Energy Insights: Ernest and Young: Fraud risk management; oil and gas sector'.

<sup>101</sup>History of deadly Earthquakes, <https://www.bbc.com/news/world-12717980> , Accessed on 30 March 2021.

<sup>102</sup>Allianz, 'Global Claim Review, 2014: Loss trends and emerging risks for global businesses'.

### c) Geology related -risks

The geological risk is the main risk to ever having employment within the upstream sector. This risk affects workers once any discoveries are made towards commencement. Geology includes making seismic surveys to drill the hydrocarbons in the targeted locations.<sup>103</sup>

This activity is associated with landslides, volcanic eruptions where the project is located, and all of which may hurt workers' safety.<sup>104</sup> This activity requires carrying out a proper assessment of the likely hazards associated with Geology to incorporate mitigating measures early in the planning phase before commencement.

The oil companies can mitigate or reduce the adverse effects of this risk by carrying out studies and surveys before exploration. For example through seismic surveys, basin analysis, etc. The other mitigation mechanism is through incorporating fiscal terms within contracts before signing between governments and oil companies to reduce the risk of Geology towards the employees.

In the twentieth century, it is believed that more than a million people worldwide lost lives through geologic earthquakes.<sup>105</sup> More examples of destruction have been recorded in Latin America during the period 1985-1987, in the earthquakes in Ecuador, and Mexico.<sup>106</sup>

#### 2.6.3 Conclusion

From the analysis made, major employee risks are Operational, Equipment, and Geological Risks within the upstream sector. These risks are inevitable. However, the most reason for the cause of these risks is due to poor technology employed by oil companies, lack of political will, lack of clarity within contract signed, regulatory overlap, corruption, capital intensiveness of the industry, and many more.

The issue of the identified risks can be mitigated by having in place clear and robust occupational health and safety policies. For example the methodologies for regulating the risk of fires, accident emergency evacuation plan, monitoring and reporting systems, etc. These

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<sup>103</sup>Seismic Method, <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/seismic-method> , Accessed on 14 March 2021.

<sup>104</sup>Geologic Hazards, <http://www.oas.org/dsd/publications/unit/oea66e/ch11.htm> , Accessed on 14 March 2021.

<sup>105</sup>History of deadly Earthquakes, <https://www.bbc.com/news/world-12717980> , Accessed on 30 March, 2021.

<sup>106</sup>Over view of Geologic Hazards and the Development planning process, <http://www.oas.org/dsd/publications/unit/oea66e/ch11.htm> , Accessed on 14 March 2021.

policies can be created by the relevant ministries in charge, which is usually the Ministry of Petroleum and Mining in most countries.

Melba Wassuna demonstrates that policies in place must additionally have a clear division of roles and responsibilities, ensuring the sector is an efficient and encouraging investment.<sup>107</sup>

#### **2.6.4 A focus on Past Upstream Oil and Gas Sector's Disasters**

The activities of the sector will always have an impact on the health and safety of its employees. This, therefore, calls for regulations that govern these activities during operations. The following have been landmark disasters within the upstream sector. These catastrophes have varied from activities of the sector ranging from oil spills, gas flaring, Effluent discharge, and more which have harmed the employees of the sector.

These disasters have caused fatalities, accidents, fires, pollution, death, etc, which have negatively impacted employee health and safety generally. This section will discuss two major disasters that have had a historical event within the upstream sector. This is the Alpha Piper Disaster that happened in Aberdeen oil platform in the UK and the Deep water Horizon Oil spill (offshore) in the Gulf of Mexico.

##### **a) Deep Water Horizon Oil Spill**

In April 2010, there was a controlled flow of water, oil mud, gas, and other materials which came out of the drilling riser of positioned drilling vessel named Deepwater Horizon. It was owned by Transocean and had been contracted by BP to drill the Macondo well, northern Gulf of Mexico offshore the coast of Louisiana.<sup>108</sup>

During the time of the accident, Deep water Horizon (DWH) crew had finished drilling and was completing temporary abandonment of the well so that a production facility could return later to extract oil and gas from the well.<sup>109</sup>

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<sup>107</sup>Melba Wassuna K, 'what Kenya needs to do to better protect those working in the oil sector' 2018, <https://theconversation.com/what-kenya-needs-to-do-to-better-protect-those-working-in-the-oil-sector-103845> , Accessed on 30 March, 2021.

<sup>108</sup>DHSG,' Final Report on the Investigation of the Macondo Well Blowout, Center for Catastrophic Risk Management (CCRM) (2010) 6, <http://large.stanford.edu/courses/2011/ph240/mina1/docs/DHSGFinalReport-March2011-tag.pdf> , Accessed on 12 April, 2021.

<sup>109</sup>US Chemical Safety and Hazard Investigation Board 'Macondo-Specific Incident events: Relevant Background on deepwater drilling and temporary abandonment,' Investigation Report Volume 1. (20 14)

Subsequently, various explosions occurred and a huge fire followed persistently for two days. During the next 83 days, attempts were made to catch, contain, disperse, and stop the reservoir fluids from reaching the Gulf of Mexico. Unfortunately, all of the plans and preparations for controlling, monitoring, and mitigating the blowout repeatedly failed or were ineffective.<sup>110</sup>

Huge amounts of toxic fluids and gases from the Macondo well escaped into the open waters of the Gulf of Mexico. This disaster resulted in unprecedented occurrences in the history of offshore oil and gas.<sup>111</sup>

One major failure was the fact that there were no effective safeguards in place that would enable minimization or elimination. The barriers that had been intended to prevent such a disaster had not been tested or properly maintained.<sup>112</sup>

The consequence of this fatality was various critical injuries with the Deepwater Horizon rig sinking on April 22, 2010.

#### **b) Piper Alpha Disaster ( UK)**

The Piper Alpha was an oil production platform in the North Sea of Aberdeen in the UK. The oil platform was operated by Occidental Petroleum Limited. The production of petroleum began in 1976, and the disaster happened on the 06<sup>th</sup> July, 1988.<sup>113</sup>

The explosion resulting from oil and gas fires destroyed the platform, killing 167 people. Additionally, the total insured loss was about \$3.4 billion. According to Lord Cullen's inquiry into the Alpha Piper Disaster, the greatest issue was safety maintenance from the oil company. Part of the recommendations of the injury report was for the UK to encourage regulations and enforcement of workplace health, safety, and welfare of the workers.<sup>114</sup>

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<sup>110</sup>DHSG, ' Final Report on the Investigation of the Macondo Well Blowout' Center for Catastrophic Risk 8.

<sup>111</sup>DHSG, ' Final Report on the Investigation of the Macondo Well Blowout' Centre for Catastrophic Risk 8.

<sup>112</sup>US Chemical Safety and Hazard Investigation Board 'Macondo-Specific Incident Events: Relevant Background on Deepwater drilling and temporary abandonment', Investigation Report Volume 1.(2014) 8.

<sup>113</sup> Piper Alpha Disaster(1988), <https://www.maritime-executive.com/article/july-6-1988-the-piper-alpha-disaster> , Accessed on 14 March 2021.

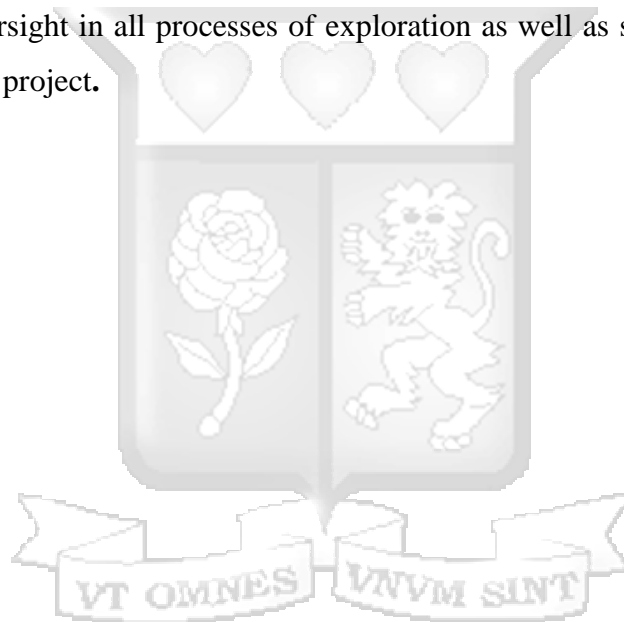
<sup>114</sup>Piper Alpha Disaster( 1988), <https://www.maritime-executive.com/article/july-6-1988-the-piper-alpha-disaster> , Accessed on 14 March 2021.

This disaster is a reflection of ABC's theory of safety for governments to have regulations on the health and safety of the workers. Failure to abide by these recommendations as provided within the report explains the leading disasters towards workers.

### **2.6.5 Conclusion**

In conclusion, the cause of disasters is lack of controlling, monitoring, and mitigating measures for preventing sector blowouts. This leads to injuries, permanent disabilities, and death of the employees working in the sector, which does not reflect the ABC's and Utilitarian Theories as elaborated in chapter two.

This research posits that to avert such risks towards employees, there must be in place a proper regulatory oversight in all processes of exploration as well as standard guidelines for all stakeholders in the project.



## **CHAPTER 3 : OCCUPATIONAL HEALTH AND SAFETY ('OHS'): RWANDA'S EXPERIENCE IN THE UPSTREAM OIL AND GAS SECTOR**

### **3.1 Introduction**

The previous chapter hinted with an overall evidence of past upstream disasters likely to affect employees working within the upstream sector are invariably faced with risks or disasters that affect their health and safety. These disasters vary as the Piper Alpha disaster, Deep water Horizon in Mexico, etc that have affected employee health and safety. The disasters are as a result of Operational, Geological, and Equipment related risks.

The risks are said to emanate from sector activities that lack following policies and guidelines towards mitigation. The use of outdated heavy machinery in the sector cause oil spillages, gas flaring, etc. directed by workers which affect their health and safety. The consequences are injuries, work-related accidents, permanent disabilities, health issues, etc, which is against the Theories of ABC's and Utilitarian as discussed in the previous chapter.

Chapter three analyzes Rwanda's practical experience within the upstream sector, reflecting on the qualitative methodology adopted in chapter one. The analysis is majorly focused on basis of the interview made than practical evidences since Rwanda's sector is still in its nascent stages of production and exploration without tangible results.

The chapter additionally, examines the international perspective on occupational health and safety framework which gives extensive obligation for domestication of OHS Rwanda's upstream sector.

### **3.2 The Concept of Occupational Health and Safety at the International Level**

Occupational health and safety concerns are hazards that range from work accidents, permanent disability, etc. that often result in death as a result of the sector's operations. The risks could result in a high economic cost too. The risks are a result of Operational, Equipment, and Geological risks performed by employees of the sector.

Occupational health and safety have been advocated for throughout the world, explaining the cause for the International Labor Conference of June 2013 for nations to implement policies and laws to safeguard sector-related activities.<sup>115</sup>

According to Juan, the attempt to discover how occupational health and safety framework could fair- well in the diverse sectors was a pinpoint to nations once a preventive approach and safety culture was adopted.<sup>116</sup> The rationale was towards achieving lasting improvements in safety and health concerns within the sectors.

The upstream oil and gas sector is a unique venture which involves the exploration and production (E&P) of hydrocarbons. Public awareness of the sector issues is majorly concentrated towards the environment and local communities' worries. This is a great move. However, paying less or no attention to 'occupational health and safety' risks towards the workers strikes an imbalance within a sector carrying out multimillion-dollar project investments.

The International Labor Organization (ILO) illustrates that a record of over 2 million workers die each year from work-related accidents and diseases, and the figure is on the increase globally.<sup>117</sup>

The ILO established a promotional framework in the area of occupational health and safety through its convention (No.187). To many, this convention created a breakthrough for workers to be protected by nations from various hazards of their work stations.<sup>118</sup>

This is an accredited good governance approach which means that domestic laws of countries would reflect the international best practices through employee public participation, establishing a comprehensive legal and accountability framework, plus institutional systems that are necessary to achieve sound regulatory outcomes.

The litmus test for good governance in the oil and gas context is whether the legal and institutional framework achieves the goals of addressing occupational health and safety concerns within the upstream sector.

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<sup>115</sup>International Labour Standards on Occupational Safety and Health, <https://www.ilo.org/global/standards/subjects-covered-by-international-labour-standards/occupational-safety-and-health/lang--en/index.htm> , Accessed on 31 March 2021.

<sup>116</sup>Juan S, 'Global Strategy on occupational Health and Safety', International Labor organization, 5.

<sup>117</sup>Juan S, 'Global Strategy on occupational Health and Safety: Conclusions concerning ILO standards related activities in the area of occupational health and safety –A global strategy', 1.

<sup>118</sup>Juan S, 'Global Strategy on occupational Health and Safety', International Labor organization, 4.

The idea of mirroring occupational health and safety is a prevailing fashion of the brainchild of the international community. Juan demonstrates that the international appetite for institutions at the national level for an increased general awareness of the worker's risks in the upstream sector calls for commitment for effective implementation of national OHS systems'.<sup>119</sup>

Besides the International Labor Organization (ILO) in addressing issues of occupational health and safety in its broad sense, this research will also briefly review other international tools that have addressed emerging issues of operations within the oil and gas sector as below:

**ii. International Convention on Oil Pollution Preparedness, Response, and Cooperation (OPRC)**

This was a conference of leading industrial nations called in Paris in 1989 to develop measures for preventing pollution from ships.<sup>120</sup> The convention required parties to establish measures for dealing with pollution at national levels or in co-operation with other countries.<sup>121</sup>

Eduard demonstrates the relevance of the convention towards upstream operations for nations as an obligation to have oil pollution emergency plans in place coordinated with national systems to respond promptly and effectively to oil pollution incidents.<sup>122</sup>

**iii. Prevention of Major Industrial Accidents Convention, 1993(No.174) with its Ratification in 1996**

This convention was examined by the committee on International Labor Organization (ILO) with recommendations on how governments can respond to the calling of this convention. It required governments to provide 'safety passports' by including provisions of assessment of risks, organizational measures like Training of personnel, provisions of safety equipment to

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<sup>119</sup>Juan S, 'Global Strategy on occupational Health and Safety: Conclusions concerning ILO standards related activities in the area of occupational health and safety –A global strategy', 2.

<sup>120</sup>The Role of International Maritime Organization in Preventing the Pollution of the world's oceans from ships and shipping, <https://www.un.org/en/chronicle/article/role-international-maritime-organization-preventing-pollution-worlds-oceans-ships-and-shipping> , Accessed on 31 March, 2021.

<sup>121</sup>International Convention on oil Pollution Preparedness, Response and Co-operation(OPRC), [https://www.imo.org/en/About/Conventions/Pages/International-Convention-on-Oil-Pollution-Preparedness.-Response-and-Co-operation-\(OPRC\).aspx](https://www.imo.org/en/About/Conventions/Pages/International-Convention-on-Oil-Pollution-Preparedness.-Response-and-Co-operation-(OPRC).aspx) , Accessed on 22 February, 2021.

<sup>122</sup>Eduardo G P, *The Encyclopedia of Upstream Oil and Gas Law*, 254.

ensure worker's safety, responsibilities, and controls on sites of installations, Emergency plans, and procedures.<sup>123</sup>

**ii. The Safety and Health in Mines Convention, 1995( No.176)**

According to the report from the Labor Portfolio committee, the safety and health in mines convention, (No.176) came into force in 1995 resulting from the conference of the International Labor Organization( ILO) which focused on the precautionary measures to be taken about the health and safety of mineworkers.<sup>124</sup>

This was through establishing comprehensive minimum standards to protect the miners as the nature of the work is hazardous and risky. Part of the measures included inspections, special working devices, and special protective equipment of workers.<sup>125</sup>

The ratification of this convention was optional. This explains why at the end of 2015, 31 nations had ratified the convention. Countries like Australia, Botswana, Brazil, Norway, etc. have ratified the convention. Rwanda however, is not part of the countries that have ratified this convention. This could be an assumption to many for Rwanda's inadequate occupational health and safety framework in the sector.<sup>126</sup>

### **3.3 Conclusion**

The employees within the upstream sector are exposed to various risks. These risks are often a result of the sector activities such as Gas flaring, Effluent discharge, oil spillage, etc which result from various risks as explained in chapter two of this study. All these therefore negatively affects the health and safety of employees within the sector.

The consequences suffered by workers within the sector called for international bodies to regulate the sector activities as a way of mitigating the inevitable risks. Part of the

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<sup>123</sup>C174 –Prevention of Major industrial Accidents Convention, 1993( No.174), [http://www.oit.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100\\_INSTRUMENT\\_ID:312319:NO](http://www.oit.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312319:NO) , Accessed on 22 February 2021.

<sup>124</sup>Parliamentary Monitoring Group, Convention No.176 concerning safety and Health in mines, Labor Portfolio Meeting, Report, November 1999, <https://pmg.org.za/committee-meeting/3899/> Accessed on 08 March 2021.

<sup>125</sup>International Labor Organizations: International labor Standards on occupational Safety and Health, <https://www.ilo.org/global/standards/subjects-covered-by-international-labour-standards/occupational-safety-and-health/lang--en/index.htm> , Accessed on 08 March 2021.

<sup>126</sup>[https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11210:0::NO::P11210\\_COUNTRY\\_ID:103460](https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11210:0::NO::P11210_COUNTRY_ID:103460) , Accessed on 31 March, 2021.

international tools that came into force were international convention on oil pollution preparedness, Response & cooperation( OPRC), Prevention of major industrial Accidents Convention 1993( No.174) with its ratification in 1996, the safety & Health in mines convention, 1995( No.176), etc.

The countries that ratified the conventions were bound to establish effective national policies for safeguarding the risks imminent within the sector. Rwanda therefore, is a signatory to most of the international conventions which gives it an obligation to participate in the adoption and domestication of OHS sector concerns

### **3.4 Analyzing Rwanda’s Legal and Institutional Framework in Addressing Occupational Health and Safety Management in the Upstream Sector**

#### **3.4.1 Introduction**

Rwanda’s constitution of 2015 has received ‘enormous praise as a trail blazer among developing nations, especially in health progress.’<sup>127</sup> The constitution of Rwanda mentions good health where ‘All Rwandans have a right to good health’.<sup>128</sup>

Additionally, ‘the state must mobilize the population for activities aimed at good health and to assist in the realization of those activities’. And finally, ‘Every Rwandan has to take part in activities aimed at good health’.<sup>129</sup>

This calls upon the state to enact policies towards the promotion of the health of Rwandans in all sectors. The enactment of the policies through the mandated institutions will monitor the sector’s activities and its performance.

This is a critical tool for the enforcement of occupational health and safety management within the oil and gas sector. The exploration of the resource by sector players brews a lot of concern for adverse effects towards employees working in the upstream sector.

To effectively enforce the sector’s concerns, the institution in charge, ‘The Rwanda Mines, Petroleum and Gas Board’ (RMB) will need to adopt a robust policy framework within the upstream sector.

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<sup>127</sup>Binagwaho A, Richard F & Gabriella S , ‘The Persistence of colonial Laws: Why Rwanda is Ready to Remove outdated Legal Barriers to Health, Human rights and Development’ , *Harvard International Law Journal*, <https://harvardilj.org/2018/06/the-persistence-of-colonial-laws-why-rwanda-is-ready-to-remove-outdated-legal-barriers-to-health-human-rights-and-development/> , Accessed on 18 February, 2021.

<sup>128</sup>Article 21 Constitution of Rwanda(2015).

<sup>129</sup>Article 45 of the constitution of Rwanda(2015).

This section will assess the Rwandan legal framework on occupational health and safety management within the upstream sector; Key challenges faced in the implementation and finally draw possible recommendations.

It is important, however, that the researcher makes a review on how the concept of occupational health and safety stands at the international level. The analysis will give guidelines for Rwanda to adopt and incorporate the best-laid practices for a safe and healthy working sector.

### **3.4.2 Overview of Rwanda's Legal and Institutional Framework in the Upstream Sector**

The legal framework governing the upstream oil and gas sector is spread in various statutes; which are the Constitution of Rwanda (2015), the Upstream Petroleum Policy 2013( Draft-under review), and finally the Upstream Petroleum Exploration law (2016).

This section of the Thesis will therefore review the legal instruments in Rwanda's Upstream Sector, and the various institutions in place having the mandate within the sector towards investment.

#### ***a) The Constitution of Rwanda 2015***

The constitution of Rwanda prescribes ownership of land and other rights over resources to be granted by the state.<sup>130</sup> The constitution further articulates that there should be the promotion of activities aimed at good health.<sup>131</sup> These rights are summed up by a fact that all Rwandans have the right to good health,<sup>132</sup> which is driven by the Judiciary as the guardian towards their protection.<sup>133</sup>

The constitution has a focus on the need for sustainability of the resources. It is therefore right to state that sustainability cannot exist unless there is the protection of workers in the sector.

The constitution as the supreme law of the land, calls on Rwandan Upstream oil and gas sector to protect the health and safety of its employees. This as earlier discussed is a good governance approach both at the international and domestic level.

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<sup>130</sup>Article 35 Constitution of Rwanda(2015)

<sup>131</sup>Article 45 Constitution of Rwanda(2015)

<sup>132</sup>Article 21 Constitution of Rwanda (2015)

<sup>133</sup>Article 45 Constitution of Rwanda(2015)

b) *Upstream Petroleum Policy 2013, (Draft-under review)*

The upstream policy (2013) draft points out Rwanda's lack for policies for the regulation of occupational health and safety risks within the upstream sector. The policy among other items addresses key concerns including worker's risks imminent within the sector which calls for regulations.

The draft policy has however spent nine (9) years under judicial reform in Rwanda. This might then raise the question of 'enforceability' under Rwandan courts since the upstream sector is unique to its issues. Secondly, transparency and accountability could also be questionable.

The policy in as much as it recognizes the need for health and safety of workers; has still not provided for mitigation measures and penalties for breach of the sector standards. 'This imposes vague legal duties even as all operators in the sector are required to take urgent measures following international standards through stopping oil spillages, gas flaring, use of best available technology, providing emergency evacuation systems as a form of safety, and others'.<sup>134</sup>

The same was part of the Lord. Cullen's inquiry report recommendations into the Piper Alpha Disaster in the UK in 1988 for operators to always check on the safety of installations, Training of inspectors, the applicability of the fire-fighting systems, etc.<sup>135</sup>

c) *Rwanda Petroleum Act, (2016)*

The Petroleum Act came into force in 2016 in the official Gazette no.21 of 23/05/2016, to govern Petroleum Exploration and Production Activities. The Petroleum Act in regulating the activities of the upstream sector mentions the need to have the prior authorization of the Minister in charge in case of gas flaring.<sup>136</sup>

This is provided for by the law Governing Petroleum Exploration and Production Activities, which explains conditions under which gas flaring should be done.<sup>137</sup> This is a great move

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<sup>134</sup>Olusola J, Olabode A. , et al., 'Oil spillages in Nigeria's Upstream Petroleum Sector; Beyond the legal framework', *International Journal of Energy Economics & Policy*, (2018), 223.

<sup>135</sup>Hon. Lord Cullen, 'Public inquiry into the Piper Alpha Disaster', London, 248-249, <https://www.hse.gov.uk/offshore/piper-alpha-public-inquiry-volume1.pdf> , Accessed on 09 March 2021

<sup>136</sup>Article 31, (Law No13/2016 of 02/05/2016) Governing Petroleum Exploration & Production Activities.

<sup>137</sup> Article 31, (Law No13/2016 of 02/05/2016 )Governing Petroleum Exploration & Production Activities

because it addresses the concerns of health and safety within the sector. However, it has generalized the concern. That is:<sup>138</sup>

Section 31: Flaring natural gas

- a) *Securing the safety and health of persons engaged in petroleum exploration activities.*
- b) *Avoiding damage or destruction over any property belonging to any person in the petroleum exploration or production area.*

The section talks about activities that deal with gas flaring which impact the health of persons. This sounds more implicit since the act addresses only activities of gas flaring, and does not account for other activities like *oil spillage*, and *effluent discharge*. All of these are operational risks within the sector practiced by the oil companies.

Secondly, measures for mitigation like sending off associated gas to refineries, compelling punishments towards cleaning up the affected areas which might negatively impact the health of employees was never thought of by the legislators. This creates an issue of transparency and accountability as sector players might question whose role it is to regulate these concerns.

The laws are relatively behind the times and do not mirror modern trends geared at mitigating the sector concerns that affect workers in the upstream sector.

There are evident gaps in terms of clarity of provisions within the existing sector laws. There is, therefore, a need for clear policies that address the concerns of the sector employees. For example, an ‘**Occupational Health and Safety Act**’ addressing occupational health and safety issues such as rigging safety, flaring of gas, Geology activities, or chemical handling in the upstream oil and gas sector.

In the future, clear policies should be implemented by the institution with the mandate - Rwanda Mines, Petroleum and Gas Board (RMB) in collaboration with other relevant ministries –like Natural resources Authority (RNRA), and Rwanda Social Security Board (RSSB).

Since the sector is still in its nascent stage and the awake to have effective policies is in drafts, the general Occupational Health and Safety law in Rwanda, **Law No.009/2021 of 16/02/2021, Establishing Rwanda Social Security Board** could act as a saver instrument by

incorporating the unique emerging concerns of occupational health and safety of employees within the sector.<sup>139</sup>

This will respond to research question 2 relating to enforceability and accountability of activities performed by oil companies which bring about risks that negatively affect upstream sector employees. (Emphasis mine)

### **3.4.3 Institutional Framework**

#### ***a) Rwanda Development Board (RDB)***

Rwanda development board is mandated with tracking economic development in the country by enabling private sector growth. This is through addressing the needs of large, small, and medium-sized enterprises, which are local and foreign.

For example, the recent US-based company, (Gas Meth Energy) was granted a license to explore and exploit Rwanda's Gas resource from Lake Kivu and signed over US\$ 400 million to extract and process methane gas.<sup>140</sup>

#### ***b) The Rwanda Mines, Petroleum and Gas Board (RMB)***

The Rwanda Mines, Petroleum and Gas Board is an institution that was established in 2017 responsible for implementing and advising the government on issues related to national policies, laws, and strategies related to mines, petroleum, and gas.<sup>141</sup>

The Ministry is in charge of monitoring, research, exploration, and mining. The institution also collaborates with other regional and international institutions carrying out similar operations within the sectors.

### **3.4.4 Key Challenges in the Domestication of (“OHS”) Risks in Rwanda’s Upstream Sector**

The Government of Rwanda (“GOR”) has and is still making efforts to adhere to the requirements for occupational health and safety (OHS) in the upstream sector as a prerequisite in observing international standards.

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<sup>139</sup>(Law No.009/2021 of 16/02/2021), establishing Rwanda Social Security Board

<sup>140</sup><https://rdb.rw/rwanda-signs-over-usd-400million-deal-with-gasmeth-energy-to-extract-and-process-methane-gas-from-lake-kivu/> , Accessed on 21 February 2021.

<sup>141</sup>Rwanda Mines, Petroleum and Gas Board(RMB), <https://www.rmb.gov.rw/index.php?id=23> , Accessed on 22 February 2021.

This has been done through the Petroleum Act (2016), the Petroleum Policy Act (Draft-2013), and other related laws. Rwanda's upstream sector is, however, still far from maximizing occupational health and safety risks within its sector as per the analysis of this research.

The practice currently in Rwanda is that other similar laws are referred to, whilst forgetting that the sector is independent and has got its unique concerns. This might as well cause forth and back hitches among industry operators and other stakeholders within the industry. The inadequacy of clear and effective policies relating to occupational health and safety of employees is attributed to various factors which shall be discussed in detail as below:

**a) Lack of Expertise and Training within the Sector**

The lack of technical manpower to underwrite risks towards employees is a great challenge in Rwanda's upstream sector. There is a lack of expertise to train and address the sector's concerns and how the risks can be mitigated.

The previous analysis of this research has indeed presented a huge legal risk within the sector towards occupational health and safety policies to address the issues pertinent to workers.

The inadequacy of occupational health and safety policies to regulate activities of the sector is a ticking bomb that needs to be addressed as soon as possible. The core reason for the domestication of occupational health and safety concerns is to attract investment and enhance the sustainability of the sector.

Georgina Enzer's study report of 2013 sponsored by BP and conducted by the Society of Petroleum Engineers; found that 53% of those surveyed would consider jumping to another employer due to lack of training and development opportunities. Seventy-five percent said training and development factored heavily into their choice of employment. The survey also found 25% believed lack of training hurt their careers.<sup>142</sup>

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<sup>142</sup>Georgina E., 'Oil and gas is facing a severe talent shortage', <https://www.oilandgasmiddleeast.com/article-12091-oil-gas-is-facing-a-severe-talent-shortage>, Accessed on 09 March 2021.

## **b) Financial Constraints**

Peter D and Michael C demonstrated that the oil and gas industry is an exclusively capital-intensive sector.<sup>143</sup> By this, they meant that the sector requires a strong financial muscle to hire experts from foreign jurisdictions to come and advise on the emerging oil and gas issues within the sector. Rwanda is a developing country, and the sector being new is still a challenge in addressing various requirements crucial to the sector.

This has therefore slowed capacity-building within the sector, where most of the sector concerns would be addressed for better performance.

## **a) Weak Institutional Capacity**

It is important to ensure synergy between the Rwanda Mines, Petroleum and Gas Board (RMB) with the Rwanda Social Security Board to regulate concerns of occupational health and safety within the oil and gas business sector.

Rwanda Social Security Board could act as a saver tool by incorporating the unique emerging concerns of occupational health and safety of workers within its general Act.<sup>144</sup> This will respond to questions of enforceability and accountability of activities that bring about risks within the upstream sector.

Mark C and others demonstrate that the Act would be quite effective in addressing concerns of occupational health and safety, ranging from worker hazards and mitigation mechanisms. The presence in terms of implementation and regulation of this institution has been felt.<sup>145</sup>

## **c) Corruption within the Mandated Institution**

There is a likely degree of corruption within the institution responsible for the implementation, monitoring, and maintenance of upstream-related activities. This creates issues of transparency and accountability, which in most cases has left the gaps unattended.

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<sup>143</sup>Peter D, Cameroon & Michael CS, 'Oil, Gas & Mining', world Bank Group, (2017), <https://openknowledge.worldbank.org/bitstream/handle/10986/26130/9780821396582.pdf?sequence=2&isAllowed=y> , Accessed on 09 March 2021.

<sup>144</sup>(Law No.009/2021 of 16/02/2021), establishing Rwanda Social Security Board

<sup>145</sup>Mark C, Hults, David R, Heller, et al., 'Exporting the Norwegian model: The effect of administrative design on oil sector performance', <https://ideas.repec.org/a/eee/enepol/v39y2011i9p5366-5378.html> , Accessed on 26 February 2021.

The issue of corruption has been witnessed in various African oil countries such as Nigeria, Ghana, Venezuela, etc. In Nigeria, Rachel Boynton, in her movie “**Big Men**” filmed issues of corruption amongst Nigerian politicians.<sup>146</sup> This has a great negative impact on nations that end up suffering the ‘**Resource Curse**’ syndrome due to economic underperformance.

The view of economic underperformance resulting from the ‘Resource Curse’ is popular among scholars like Yolanda T and Vincent, who affirm that ‘the development of natural resources has failed to improve and sustain a good living for citizens of nations due to some political offices who tend to waste the resources and benefits’.<sup>147</sup> Until there is sufficient evidence towards the lack of this evil within Rwanda’s upstream sector, the assumption remains.

### **3.4.5 Conclusion**

Part of the concern in Rwanda is the lack of effective policies to minimize employee inevitable risks within the upstream sector. The identified challenges are due to weak institutional capacity, lack of expertise and technology, corruption, etc.

Rwanda’s legal regime towards occupational health and safety concerns within the upstream sector has created a lacuna towards enforceability, transparency, and accountability within the sector. This research paper is meant to be an eye-opener for a holistic review of the existing legal framework with an emphasis to minimize or carter for the existing occupational health and safety concerns imminent within the upstream sector.

To succeed, it will require a strong political will and increased commitment across all levels of sector institutions to enhance sector best practices and will promote sector sustainability. This will also curb ‘Resource Curse’ issues within an oil and gas emerging Rwanda.

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<sup>146</sup>Big Men, ‘American Documentary’, <https://www.amdoc.org/watch/bigmen/>, Accessed on 22 February 2021.

<sup>147</sup>Yolanda T, Chekera & Vincent O, et al., ‘The international Law Principles of Permanent Sovereignty over Natural Resources as an Instrument for Development: The Case of Zimbabwean Diamonds’, *African Journal of Legal studies*, (2013).

## **CHAPTER 4 : BENCHMARKING WITH BEST GLOBAL PRACTICES: COMPARATIVE STUDIES OF NORWAY, ANGOLA , AND THE UK**

### **4.1 Introduction**

Exploration and production (E&P) of Oil and Gas within the upstream sector has its unique regulations ranging from fiscal, legal, and contractual. These regulations not only control, also directly manage the sector activities, like Gas flaring, Oil spillages, Effluent wastage, and so many others that could threaten the health and safety of the workers within the sector.

The Extractives Hub demonstrates that petroleum sector projects are complex, high-risk investments and therefore require a carefully drafted regulatory framework for sustainable economic development.<sup>148</sup>

The above analysis explains why most oil states have regulated petroleum activities through developing robust policies within their oil and gas sector.

This chapter analyses the legal framework governing petroleum exploration in Norway, Texas, and UK's upstream sectors. The study will venture into the various typical approaches adopted by the selected jurisdictions in designing their legal framework to regulate the upstream occupational health and safety risks.

These include the comprehensive or highly detailed approach, resilience or individually legislated contracts or agreements, and finally the hybrid approach. From the best approach, the study will be able to answer research question three regarding the methodology adopted for a possible transplant to Rwanda's upstream oil and gas sector in responding to occupational health and safety concerns.

Before attempting to determine which approach is used by what jurisdiction, the study will discuss first the petroleum regulations in each jurisdiction, highlighting concerns of the study. The study will then demonstrate how occupational health and safety is regulated within each country, and finally determine the country with the best regulatory regime within the upstream sector and the approach it has adopted.

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<sup>148</sup>Extractives Hub: Petroleum Legislation and Regulations, <https://www.extractiveshub.org/servefile/getFile/id/4223> , Accessed on 11 March 2021.

## 4.2 History of Petroleum in Norway

‘Exploration and Production (E&P) in Norway has established high levels of competence’.<sup>149</sup> Hunter illustrates how Norway took time to develop its petroleum industry since it had to first comply with international best practice standards.<sup>150</sup>

In the survey report of 2005 conducted by the World Bank, Norway in the fifty (50) years since the discovery of petroleum has earned praises for its reserves and management which originated from the 10 “Oil Commandments” of 1971.<sup>151</sup>

The “10 Oil commandments” pointed out that petroleum policy must be comprehensive for national management and control of the resources to benefit the Norwegian society.<sup>152</sup>

Hunter discusses how Norway’s position earned its trust for investment because of its robust petroleum policies that catered to the sector’s concerns.<sup>153</sup>

This has earned Norway the acquired rights for exploration of the resource within the continental shelf. For example countries like Norway, UK, and Denmark from the analysis explain the reasons for the created boundaries to regulate their resources as pointed out by Meld.<sup>154</sup>

The next sub-section will discuss the Petroleum Safety Authority in Norway and its roles within the Norwegian petroleum sector.

## 4.3 Petroleum Safety Authority, Norway

The Petroleum Safety Authority (PSA) of Norway regulates and governs the safety of the Norwegian oil and gas industry. Barten illustrates that the Authority is responsible for technical and operational safety.<sup>155</sup>

Thurber demonstrates that the Petroleum Safety Authority has distinct bodies for the management of its petroleum. The National oil company (NOC) deals with

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<sup>149</sup><https://www.norskoljeoggass.no/en/Publica!Guidelines> Accessed on 24 February 2021.

<sup>150</sup>Hunter T, 'Review of the Australian Upstream Petroleum Sector: Australian Productivity Position', (2009), 6.

<sup>151</sup>OECD, Economic Survey: Norway (2005), 11.

<sup>152</sup>An industry for the future-Norway’s petroleum activities,

[https://www.regjeringen.no/globalassets/upload/oed/petroleumsmeldingen\\_2011/oversettelse/chapter1\\_whte\\_paper\\_28-2010-2011.pdf](https://www.regjeringen.no/globalassets/upload/oed/petroleumsmeldingen_2011/oversettelse/chapter1_whte_paper_28-2010-2011.pdf) , Accessed on 11 March 2021.

<sup>153</sup>Hunter T, 'Review of the Australian Upstream Petroleum Sector: Australian Productivity Position', (2009), 6.

<sup>154</sup>Meld S, 'An industry for the future-Norway's petroleum activities: Norwegian Ministry of Petroleum and Energy (2010-2011), 5.

<sup>155</sup>Barten M O, 'Facts 2013: The Norwegian Petroleum Sector, Ministry of Petroleum and Energy', (2013), 16.

commercial hydrocarbons operations, there is a ministry that sets and directs policy, and finally a regulatory body for technical expertise and oversight.<sup>156</sup>

Honorable Orla, the minister in charge of Petroleum and Energy explains that the previous distinction has helped Norway lay a foundation for petroleum resources that will foresee the future.<sup>157</sup> He deduces towards a clear and prerequisite framework for good decisions to be made by oil companies.<sup>158</sup>

Part of the clear framework is policies concerning health and safety requirements. The section on Health and Safety is enshrined in chapter 9 of the ‘Petroleum Safety Policy’ which requires all activities of the sector to be conducted in a manner that enables a high level of safety following technological development.<sup>159</sup> Section 9-2 deals with emergency preparedness where it states:<sup>160</sup>

...participants in the petroleum activities shall at all times maintain efficient emergency preparedness to deal with accidents and emergencies which may lead to loss of lives or personal injuries, pollution, or major property damage...

Towards achieving the purpose for the Policy, the Norwegian Government also set up a workgroup to review and monitor the industry’s safety situations offshore. Part of the team includes the ‘Petroleum Safety Authority’ and the ‘Norwegian Petroleum Directorate’.<sup>161</sup>

Many would agree with the researcher that the Norwegian Petroleum Safety Authority by emphasizing regulations of safety was towards mitigating occupational health and safety concerns within the sector. This is an adequate justification for this study for having an occupational health and safety framework within the sector to cater for the sector’s imminent risks. This corresponds to ABC’s theory in chapter two, where the country has fairly catered for health and safety concerns.

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<sup>156</sup>Thurber M, Hults D, and Heller P, ‘The Limits of Institutional Design in Oil Sector Governance: Exporting the Norwegian Model’, JSA Annual Convention (2010), 4.

<sup>157</sup>Borten M O, ‘Facts 2013: The Norwegian Petroleum Sector, Ministry of Petroleum and Energy’, (2013), 5.

<sup>158</sup>Borten M O, Facts 2013: The Norwegian Petroleum Sector, Ministry of Petroleum and Energy’, (2013), 14.

<sup>159</sup>Chapter 9: (Special requirements to safety), Norwegian Petroleum Directorate

<sup>160</sup> Section 9-2: Emergency Preparedness, Norwegian Petroleum Directorate

<sup>161</sup>Norway reviewing Safety in oil and gas operations, <https://www.offshore-energy.biz/norway-reviewing-safety-in-oil-and-gas-operations>, Accessed on 25 February 2021.

#### a) Health Concerns

- The issue of industrial hygiene monitoring has been addressed through carrying out a baseline industrial hygiene survey for all activities. This helps determine any work place hazards.
- The industry carries out a mandatory medical check every year or before resuming work from an accident.
- There are regular monitoring and controlling workplace conditions, ie noise, heat and other negative health circumstances.
- The use of personal protective equipments in the sector is highly encouraged.

#### b) Safety Concerns

- The human injuries and accidents within the sector are managed through setting up safety barriers on the hazardous parts of the processes.
- There is high restriction of access into hazardous areas for unnecessary or unauthorized workers
- There are trainings and supervision of the workforce
- The workers are highly also encouraged to use personal protective equipment as a mitigation factor towards the sector risks that are imminent.
- The logout tagout programs are also practiced within the sector
- And lastly, the sector exercises the safety instrumented systems

#### 4.4 Conclusion

Norway has been ranked today as one of the world leaders in the oil industry for having a legal framework to address Health and Safety risks on its shores.<sup>162</sup> This has enabled the sustainability of the sector and also minimized imminent risks towards employees.

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<sup>162</sup>Nimo -Chebet K, 'The National Environmental Management Authority's capacity to Manage & control the potential Environmental Impact of the Emerging oil & Gas sector', Unpublished Thesis, Strathmore Law School, March, 2016, 30.

Norway's sector achievement has attracted attention for other jurisdictions to regulate their sectors too.<sup>163</sup> It could be stated that it's good news because many countries have adopted the Norwegian model, like Angola, Australia, South Africa, and others. This has managed to curb some of the sector's concerns, a great deal towards resource curse elimination.

## 4.5 United Kingdom (UK) Regime

### 4.6 Introduction

This sub-section focuses on the legal framework for the regulation of oil and gas exploration and production (E&P) in the UK's upstream sector. Just like other oil and gas producing countries, the criteria for enforcing a legal framework in the UK cannot be generalized. The section will discuss the British (UK) system, commonly known as the **Complex Hybrid Arrangement**.

To put this analysis in its proper context, we must briefly look into the British petroleum regulatory framework, as this is the model that shapes some other jurisdictions that have borrowed the structure. The framework covers both the legislative and contractual framework for upstream oil and gas activities as will be discussed and analyzed in the next sub-sections.

#### a) Overview of British Petroleum Regulatory Framework

The drilling for hydrocarbons in the upstream sector in Britain started between 1917 and 1920.<sup>164</sup> Douglas's research from the World Bank indicates that the 'licensing regime in the UK was triggered by the fuel demands of the First World War'.<sup>165</sup>

He further demonstrates that the first license on the onshore was issued in 1935, while the offshore begun in the 1960s in the North Sea.<sup>166</sup> This literature as supported by Joseph Morris's evidence indicates that:<sup>167</sup>

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<sup>163</sup>Mark C, David R, Patrick RP, et al., 'Exporting the Norwegian Model: The effects of administrative design on oil sector performance', 5366-5378.

<sup>164</sup><https://www.bp.com/en/global/corporate/who-we-are/our-history/early-history.html> Accessed on 3 March 2021.

<sup>165</sup>Douglas T, Mailula, 'Protection of Petroleum Resources in Africa: A comparative Analysis of oil and Gas Laws of Selected African States', Unpublished PHD Thesis, University of South Africa, November 2013, 173.

<sup>166</sup>Douglas T, Mailula, 'Protection of Petroleum Resources in Africa: A comparative Analysis of oil and Gas Laws of Selected African States', Unpublished PHD Thesis, University of South Africa, November 2013, 173.

As of August 1, 1967, 83 wells had been drilled on the continental shelf underlying the North Sea and sizeable Gas reserves had been discovered in the United Kingdom.

The principal law governing the development and production of hydrocarbons in the UK is the Petroleum (Production) Act, 1998, as amended.<sup>168</sup> 'Initially, Petroleum was regulated under the Petroleum (Production) Act, 1918, and then by the Petroleum (Production) Act, 1934, supplemented by the Continental Shelf Act of 1964'<sup>169</sup>

#### **b) Legislative Overview**

The Nobel Denton report of 2010 on safety regulatory regimes in the UK indicates that the safety regulator in the UK is the 'Health and Safety Executive' (HSE) established in 1974 as the executive arm of the Health and Safety Commission(HSC). The legislation in the UK is separate covering offshore, onshore, and pipeline facilities.<sup>170</sup>

Douglas's view relates to Dale's submissions that:<sup>171</sup>

...the most important criteria regarding administrative decisions whether to grant, renew or cancel rights is the degree to which administrative decision is circumscribed by reference to stipulated objective criteria. Some of these criteria are the normal objective ones relating to financial and technical resources and ability, optimality, work programs, environmental, health, and safety considerations...

In some countries like South Africa's model of licensing, the applicant cannot be granted a license to operate unless certain requirements of the law are met. The fulfillment of certain criteria might thus be difficult to many investors, as this might be rendered unfriendly.

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<sup>167</sup>Joseph W M, 'The North Sea Continental Shelf: Oil & Gas Legal Problems', American Bar Association, <https://www.jstor.org/stable/40704490?seq=1> , Accessed on 3 March 2021.

<sup>168</sup>Other legislation regulating petroleum operations, which are beyond the scope of this study, include the Petroleum and Submarine Pipelines Act 1975 (concerning the use and construction of submarine pipelines); the Oil and Gas (Enterprise) Act 1982; the Gas Act 1986 (concerning the supply of gas in Great Britain through pipes); the Petroleum Act 1987 (concerning the abandonment of offshore installations and pipelines on land); and the Mineral Workings (offshore Installations), Act 1971.

<sup>169</sup>Douglas T, Mailula, 'Protection of Petroleum Resources in Africa: A comparative Analysis of oil and Gas Laws of Selected African States', Unpublished PHD Thesis, University of South Africa, November 2013, 174.

<sup>170</sup>GL Nobel Denton Report: 'Review & comparison of Petroleum Safety Regulatory Regimes for the Commission for Energy Regulation', 2010, 7 <https://www.extractiveshub.org/servefile/getFile/id/1596> , Accessed on 3 March 20.

<sup>171</sup> Douglas T, Mailula, 'Protection of Petroleum Resources in Africa: A comparative Analysis of oil and Gas Laws of Selected African States', Unpublished PHD Thesis, University of South Africa, November 2013, 174.

However, the researcher cannot subscribe to such sentiments. The requirement for a nation to have a safety and health regime is that paramount. There should be a move to being liberal.

#### a) UK Petroleum Acts and Legislative Regulations

The Primary Acts in the UK that relate to health and safety for onshore sites, pipelines, and offshore installations include the health and safety at work act, 1974(HSWA) and the offshore Safety Act, 1974(HSWA).<sup>172</sup> The health and safety at work Act set up the general framework for safety legislation in the UK. In the UK, the employer must demonstrate that risk is as low as reasonably practicable.<sup>173</sup>

The two acts include provision for:<sup>174</sup>

- General requirements for the employer and employee to manage and work in a safe manner taking account of the hazards that may be found in the workplace
- The creation of the Health and Safety Commission and Executive (HSE) to monitor compliance with the HSWA and regulations (also known as Statutory Instruments) associated with it
- The HSE to issue approved codes of practice (ACOP) and guidance, with the consent of the Secretary of State
- The HSE to investigate an accident, occurrence, situation, or other matter.
- The concept of Inspectors
- Improvement Notices, where a specific improvement is required
- Prohibition Notices, where an operation has to be stopped until an improvement is made

#### 4.7 Conclusion

It is crucial to note that in the UK, occupational health and safety are regulated in all the three areas as earlier elaborated which include: health and safety for onshore sites, pipelines, and offshore installations. Mailula's research reviews demonstrates that the British regime has

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<sup>172</sup> GL Nobel Denton Report: 'Review & comparison of Petroleum Safety Regulatory Regimes for the Commission for Energy Regulation', 2010, 9 <https://www.extractiveshub.org/servefile/getFile/id/1596> , Accessed on 3 March 2021.

<sup>173</sup>GL Nobel Denton Report: 'Review & comparison of Petroleum Safety Regulatory Regimes for the Commission for Energy Regulation', 2010, 9 <https://www.extractiveshub.org/servefile/getFile/id/1596> , Accessed on 3 March 2021.

<sup>174</sup>GL Nobel Denton Report: 'Review & comparison of Petroleum Safety Regulatory Regimes for the Commission for Energy Regulation', 2010, 9 <https://www.extractiveshub.org/servefile/getFile/id/1596> , Accessed on 3 March 2021.

driven many other jurisdictions like Nigeria to integrate its system in managing their oil and gas sector concerns.<sup>175</sup> For example, on concerns of oil spills and remediation, Jennifer Schneider and others have demonstrated that the country has been already undertaken measures towards the recovery of hazardous waste.<sup>176</sup>

Additionally, the companies have also engaged in the coastal oil spill improvement program (COSPIP) and IPIECA West, Central and Southern Africa (WACAF) Global Initiative to develop strategies for oil spills prevention. These are all measures towards a sustainable and safe sector for the workers, which is an international best practice of the sector

#### **4.8 Oil and Gas Law in Angola: The Norwegian ‘Carried-Interest’ Model**

#### **4.9 Introduction**

The legal and regulatory framework for petroleum resources is a complex matrix involving a network of legislative frameworks, contractual arrangements, and fiscal systems. It determines the regime that is to be utilised in oil and gas producing states, in order to facilitate the optimal exploitation of these resources.<sup>177</sup> As Hunter indicates,

Petroleum regulatory framework is a suite of legislative and policy tools that a state utilises to regulate petroleum exploration and production. Specifically, the regulatory framework encompasses petroleum policy, petroleum legislation, the award of exploration and production licenses, the conditions for the award of petroleum licenses, and the government management of the extraction of petroleum.<sup>178</sup>

Hunter further explains that, the regulatory framework for petroleum exploitation encompasses legal instruments such as primary legislation, subordinate legislation, as well as

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<sup>175</sup>Douglas T, Mailula, ‘Protection of Petroleum Resources in Africa: A comparative Analysis of oil and Gas Laws of Selected African States’, Unpublished PHD Thesis, University of South Africa, November 2013, 225.

<sup>176</sup>Jennifer S, Salim G and others, ‘Towards Sustainability in the Oil and Gas Sector: Benchmarking of Environmental, Health and Safety Efforts’, *Journal of Environmental sustainability*, (2013), 106, <https://scholarworks.rit.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1028&context=jes>, Accessed on 17 June 2021.

<sup>177</sup>East African Community and International Monetary Fund Workshop: Fiscal Management of Oil and Natural Gas in East Africa, Arusha –Tanzania, 2014, <https://www.imf.org/external/np/seminars/eng/2014/eac/pdf/031514.pdf>, Accessed on 13 September 2021.

<sup>178</sup> Hunter T, ‘Comparative Law as an Instrument in Transnational Law: The Example of Petroleum Regulation’ *Bond Law Review*, (2009), 45.

administrative decisions by public officials utilizing policy guidelines.<sup>179</sup> He further suggests that the best practice in the regulation of upstream activities should involve an integration of the legal, contractual, and fiscal arrangements into self-contained legislative frameworks which are coherent and consistent with both domestic and international law.<sup>180</sup>

The section of Angola examines the regulatory and legislative framework regarding occupational health and safety framework within Angola, and an overview of Norway model as adopted. The analysis determines as to whether Rwanda could borrow a leaf from Angola towards having a stable framework in addressing health and safety concerns of the sector.

In this chapter still, a critical analysis of current primary oil and gas laws or the legal frameworks for regulating the upstream development, exploration, and production of oil and gas resources in Angola is conducted.

These laws are discussed in terms of ownership of these resources, their acquisition, the legal nature of the rights, the state or government participation in their exploitation, assignment of rights, the transferability and revocation of rights, as well as recent legal reforms. The Norwegian model which prevails in Angola is investigated and critically discussed. The key features of this model are discussed, Its weaknesses, challenges and strengths are highlighted. This model is critically evaluated to determine its effectiveness in protecting these petroleum resource concerns towards sector employees. However, before the Angolan system is considered, it is befitting to provide a proper contextual background of the Norwegian petroleum regulatory system since Angola adopted it from Norway.

#### **4.9.1 The Norwegian Petroleum Regulatory System**

A discussion of Norway's petroleum legal framework or regime must first consider its petroleum resources endowment.

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<sup>179</sup> Hunter T, 'Comparative Law as an Instrument in Transnational Law: The Example of Petroleum Regulation' *Bond Law Review*, (2009), 42.

<sup>180</sup> Hunter T, 'Comparative Law as an Instrument in Transnational Law: The Example of Petroleum Regulation' *Bond Law Review*, (2009) , 4.

Norway has a small land area of 323 782 km<sup>2</sup>, which is less than three times the size of Angola. Similarly, it has a small population of 4.7 million,<sup>181</sup> which is also less than 4 times the population size of Angola, which has a population of 16 million people.

Like in Angola, the Norwegian petroleum resources are mainly located offshore. In Norway, these resources are concentrated in the continental shelf, which extends to approximately 2.2 million km<sup>2</sup>.<sup>182</sup> Norway first discovered petroleum resources in the continental shelf in 1969.<sup>183</sup> The Norwegian continental shelf constitutes 30 per cent of Europe's total continental shelf.<sup>184</sup> Half of the Norwegian continental shelf is set to contain some sedimentary rock, where petroleum may be discovered, and half of this area has been opened for petroleum activity.<sup>185</sup>

Norway, therefore, has undoubtedly vast amounts of petroleum reserves.<sup>186</sup> In terms of petroleum exports, production, and contribution to the economy, Harbo summarises the Norwegian position as follows:

Norway is Western Europe's second most important source of natural gas after Russia and the world's third largest exporter of oil and gas after Saudi Arabia and Russia. The oil and gas sectors constitute around 25% of Norway's GDP and 52% of Norwegian exports (35 times higher than the export value of fish). Norway has an annual oil production of nearly 3 million barrels per day (bpd) and an annual gas production of 85 billion cubic metres.<sup>187</sup>



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<sup>181</sup> Harbo F, 'The European Gas and Oil Market: The Role of Norway' [https://inis.iaea.org/collection/NCLCollectionStore/\\_Public/42/052/42052643.pdf](https://inis.iaea.org/collection/NCLCollectionStore/_Public/42/052/42052643.pdf) , Accessed on 9 September 2021.

<sup>182</sup>Douglas TM, 'Protection of Petroleum Resources in Africa: A comparative Analysis of Oil &Gas laws of selected African States, Unpublished LLD Thesis, University of South Africa, November 2013, 96.

<sup>183</sup> Douglas TM, 'Protection of Petroleum Resources in Africa: A comparative Analysis of Oil &Gas laws of selected African States, Unpublished LLD Thesis, University of South Africa, November 2013, 96.

<sup>184</sup> Douglas TM, 'Protection of Petroleum Resources in Africa: A comparative Analysis of Oil &Gas laws of selected African States, Unpublished LLD Thesis, University of South Africa, November 2013, 96.

<sup>185</sup>Douglas TM, 'Protection of Petroleum Resources in Africa: A comparative Analysis of Oil &Gas laws of selected African States, Unpublished LLD Thesis, University of South Africa, November 2013, 96.

<sup>186</sup>Douglas TM, 'Protection of Petroleum Resources in Africa: A comparative Analysis of Oil &Gas laws of selected African States, Unpublished LLD Thesis, University of South Africa, November 2013, 97.

<sup>187</sup> Douglas TM, 'Protection of Petroleum Resources in Africa: A comparative Analysis of Oil &Gas laws of selected African States, Unpublished LLD Thesis, University of South Africa, November 2013, 97.

#### 4.9.2 The Norwegian General Petroleum Legal Framework

As indicated earlier, Norway has adopted a hybrid system for the regulation of petroleum resources. In fact, the hybrid system is also often referred to as the Norwegian concession system.<sup>188</sup> As Moss puts it,

[i]n Norway, petroleum operations are based on the so-called ‘concession’ system which, as opposed to the ‘contractual’ system, assumes that the operating oil companies obtain a licence or a concession by the state under certain terms and conditions, most of which are fixed by legislation and some of which are negotiated case-by-case between the state and the relevant oil companies.<sup>189</sup>

In accordance with this system, the regulatory regime for petroleum activities is facilitated by means of both formal laws, that is parliamentary Acts and executive Regulations, and through individually negotiated special agreements.<sup>190</sup>

According to section 11 of the Norwegian Petroleum Activities Regulations, 1997, conditions and requirements for granting a production license and for conducting petroleum activities pursuant to a production license shall be based solely on the need to ensure that the petroleum activities within the area comprised by the production license are carried out in a proper manner.

The conditions for conducting activities pursuant to a production license shall be based on consideration for national security, public order, public health, transport safety, environment protection, protection of biological resources and national treasures of artistic, historic or archaeological value, the safety of the facilities and the employees, systematic resource management (e g production rate or the optimisation of the production activities) or the need to ensure fiscal revenues.<sup>191</sup>

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<sup>188</sup>Douglas TM, ‘Protection of Petroleum Resources in Africa: A comparative Analysis of Oil & Gas laws of selected African States, Unpublished LLD Thesis, University of South Africa, November 2013, 97.

<sup>189</sup>Douglas TM, ‘Protection of Petroleum Resources in Africa: A comparative Analysis of Oil & Gas laws of selected African States, Unpublished LLD Thesis, University of South Africa, November 2013, 97.

<sup>190</sup>Douglas TM, ‘Protection of Petroleum Resources in Africa: A comparative Analysis of Oil & Gas laws of selected African States, Unpublished LLD Thesis, University of South Africa, November 2013, 98.

<sup>191</sup> See section 11 of the Norwegian Petroleum Activities Regulation.

### 4.9.3 Angola: The Petro-State with its Geographical location

Angola is undoubtedly a petro-state, or what Gulbrandsen and Moe call, a ‘new’ petroleum province. As Karl indicates, ‘petro-states ... rely on an unsustainable development trajectory fuelled by an exhaustible resource – and the very rents produced by this resource form implacable barrier to change.’<sup>192</sup>

Angola is a classic example of a petro-state. It is located strategically for petroleum production, and has vast reserves, abundant production of petroleum resources, and good future prospects for oil and gas production.<sup>193</sup> However, it regrettably faces tremendous challenges as to the management of revenues flowing from these resources.

Angola shares its borders with Congo-Brazzaville at the northern province of Cabinda, the Democratic Republic of Congo (former Zaire) to the northeast, Zambia to the east, and Namibia to the south. Norway’s non-aligned status in global politics, its commitment in the 1970s to the North-South dialogue, and to non-interference in internal politics of its development aid cooperation partners, enabled Norway to gain decisive influence in the Angolan decision making process on its oil and gas legal framework, at a time when Angola was still closely aligned with the former Soviet Union and Cuba, and in a state of war with apartheid South Africa.<sup>194</sup>

Like Rwanda, Angola’s petroleum resources are mostly located offshore. The main petroleum basins are located in the Northern offshore near the coast of the Cabinda and Zaire provinces.<sup>195</sup> Angola is not only the main oil producer in the SADC region, but it is also one of the top ranking oil producers on the African continent attaining, since 2005, nearly the

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<sup>192</sup> Jennifer B, Mika S, ‘The Sustainable Use of Natural Resources: The Governance Challenge’, <https://www.iisd.org/articles/sustainable-use-natural-resources-governance-challenge> , Accessed on 13 September 2021.

<sup>193</sup> Report, ‘Angola and Mozambique Gas Monetization for Economic Development’, [https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Angola-Mozambique - Gas Monetization for Economic Development - Project Study.pdf](https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Angola-Mozambique_-_Gas_Monetization_for_Economic_Development_-_Project_Study.pdf) , Accessed on 13 September, 2021.

<sup>194</sup> Avelino C, & S.J, ‘Angola and the Democratic Republic of Congo’s Border from a place of Business to the Point of Entry for illegal Immigration’, [https://www.comillas.edu/documentos/centros/iuem/Migratory\\_Flows\\_at\\_the\\_borders\\_of\\_our\\_world/10\\_Angola\\_and\\_the\\_RDC.pdf](https://www.comillas.edu/documentos/centros/iuem/Migratory_Flows_at_the_borders_of_our_world/10_Angola_and_the_RDC.pdf) , Accessed on 13 September 2021.

<sup>195</sup> A World Bank Country Study, Angola: *An Introductory Economic Review* (The International Bank for Reconstruction and Development, Washington DC 1991), 3.

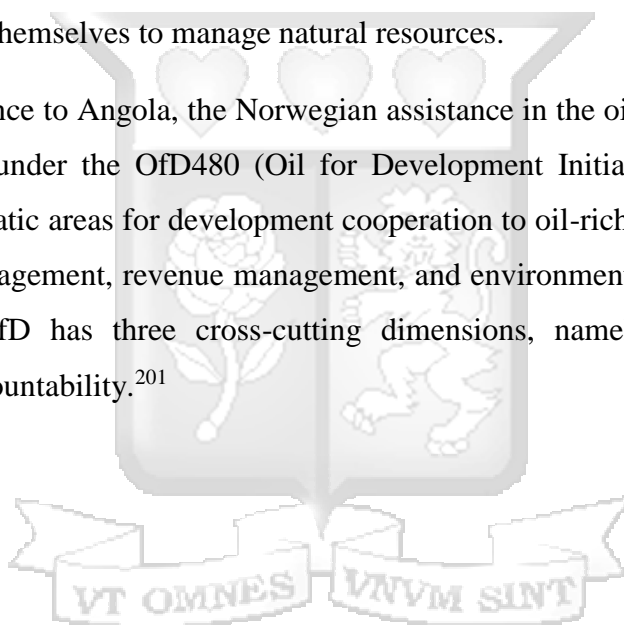
same production levels as Nigeria.<sup>196</sup> It is also not only an important member of APPA, but has, since 2007, become a member of OPEC.<sup>197</sup>

#### 4.9.4 Relations between Angola and Norway in the Oil Sector

According to Cappellen and Mjøset, Norway has become increasingly different from the other Nordic countries (Denmark, Finland, Iceland and Sweden) as it is the only Nordic country with a recent history of renewed resource wealth.<sup>198</sup>

Norway currently offers petroleum management sector assistance in more than 20 countries, including Angola, in a large variety of fields.<sup>199</sup> However, according to the report, the extent to which Norwegian assistance can make a difference depends on a range of factors which enables the countries themselves to manage natural resources.

With particular reference to Angola, the Norwegian assistance in the oil sector began in 1987 and continues today under the OfD480 (Oil for Development Initiative) brand. The OfD focuses on three thematic areas for development cooperation to oil-rich developing countries, namely, resource management, revenue management, and environmental management.<sup>200</sup> In addition to these, OfD has three cross-cutting dimensions, namely, good governance, transparency, and accountability.<sup>201</sup>



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<sup>196</sup> World Bank Group Report, Angola: Systematic Country Diagnosis, December 2018, <https://openknowledge.worldbank.org/bitstream/handle/10986/31443/angola-scd-03072019-636877656084587895.pdf> , Accessed on 13 September 2021.

<sup>197</sup> Founded in Baghdad, Iraq, in September 1960 by five countries namely Iran, Iraq, Kuwait, Saudi Arabia and Venezuela, OPEC (Organisation of the Petroleum Exporting Countries) is a permanent intergovernmental organisation of 12 oil-exporting developing nations.

<sup>198</sup> Douglas TM, 'Protection of Petroleum Resources in Africa: A comparative Analysis of Oil & Gas laws of selected African States, Unpublished LLD Thesis, University of South Africa, November 2013, 108.

<sup>199</sup> Jover E, Alexandra M & others, Angola Private Sector: Country Profile, 2012, [https://www.afdb.org/fileadmin/uploads/afdb/Documents/Evaluation-Reports-Shared-With-OPEV/\\_Angola%20%20-%20Private%20Sector%20Country%20Profile.pdf](https://www.afdb.org/fileadmin/uploads/afdb/Documents/Evaluation-Reports-Shared-With-OPEV/_Angola%20%20-%20Private%20Sector%20Country%20Profile.pdf) , Accessed on 13 September 2021.

<sup>200</sup> Govender S & Skagestad BM 'Civil Society and the Oil for Development in Angola: Mechanisms for Enhancing Strategic Cooperation among Non-State Actors', a 2008 report by the Institute for Democracy in South Africa (IDASA) for the Norwegian Embassy in Luanda, <https://www.norway.no/en/angola/norway-angola/about-embassy/norway-in-angola/> , Accessed on 13 September 2021.

<sup>201</sup> Douglas TM, 'Protection of Petroleum Resources in Africa: A comparative Analysis of Oil & Gas laws of selected African States, Unpublished LLD Thesis, University of South Africa, November 2013, 98.

It was as a result of this Norwegian assistance that a new Petroleum Law was drafted and promulgated in Angola, and a standard PSA model, was revised to focus on environment, occupational health and safety, and local content, among others.<sup>202</sup>

### **Which System is Preferable? (Norway, Angola or British system?)**

#### **4.9.5 Towards Comparative Regulatory Framework Depending on Countries Systems**

Earlier sections of chapter four (4) to this Thesis have determined that various jurisdictions have fairly abode to international best standards towards occupational health and safety risks imminent within the Oil and gas sector. This as well explains clearly why Angola, Norway and the UK were the selected countries for purposes of comparison.

As clearly indicated in chapter four(4), variations do exist between states. The study has been increasingly significant as demonstrated by Douglas who agrees with Hossain who states that:<sup>203</sup>

The regulation of petroleum projects in different states falls broadly under three approaches namely, general legislation or resilience on individually legislated contract, a comprehensive or highly detailed approach, and a hybrid system.

In this section, the research highlighted the differences and similarities between the approaches adopted for regulating occupational health and safety while comparing Norway, Angola and the UK. It is, however, crucial that before embarking on what differentiates the systems in all three countries, we begin by clearly elaborating on the systems or approaches used.

Under the general legislation or sector-specific, a pre-determined condition in which exploration and exploitation of petroleum resources are granted is through standard licenses or leases.<sup>204</sup> Under this approach, the terms are in comprehensive detail and are non-negotiable.

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<sup>202</sup> Norad Evaluation Report, 13,

[https://www.oecd.org/derec/norway/NORWAY\\_Use%20of%20Evaluation%20in%20the%20Norwegian%20Development%20Cooperation%20System.pdf](https://www.oecd.org/derec/norway/NORWAY_Use%20of%20Evaluation%20in%20the%20Norwegian%20Development%20Cooperation%20System.pdf) , Accessed on 13 September 2021.


<sup>203</sup>Douglas T, Mailula, 'Protection of Petroleum Resources in Africa: A comparative Analysis of oil and Gas Laws of Selected African States', Unpublished PHD Thesis, University of South Africa, November 2013, 404.

<sup>204</sup>Douglas T Mailula, 'Protection of Petroleum Resources in Africa: A comparative Analysis of oil and Gas Laws of Selected African States', Unpublished PHD Thesis, University of South Africa, November 2013, 405.


The Extractives hub report concludes that it's indeed the preferred route for most European Union member states like Australia, the US, Canada, and most Latin American states.<sup>205</sup>

The system has proven to favor investors, and they are in a better bargaining position to negotiate favorable terms and conditions, which serves them an interest. This approach, however, is against the Australian report advocating for rather separate systems with a focus on certain standards like 'occupational health and safety regulations within the sector.'<sup>206</sup>

The second approach used by jurisdictions is the resilience of individually legislated contracts or Agreements. This approach is said to be used by the developing countries where petroleum legislation is very general or does not exist at all. The advantage of this approach is that it's flexible towards host states during negotiations.<sup>207</sup>



For example, where no legislations are governing the activities of the sector, the host states usually will grant rights to explore the hydrocarbons under a negotiated arrangement in the absence of exhaustive petroleum legislation.<sup>208</sup> Examples of such countries are South Africa, Mozambique, Tanzania, Uganda, Kenya, and others.<sup>209</sup>



The final system is the hybrid one. General legislation sets out certain provisions and minimum standards or conditions for granting the rights to exploit resources by an IOC. As affirmed by Douglas, it also provides for certain important matters to be settled through negotiations between the host government and the IOC.<sup>210</sup>

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<sup>205</sup>Extractives Hub, 'Petroleum Legislations and Regulations: International law', 3, <https://www.extractiveshub.org/servefile/getFile/id/4223> , Accessed on 8 March 2021.

<sup>206</sup>Review of Regulatory Burden on Upstream Petroleum (Oil & Gas) sector: Productivity commission Research Report, 2009, <https://www.pc.gov.au/inquiries/completed/upstream-petroleum/report/upstream-petroleum.pdf> , Accessed on 4 March 2021.

<sup>207</sup>Extractives Hub, 'Petroleum Legislations and Regulations: International law', 3, <https://www.extractiveshub.org/servefile/getFile/id/4223> , Accessed on 8 March 2021.

<sup>208</sup>Douglas T Mailula, 'Protection of Petroleum Resources in Africa: A comparative Analysis of oil and Gas Laws of Selected African States', Unpublished PHD Thesis, University of South Africa, November 2013, 407.

<sup>209</sup>Extractives Hub, 'Petroleum Legislations and Regulations: International law', 6, <https://www.extractiveshub.org/servefile/getFile/id/4223> , Accessed on 8 March 2021.

<sup>210</sup>Douglas T, Mailula, 'Protection of Petroleum Resources in Africa: A comparative Analysis of oil and Gas Laws of Selected African States', Unpublished PHD Thesis, University of South Africa, November 2013, 407.

Examples of countries that have adopted this system as arguably said to be the best and include Norway, Angola, New Zealand, and the UK. ‘The biggest advantage for this system is its flexibility for both the international oil companies and host-governments where interests of both parties are chartered for.’<sup>211</sup>

#### **4.9.6 The Similarities: The Hybrid System in Norway ,UK and Angola**

From the presented literature, part of the main similarities between Norway and the UK is that they have both adopted the Hybrid system which sets out the minimum standards or conditions for regulating the activities of the upstream sector.

As previously stated, Norway’s Petroleum Safety Authority (PSA) has the mandate to enforce and develop Regulations that govern the Safety of the Norwegian people. This is clearly stated in section 9 of the Health and Safety Act that requires all activities to be conducted in a manner of a high level of safety.

In the UK, there is the Health and Safety at work Act, 1974(HSWA), plus the offshore Safety Act, 1992 as the regulators of the sector’s activities. The current Petroleum Act, 1998 for exploration and production requires exploitation of the resources considering Safety and Health requirements.

This system has seen many African oil and gas producing countries adopt it as it's considered complete to both the international oil companies and host governments because it has catered for the safety and health concerns of employees. Where such issues are not clear, the system is flexible to contractual arrangements.

Part of the countries in Africa that have incorporated this system is Angola and Nigeria. However, countries like South Africa have decided to adopt the general legislation, making it different from Norway and the UK.

Angola as an African country that adopted the hybrid system used by the UK and Norway. Angola is a civil law system that creates a similarity to Rwanda as known for being a civil law jurisdiction. The other similarity between Rwanda and Angola is that both countries have

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<sup>211</sup>Douglas T, Mailula, ‘Protection of Petroleum Resources in Africa: A comparative Analysis of oil and Gas Laws of Selected African States’, Unpublished PHD Thesis, University of South Africa, November 2013, 408.

troops in the Democratic Republic of Congo( DRC). This therefore means that if one country has a problem, both will be affected.<sup>212</sup>

As indicated in the previous literature, ownership rights are vested in the state, and legislations concerning occupational health and safety range within domestic laws like the constitution, petroleum Acts, occupational health and safety Acts, etc of most countries including Rwanda. This research commands the need to develop a robust occupational health and safety framework in Rwanda to cater for concerns of occupational health and safety within the upstream sector.

This chapter adopted a comparative study methodology from global best practices for a possible transplant into Rwanda. From the Analysis made, *Rwanda would adopt the Hybrid system model used by Angola*. This system has proven to be flexible to both the international oil companies( IOC's ) and the host-states. This creates a balance for all the sector players.

The similarity between Rwanda, Norway, and the UK might not be easily established at the onset, and so might be questioned by many Academicians. However, Angola is a live example of an African civil country that has adopted the system towards addressing occupational health and safety of the employees within the upstream oil and gas sector and has thus been successful. Angola adopted the Norwegian model, which is used by the UK, and according to literature, is said to be the best so far.

The fact that Norway and UK have no similarities with Rwanda, we can rightly state that Angola is an African country within the sector business, sharing tangible similarities to Rwanda. Foreexample, most states in civil law jurisdictions have eventually passed particular codes to reserve subsurface rights to the states, which doesnot widely portray the common law systems.

#### **4.9.7 Conclusion**

From the research made on Norway, Angola and the United Kingdom(UK), it is crystal clear that mitigating measures have been established within the setors so as to address the concerns of occupational health and safety. These measures have curbed the risks through companies

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<sup>212</sup> Angola –Rwanda: Improving relations, <https://reliefweb.int/report/angola/angola-rwanda-improving-relations> , Accessed on 10 September 2021.

carrying out reporting standards, emergency preparedness systems, and other mitigation factors based on the International Oil and Gas Producers Association(OGP), the American Petroleum Institute(API), and the various Oil and Gas Industry Guidance on Voluntary Sustainability Reporting(2010).<sup>213</sup>

The comparative study made on the various countries indicate that the systems used by each of the countries has been successful in addressing occupational health and safety concerns though more emphasis and hardwork is still needed. Rwanda as an emerging country in the oil and gas sector could follow the Norwegian model adopted by Angola in addressing issues of occupational health and safety. This is because Angola has quite a fair similarity with Rwanda, unlike the other countries. The model has fairly been able to cater for the sector concerns through putting in place robust policies and monitoring measures for mitigation of the sector risks since most of the famous oil producing countries have adopted it like the UK.

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<sup>213</sup>Jennifer S, Salim G and others, 'Towards Sustainability in the Oil and Gas Sector: Benchmarking of Environmental, Health and Safety Efforts', *Journal of Environmental sustainability*, (2013), 109, <https://scholarworks.rit.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1028&context=jes> , Accessed on 17 June 2021.

## CHAPTER 5 : KEY FINDINGS, RECOMMENDATIONS AND CONCLUSIONS

### 5.1 Introduction

This research outlines key findings relating to the inadequacy of occupational health and safety framework within the Rwandan upstream oil and gas sector. In attempting to answer the research questions in chapter one, it has proved that imminent risks of the sector are a great concern towards employees.

Despite that, Rwanda's upstream sector has not yet achieved the desired results towards employee safety and health concerns. This has attributed to various factors which shall be discussed in detail in this section:

#### a) **Key Finding 1: Lack of a comprehensive Occupational Health and Safety Framework within Rwanda's Upstream Sector**

As per the earlier literature, it has been proven that Rwanda does not have existing regulations in place to safeguard the activities of exploration in the upstream sector. This is a great threat to the employees of the sector. Additionally, it has also been proven to be against international norms of best practice. However, there is a regulator which is the Rwanda Mines and Gas Board (RMGB) responsible for overseeing the activities of the sector and respond to its concerns. The concerns of occupational health and safety are yet to be addressed by the institution after this research.

##### i. **Upstream Petroleum Draft Policy, (2013)**

Rwanda has an upstream draft policy that has not yet been passed. This policy once ratified will address fully the concerns of occupational health and safety imminent towards employees within the sector.

##### ii. **Petroleum Act, (2016)**

The Petroleum Act, 2016 of Rwanda came into force in 2016. The purpose of the act is to govern Petroleum Exploration and Production Activities within the sector. Section 31 of the Act indeed explains conditions under which gas flaring should be done to safeguard the health and safety of persons. However, findings have proven that concerns of occupational health and safety have not been regulated, and there is a lack of clarity within the law.

The inadequacy of regulations governing activities of the sector is likely to expose employees to greater risks of health and safety. This gap has therefore created issues of implementation and enforceability of the upstream sector in Rwanda.

**b) Key Finding 2: Lack of Expertise and Advanced Technology**

The research findings are that Rwanda's upstream oil and gas sector lacks technical manpower to underwrite occupational health and safety risks imminent within the sector. This has created a huge legal risk within the sector which might render its investors unfriendly. Part of the major concerns to international oil companies is that they face the biggest risks. This explains why a country's legal frame should be clear to cater for the sector's concerns.

Rwanda by having a robust framework to address issues of occupational health and safety is also creating investment opportunities. This is typically how governments make money, through Bonuses, Royalty Fees, Taxes, and State Participation.

From a 'Corporate Social Responsibility' view, offshore and onshore operations require advanced, up-to-date technology. This is the best available technology in a country as per the sector's language. The inadequate technology would mean workers are likely to get exposed to the risks imminent within the sector.

For example activities like gas flaring need to be directed to refineries to prevent health concerns. Oil spillage would need regulations that govern the activities of oil companies. The inadequacy of regulations to govern all of these activities towards workers will expose risks to workers' health and safety.

**c) Key Finding 3: Weak Institutional Capacity**

The institution regulating the upstream oil and gas sector is the 'Rwanda Mines, Petroleum and Gas Board'. It was established within the official Gazette, by Law No.072007 of 03/02/2017 establishing Rwanda Mines, Petroleum and Gas Board. Part of the roles performed by the institution is the implementation and regulation of the sector's activities. These activities again as earlier mentioned range from oil spillages, Gas flaring, etc that harm workers' health and safety. The activities are a result of Operational, Geology, and Equipment related risks.

The institution must have regulated the occupational health and safety risks within sector-related laws like the Petroleum Act, 2016, or the Upstream Policy, 2013. The policy would

have catered for the concerns. However, it has been in drafts for years recording a great loophole within the sector.

**d) Key Finding 4: Lack of Training and Manpower Development of Underwriters to Underwrite Occupational Health and Safety Risks in the Oil and Gas Sector**

Oil and gas is a new phenomenon in most developing countries, including Rwanda. This means that the country will need the expertise to train sector workers on some of these imminent risks within the sector. Training goes with a high cost which might not be desirable by the country if not within the budget.

The manpower development of underwriters to underwrite oil and gas risks in Rwanda is limited. The core reason could be because the sector is still new and in its nascent stages. Even with the discovery of huge Methane Gas in Lake Kivu, oil and gas insurance is still an illusion towards the sector rendering it unattractive to large financial institutions -such as banks, Insurance companies, and investment houses within the country.

**5.2 Recommendations**

The following recommendations will be instrumental in formulating a formidable platform for the implementation of upstream occupational health and safety risks within Rwanda's sector.

- a) There is need to have a specific "Occupational Health and Safety Framework"(OSH) in place. This has been recommended in chapter four of the study so as to respond to employee concerns within the upstream sector.
- a) **A partnership between the Rwanda Mines, Petroleum and Gas Board( RMGB) and Rwanda Social Security Board( RSSB)**

The oil and gas sector in Rwanda is still in its nascent stages. The awake to have effective and robust occupational health and safety policies is still in drafts. However, there exists a general occupational health and safety Act ('OSHA') that addresses concerns of employees within other sectors. It was established by Law No. 009/2021 of 16/02/2021, establishing the Rwanda Social Security Board.

It is a recommendation that through a partnership between the two regulators, the general occupational health and safety Act would incorporate the unique existing occupational health and safety concerns of employees within the upstream oil and gas sector as it grows to better itself.

This will enable a successful placement and regulation of employee's activities like gas flaring, oil spillages, etc. This partnership will also promote cohesiveness between the two sectors eliminating any overlap regarding the regulation of the oil and gas business. The mandate for each regulator should therefore be clear.

Additionally, the partnership will also have addressed some of the research questions to this paper regarding 'whether Rwanda should enforce issues of occupational health and safety within the oil and gas sector'. This will enable Rwandan courts to award damages as a form of compensation for liability towards sector players. This move will create investor confidence within the country's sector.

**b) Need for Establishment of a National Policy on Oil and Gas Insurance Placement for Upstream Sector**

There should be the establishment of a policy to guide the development and management of upstream activities. The overall goal for this initiative would be for economic transformation towards sustainability of the sector. What it would take is merely to formalize the recommended partnership of the regulators through a government policy. This would invite underwritings services from large financial institutions like –banks, insurance companies, and investment houses to cover occupational health and safety risks within the sector.

**c) Need to Strengthen Monitoring of Compliance and Sanctions**

Through the partnership of the regulators, the general occupational health and safety Act (OSHA) should incorporate a monitoring tool to ensure compliance towards sector players. Monitoring and compliance would include a request for monthly to annual reports backed by documentary evidence regarding occupational health risk management.

**d) Building Technical Training and Technological Capacity in the Upstream Sector**

The findings geared towards this research included a lack of expertise training and advanced technology within the upstream sector. The adequate capacity to carry out training and

embarking on the best available technology like machinery used by workers within the sector would be a key area in the successful implementation of occupational health and safety risks.

This would be done through the transfer of knowledge, training, and apprenticeship towards workers of the sector and address how the risks can be mitigated to minimize the risks.

The initiative is better codified than in statute books for ease of implementation. Part of the provisions to include would be a provision on local content that enables the training of workers within the sector. The majority of African oil and gas countries have implemented a local content Bill. Examples include South Africa, Kenya, Angola, Nigeria, and others.

### **5.3 General Conclusion**

Upon review of Rwanda's upstream oil and gas sector, research findings deduced to lack of an adequate "Occupational Health and Safety framework" within the sector towards its operations. The sector is characterized by risks like Operational, Geology, and Equipment. These risks if not regulated are investor unfriendly. This, therefore, creates a loophole within the sector.

The sector's 'bible' –being the Petroleum Act, 2016 of Rwanda as many refer to it currently does not cater for occupational health and safety concerns of employees within the upstream sector.

The upstream sector through the stewardship of its regulators will need to carry out an effective overhaul of the current sector's occupational health and safety concern towards workers. The revision towards an implementation of a robust framework will enable the sustainability of the sector. This will additionally align with international core standards in promoting the health and safety of workers in the sector. The hope is to see that the researcher's recommendations provide the impetus in this regard.

As per this research, the benefits of the upstream petroleum operations can only be possible once employee sector risks are mitigated through the creation of robust policies by Rwanda's upstream sector. This gives compulsory obligations to oil companies to manage the sector.

This research has also shown that successful realization of occupational health and safety framework in the sector means generation of adequate technical Training within the sector, Establishment of monitoring of compliance and Sanction, and Establishment of a National

Policy on oil and gas insurance placement as indicated in chapter 5. The robust framework will provide the roadmap towards this goal as seen in the case study of Norway.

The Government of Rwanda (GOR) has realized the magical sector benefits. However, has forgotten to regulate occupational health and safety concerns within the sector. Just like other oil-producing countries, Rwanda's sector faces challenges that impede the realization of successful occupational health and safety. These challenges can, however, be partially avoided through a robust regulatory regime as analyzed in chapter 4 of this research.

As demonstrated in chapter 5, unless specific occupational health and safety policies with enforcement mechanisms are put in place to mitigate sector risks imminent to employees, the industry may not achieve its purpose of the newly acquired 'oil wealth' leading to sector frustrations.

To avoid such, either the Petroleum Policy (2013) should be amended to include sector concerns, with penalties in case of noncompliance by sector players or agree to have Partnership between Rwanda Mines, Petroleum and Gas (RMGB) and Rwanda Social Security Board (RSSB) to ensure proper and well –structured enforcement. This will therefore avoid hold up towards implementation of employee risks and for the sector players to realize maximum benefits from the upstream petroleum operations.

In conclusion, the oil and gas sector has the potential to enhance development and improve the socio-economic conditions of both host states and communities if well managed as discussed in chapter 2 of this research. The proper management of the operations of the sector requires a comprehensive and regulatory framework that ensures that sector employees are protected from sector risks.

The Constitution of Rwanda 2015 reaffirms that Rwanda's resources belong to the people of Rwanda and its exploitation should focus on benefiting the country. Rwanda must therefore utilize its resources to create opportunities for its citizens. It must add value to and diversify its production across the oil and gas industry to enable sustainability.

The government of Rwanda has attempted to introduce various laws within the sector, however, this research has shown that the existing legal framework does not adequately legislate on occupational health and safety risks faced by employees during sector operations. This legal risk within the country's sector does not, therefore, mirror international best practices as established in chapter 2 of the research. In failing to adequately legislate on

occupational health and safety, Rwanda's sovereignty over its natural resources is compromised.

There is a need to strengthen occupational health and safety in the sector to ensure that the legal framework is robust and matches international best practices. Adequate occupational health and safety framework and strong monitoring and enforcement mechanism can address Rwanda's occupational health and safety upstream concerns towards sector employees.

**Word Count**

**26,402**



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## Appendices

### Appendix A : Ethics Clearance Certificate /Letter



12<sup>th</sup> October 2021

Ms Mukanjishi Specioza,  
specioza.mukanjishi@strathmore.edu

Dear Ms Mukanjishi,

**RE: Occupational Health and Safety Framework in the Oil and Gas Sector. Case study of Rwanda**

This is to inform you that SU-IERC has reviewed and **approved** your above **SU-master's** research proposal. Your application reference number is **SU-IERC1181/21**. The approval period is **12<sup>th</sup> October 2021 to 11<sup>th</sup> October 2022**.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-IERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-IERC within 48 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-IERC within 48 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to SU-IERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke/> and also obtain other clearances needed

Yours sincerely,

for: Prof Fred Were,  
**Chairperson; SU-IERC**



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## Appendix B : Similarity Report

### Document Information

<b>Analyzed document</b>	Occupational Health and Safety Framework in the Upstream Oil and Gas Sector. Case study of Rwanda.doc (D115913038)
<b>Submitted</b>	2021-10-21 09:10:00
<b>Submitted by</b>	
<b>Submitter email</b>	Specioza.Mukanjishi@strathmore.edu
<b>Similarity</b>	11%
<b>Analysis address</b>	library.strath@analysis.arkund.com

### Sources included in the report

<b>MOUREEN RESEARCH FINAL NEW.doc</b>	<b>1</b>	
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