

A LEGAL ANALYSIS OF THE OBSERVATION OF HEALTH RIGHTS IN THE PROMOTION OF THE OIL AND GAS INDUSTRY IN UGANDA

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DECLARATION

I Afoyorwoth Winny Epiphany, hereby declare that this dissertation submitted to the School of Law of Uganda Christian University for the award of the degree of Master of International Energy Law and Policy is my original work and has not been presented to any other institution for any award.

Signature



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APPROVAL

This is to certify that this dissertation entitled “*A Legal Analysis of the Observation of Health Rights in the Promotion of the Oil and Gas Industry in Uganda*” was done under my supervision and is now ready for submission for examination as a requirement for the award of a Master of Laws degree in International Energy Law and Policy of Uganda Christian University.

Signed: ...  ... Date:23RD June 2026.....

Dr. Anthony C.K Kakooza

University Supervisor

DEDICATION

To my mother, for the unceasing love and prayers. My beloved children, Ryan Phillips and Jolie Kyran for the inspiration you bring to my life, to attain greater heights. For the sacrifices you made, in not being with your mom on several occasions, as I studied or secluded myself to complete my study.

To you my late Dad, Adubango Abel Saverio, “may your soul rest in peace”. You gave me the push I needed to enroll for my master’s class. You always believed in me and have always reminded me to never settle for less. And to you brother Ronnie and sisters, Kayeny Olive and Jakisa Goretti, you have been my pillars since day one. Helping me with the children and enabling me to study.

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List of laws referred to;

Act on protection against fire, explosion and accidents involving dangerous substances and on the fire service's rescue tasks (Fire and Explosion Protection Act)

Environmental Impact Assessment Decree 1992, Laws of The Federation of Nigeria

National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020

National Environment (Environmental and Social Assessment) Regulations, 2020. Uganda

National Environment (Waste Management) Regulations, 2020. SI No 49/2020

National Oil Spill Detection and Response Agency (Establishment) Act, 2006 Law of Nigeria

Petroleum Act Chapter P10 (Chapter 350 LFN 1990) Laws of The Federation of Nigeria

The 1995 Constitution of the Republic of Uganda (As amended)

The National Environment Act, 2019. Laws of Uganda

The National Oil and Gas Policy (NOGP), 2008 of Uganda.

The Petroleum (Exploration and Production) Act Cap 150, laws of Uganda

The Petroleum (Exploration, Development and Production) (Health, Safety and Environment) Regulations, 2016.

The Petroleum (Exploration, Development and Production) (Health, Safety and Environment) Regulations, 2016

The Petroleum (Exploration, Development and Production) Act, 2013.

The Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act, 2013

The Petroleum (Refining, Conversion, Transmission and Midstream Storage) Regulations, 2016

The Uganda National Oil policy, 2008.

International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL) 1954 as amended in 1962.

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

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Centre for Oil Pollution Watch (COPW) Vs NNPC (2018). Supreme Court of Nigeria, SC. 319/2013

Finch v Surrey CC [2024] UKSC 20

Gbemre v. Shell Petroleum Development Company of Nigeria Ltd. and Others (2005).

Federal High Court of Nigeria in the Benin Judicial Division, suit FHC/B/CS/53/05, 14 November 2005

ABSTRACT

The discovery of oil and gas in any country is usually considered a blessing due to its well-founded role in guaranteeing sustainable economic development. However, the oil and gas exploration and production process comes with adverse effects, in particular, the upstream activities that usually pollute the environment and subsequently destroy the natural ecosystems thereby threatening human livelihood, notably the right to a clean and healthy environment.

This study was guided by three specific objectives; to analyze the effectiveness of the law in protecting the environment from oil and gas activities, the efficacy of the law in promoting the right to a clean and healthy environment, and to examine the feasibility of the existing institutional framework to protect the environment from the adverse effects of oil and gas activities in Uganda. The study adopted a qualitative doctrinal legal research design and systematically collected legal and non-legal textual data. Content and thematic data analysis techniques were applied in analyzing and interpreting the data collected.

The study revealed that several legal instruments were formulated to govern the activities of oil and gas in Uganda. Overall, the laws strongly emphasize the necessity to manage the environment sustainably, strict application of pollution control license, application of strict liability for any damages to human health and the environment, and oil and gas project developers are mandated to apply the mitigation hierarchy as indicated under the laws. The institutions concerned have specialized units that perform specific responsibilities to ensure the provisions of the laws are properly implemented. The study recommends that the laws should be periodically revised and

their provisions be implemented without fear or favor to achieve its objective of preserving the environment.

Key Words: Legal analysis, health rights, oil and gas industry

CHAPTER ONE

GENERAL INTRODUCTION

1.1 Introduction and Background

The discovery of valuable minerals like oil and gas is usually considered a blessing because it plays a major role in guaranteeing sustainable economic development. This is notable in several countries with oil and gas deposits. The exploration and the production processes of oil and gas activities come with a lot of adverse effects, and particularly the upstream activities, which usually pollute the environment, and destroy the existing natural ecosystems, thereby destroying the environment that humans entirely depend on. Most notably, human livelihood, especially the right to a clean and healthy environment.

It is severely documented that oil and gas exploration, extraction, and production activities commonly occur near human settlements. A report in 2020 indicated an estimated 70,000 oil fields across 100 countries were situated within a reasonably close vicinity to human settlements.¹ Conversely, existing oil and gas fields were assessed to have potentially impacted the health and environment of over 600 million people worldwide.² In part, the above finding was because a single oil well typically operates for a long duration of time, stressing between 20-30 years. All activities associated with oil and gas, including but not limited to construction, production, processing, and transportation, invariably destroy the environment; their effects are felt both in the short and long term.

In the premise, this study explicitly focused on analyzing the observation of the health rights of Ugandans, and particularly those living within oil and gas production areas in the Albertine Graben. Notwithstanding, the study keenly focused on exploring the

¹Lund, J. W., &Toth, A. N. (2021). Direct utilization of geothermal energy 2020 worldwide review. *Geothermics*, 90, 101915.

²Romanello, M., Di Napoli, C., Drummond, P., Green, C., Kennard, H., Lampard, P., ... & Costello, A. (2022). The 2022 report of the Lancet Countdown on health and climate change: health at the mercy of fossil fuels. *The Lancet*, 400(10363), 1619-1654.

associated environmental concerns linked with the activities of the oil and gas industry in Uganda at large.

1.1.1 Background of the Study

There are many oil and gas-producing countries around the globe, and the magnitude of oil and gas production varies according to different countries. In hierarchical order, the U.S. Energy Information Administration (USEIA) reported that the United States produced on average 18.6 million barrels of liquid petroleum per day (b/d), which accounted for 20% of the world's production in 2020. This was followed by Saudi Arabia with 10.8 million b/d, Russia 10.5 million b/d, Canada 5.3 million b/d, and China 4.9 million b/d.³

Although Uganda is not ranked among the top oil and gas producing nations in the world, it is one of the countries that is well-endowed with several minerals and a huge deposit of oil and gas, which is estimated at 6.5 billion barrels of proven oil reserves as economically recoverable.⁴ In essence, this means that Uganda will join the group of nations producing oil and gas for commercial purposes. Conversely, despite this viable opportunity, it must be recognized that history from other oil and gas producing countries has demonstrated that the entire oil and gas production processes come with associated and considerate negative consequences on the general environment and, in particular, on human health, especially those of the local communities residing within close vicinity to the oil fields.

It is important to acknowledge the fact that oil and gas production undergoes a robust process, this which directly and indirectly affects the environment and human livelihood and health in general. Some studies have pointed out that oil and gas drilling and production processes have devastating impacts not only on the wildlife but also on human lives, especially of those communities residing within close vicinity where oil and gas activities take place.⁵ At the global scale, scholarly evidence indicates that a considerable proportion of the human population resides within less than a mile of oil

³U.S. Energy Information Administration. "China Surpassed the United States as the World's Largest Crude Oil Importer in 2017"

⁴<https://www.pau.go.ug/ugandas-petroleum-resources/>

⁵Morton, P. et al (2002). Coalbed Methane and Public Wildlands: How Much and at What Cost?

and gas field wells. Coupled with the above, evidence confirms that in the United States (US) it was revealed that more than 12 million US residents were identified to be living within a half-mile of an oil and gas well.⁶

Additionally, the entire processes and activities involved in oil and gas production immensely contribute to fueling climate change and damaging public lands.⁷ From the commentary above, it should be noted that land use has an inseparable connection with human life and survival, implying that the activities of oil and gas production must be carefully and professionally done, so as not to severely compromise the value of land and its associated environmental components.

There have been concerted efforts to establish the effect of oil and gas activities on the environment, for instance in 2018, an assessment to establish the contribution of methane emissions from the U.S. oil and gas industry disclosed that the actual methane leakages were found to be nearly 60% higher than what was reported by the Environmental Protection Agency (EPA).⁸ Outflows of such magnitude were discovered to present devastating consequences on the environment and in particular human health.⁹ The impression that oil extractions commonly transpire near human populations, is yet strengthened by a report in which it was acknowledged that over 6 million people live or work within a close vicinity of oil and gas extraction activities.¹⁰ This is more of a confirmation that while undertaking oil and gas production, issues that are anticipated to cause harm to the environment and human life must be highly mitigated.

For decades, residents within the oil and gas fields have reported numerous health complications that either started as a result of their residency within oil production areas or even had their situation worsened after oil and gas development activities

⁶Epstein, A. C. (2017). The human health implications of oil and natural gas development. In *Advances in chemical pollution, environmental management and protection* (Vol. 1, pp. 113-145). Elsevier.

⁷Andrews, R. N. (2008). Managing the environment, managing ourselves. In *Managing the Environment, Managing Ourselves*. Yale University Press.

⁸Lee, J., et al (2022). Managing upstream oil and gas emissions: A public health oriented approach. *Journal of Environmental Management*, 310, 114766.

⁹Ajugwo, A. O. (2013). Negative effects of gas flaring: The Nigerian experience. *Journal of Environment Pollution and Human Health*, 1(1), 6-8.

¹⁰Johnston, J. E., Lim, E., & Roh, H. (2019). Impact of upstream oil extraction and environmental public health: A review of the evidence. *Science of the Total Environment*, 657, 187-199.

began in the area where they live, work and play.¹¹ Some of the most prevalent ill health so far reported include but are not limited to; respiratory problems like asthma and coughing, eye, nose, and throat irritation due to inhalation of highly toxic and contaminated air. Further, air pollution from fossil fuels was reported as a huge factor in facilitating respiratory, cardiovascular, and other diseases in people aged 14 and older in the United States.¹² Worse of all, the report concluded that the fossil fuel extraction processes can leak toxic substances into the soil and drinking water sources, thereby responsible for causing cancer, birth defects, and liver damage.

In association with the health risks of people living within oil production wells, scholarly evidence revealed that people who interacted with oil spills, especially in water or even while undertaking a cleaning exercise from production spots, have had twice as much mercury in their urine as compared to people who had not been involved.¹³ Broadly noting, mercury and other associated chemical contents found in oil and gas production processes have been described as a leading cause of brain and liver damage in humans,¹⁴ the toxic nature of hundreds of these chemicals and pollutants linked with oil and gas development has been empirically established to have their origin from oil and gas activities.

Apart from experiencing adverse consequences of oil and gas activities by residents, scholarly evidence has further demonstrated that the source of a health concern due to destruction from oil and gas, can arise from oil and gas pipelines that are not necessarily located close to production spots. For instance, it was reported that each time a pipeline ruptured or a waste pit overflowed, people living in the vicinity were flooded with mercury from the oil and gas products, notably through the water bodies they use, the fish they eat, and the air they breathe.¹⁵ Further, preceding scholarly evidence has shown that for the past 50 years, the people living in the northern

¹¹Davidson, D. J. (2018). Evaluating the effects of living with contamination from the lens of trauma: a case study of fracking development in Alberta, Canada. *Environmental Sociology*, 4(2), 196-209.

¹²Vohra, K. et al (2021). Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem. *Environmental Research*, 195, 110754.

¹³Webb, E (2016). Potential hazards of air pollutant emissions from unconventional oil and natural gas operations on the respiratory health of children and infants. *Reviews on environmental health*, 31(2), 225

¹⁴Zulkipli, S. et al (2021). A review of mercury pathological effects on organs specific of fishes. *Environmental Pollutants and Bioavailability*, 33(1), 76-87.

¹⁵Paz-y-Miño, et al (2008). Monitoring of DNA damage in individuals exposed to petroleum hydrocarbons in Ecuador. *Annals of the New York Academy of Sciences*, 1140(1), 121-128.

Ecuadorian Amazon have been the victims of countless spills and the irresponsible waste management practices of the companies extracting oil in the region.¹⁶

Due to various health predicaments of people living within oil and gas producing areas, there has been some concerted efforts globally to minimize the damages originating from the activities of oil and gas to the surrounding human populations. For instance, there has been formulation of legal documents like the Montreal Protocol Convention of 1987 which is an international treaty designed with an overall objective of protecting the ozone layer by phasing out the production of numerous substances that are responsible for ozone depletion, the Basel Convention of 1992 on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, the Convention on Biological Diversity of 1993.

Some of these legal frameworks dictate the practice of certain international principles as far as environment and human health protection are concerned: for instance, the principles of environmental impact assessment and polluter pay principles. However, in spite of the various intervention measures taken to mitigate the adverse effects of oil and gas production on the health of communities settled within oil fields, there is a colossal amount of evidence pointing towards health concerns of communities living within the vicinity of oil production areas as seen above. As such this study focused on examining the efficacy of the established legislative framework on health safeguards of Ugandans, in particular the communities living in the Albertine Graben where Uganda's oil and gas activities are highly anticipated to take place.

1.2 Statement of the Problem

The fundamental focus of sustainable development goals, among other things, is to ensure that the right to a clean, safe, and healthy environment is promoted.¹⁷ In the context of this study, it means that oil and gas production processes must be professionally and carefully undertaken to such an extent that the environment is ably preserved and protected from the adverse effects of oil and gas activities.

¹⁶Pearson, Z. (2010). *Environmental security in the Ecuadorian Amazon: Waorani, oil and environment* (Doctoral dissertation, The Ohio State University).

¹⁷ United Nations Department of Economic and Social Affairs, <https://sdgs.un.org/goals>

Since the discovery of oil and gas, Uganda has formulated several legislations with the view to ensure that the health of the communities in oil-producing areas is not tampered with; for instance, Article 39¹⁸ provides for the right to a clean and healthy environment, further, the national oil policy¹⁹ guarantees that oil and gas activities are to be undertaken in a manner that conserves the environment and biodiversity of the communities.

In spite of the legislative measures put in place, analysis of water samples from Lake Albert in the Albertine Graben revealed the presence of major contaminants arising from crude oil and drilling fluid used in oil exploration and production.²⁰ Further, media reports pointed out that members from five villages neighboring the oil District of Bullisa petitioned the Ministry of Health regarding alleged air pollution generated by construction works from Tilenga oil projects.²¹ With such kind of reports, it remains unclear whether the laws, policies, and institutional structures put in place are comprehensive and relevant enough to protect the environment and health of Ugandans living within the oil-producing areas. As such, this study aimed at analyzing the observation of health rights in the promotion of the oil and gas industry in Uganda.

1.3. Objectives of the Study

1.3.1 General Objective

The overall objective of this study was to carry out a legal analysis of the laws on the observation of health rights in the oil and gas industry in Uganda.

¹⁸ The 1995 Constitution of the Republic of Uganda (As amended)

¹⁹ The Uganda National Oil policy, 2008. Under objective 5.3.9; The petroleum Act, The Petroleum (Exploration, Development and Production) (Health, Safety and Environment) Regulations, 2016.

²⁰Water and Environment Sector Performance Report 2018, by the Government of Uganda, Ministry of Water and Environment (MoWE), page 115

²¹<https://www.monitor.co.ug/uganda/business/commodities/high-dust-levels-in-tilenga-is-due-to-natural-factors-pau-3788728>, Wednesday, April 20, 2022

1.3.2 Specific Objectives

1. To analyze the effectiveness of the law in protecting the environment from the destructive activities of oil and gas in Uganda.
2. To examine the efficacy of the law in promoting the right to a clean and healthy environment from the adverse effects of oil and gas activities in Uganda
3. To examine the feasibility of the existing institutional framework to protect the environment from the adverse activities of oil and gas in Uganda.
4. To make an evidence-based recommendation following a legal analysis of the observation of the health rights in the oil and gas industry in Uganda

1.4 Research questions

1. How effective are the laws in protecting the environment from the destructive activities of oil and gas in Uganda?
2. What is the efficacy of the law in promoting the right to a clean and healthy environment from the adverse effects of oil and gas activities in Uganda?
3. How feasible is the existing institutional framework in protecting the environment from the adverse activities of oil and gas in Uganda?
4. What evidence-based recommendation can be made following a legal analysis of the observation of the health rights in the oil and gas industry in Uganda

1.5 Scope of the Study

1.5.1 Subject scope

The main theme of the research was to legally analyze the observation of health rights in the oil and gas industry in Uganda. Nevertheless, at specific levels, the researcher aimed to analyze the effectiveness of the law in protecting the environment from the destructive activities of oil and gas, examine the efficacy of the law in promoting the right to a clean and healthy environment from the adverse effects of oil and gas activities in Uganda and to examine the feasibility of the existing institutional framework in protecting the environment from the adverse activities of oil and gas in Uganda.

1.5.2 Geographical Scope

This study covered the entire geographical jurisdiction of Uganda as a State, the researcher chose this coverage because the right to a clean and healthy environment, and generally, the right to health are human rights issues codified under several national,²² regional and international laws, policies and constitutions;²³ that invariably infers that the right to health, and the right to a clean and healthy environment is a national issue.

1.5.3 Temporal Scope

The study covered a period of seven years starting 2016-2023. The researcher chose this time frame for two main reasons. Firstly, during the chosen time frame several laws and policies relating to the management of oil and gas in Uganda were already promulgated by the Parliament of the Republic of Uganda. Secondly, during this same period, the local communities in the Albertine Graben from where most oil wells are found have already experienced and reported some kind of negative effects arising from the initial preparatory stages of oil production.²⁴

1.6 Significance of the Study

This study is important in the following ways;

The study has contributed to the body of knowledge by producing additional empirical knowledge on the subject matter, thus filling in the gap in knowledge regarding the observation of health rights in the oil and gas industry in Uganda.

²² Article 39 of the 1995 Constitution of the republic of Uganda.

²³Mulumba, M., London, L., Nantaba, J., &Ngwen, C. (2018). Using health committees to promote community participation as a social determinant of the right to health: lessons from Uganda and South Africa. *Health and human rights*, 20(2), 11.

²⁴Water and Environment Sector Performance Report 2018, by the Government of Uganda, Ministry of Water and Environment (MoWE). Refere to page 115

The researcher shall share the study findings with the relevant government agencies, with the sole purpose that the study findings may be used to inform policy decision making thus improving the quality of service delivery.

The researcher hopes that the research findings will aid the petroleum authorities and all other line ministries in taking appropriate steps to safeguard the lives of the communities living in oil producing areas of Uganda.

The researcher believes the study is of great relevance to members of parliament as it identified the loopholes in the laws governing petroleum exploration and the right to a clean and safe environment.

1.7 Justification of the study

The 1995 Constitution of the Republic of Uganda under Article 39 provides for the right to a clean and healthy environment, and Article 22 provides for the right to life, and several other enabling international, regional and national legislation provides for the same. In regard to the national laws, the National Oil and Gas Policy²⁵ under objective 7.1.1 imposes a responsibility on the State to establish and implement the policy; develop relevant legislation; and organize the State's petroleum administration in such a way that the resource can be meaningfully extracted without destroying the environment and livelihood.

Scholarly evidence from the literature review in other oil producing areas suggests there are adverse impacts of oil and gas production on the environment and public health at large. In this regard, a study in Uganda disclosed that due to the oil and gas activities so far undertaken, the surrounding communities have reported and experienced²⁶ decrease of food safety; limitations on access to fishing, firewood and herbs for cooking and medicinal purposes; inadequate compensation; land grabbing; prostitution;

²⁵ The national oil and gas policy, February 2008, ministry of energy and mineral development

²⁶Ogwang, T., Vanclay, F., & van den Assem, A. (2018). Impacts of the oil boom on the lives of people living in the Albertine Graben region of Uganda. *The Extractive Industries and Society*, 5(1), 98-103.

environmental degradation.²⁷ As such this study aimed at performing a legal analysis of the observation of health rights in the oil and gas industry in Uganda.

1.8 Literature Review

The scholarly literature reviewed below focused on the conceptual meaning associated with health consequences arising from the activities of oil and gas production to the immediate community members within the oil and gas production areas. The main scientific literature reviewed is entitled “*Impact of upstream oil extraction and environmental public health: a review of the evidence*”.²⁸ This literature contains a combination of scientific publications that focused on public health concerns and the implications of the activities of oil and gas production process.

The main literature under review also revealed a strong association between the different types of cancer among people living within oil and gas extraction areas. This is engineered due to the various chemicals that are released in the air, water streams and soil, and subsequently, humans come in contact with them through farming, fishing and inhalation of air in the atmosphere. Further scholarly evidence in Nigeria's oil producing areas disclosed that prevalent air pollution-related morbidities such as breathing difficulties, bronchitis, aggravation of asthma, and cardio-respiratory disorders among residents in oil producing areas were common.²⁹ Other studies disclosed that pollution from oil production activities were related to effects like impairment of cognitive and behavioral development, respiratory illness, and other chronic diseases.³⁰

In the main literature under review, it is pointed out that multiple acute and chronic non-cancer health effects are elevated in communities living near oil extraction. For instance, the study exposed that Mexican communities that lived close to an oil drilling

²⁷Water and Environment Sector Performance Report 2018, by the Government of Uganda, Ministry of Water and Environment (MoWE), page 115

²⁸Johnston, J. E., Lim, E., &Roh, H. (2019). Impact of upstream oil extraction and environmental public health: A review of the evidence. *Science of the Total Environment*, 657, 187-199.

²⁹Nnaemeka, A. N. (2020). Environmental pollution and associated health hazards to host communities (Case study: Niger delta region of Nigeria). *Central Asian Journal of Environmental Science and Technology Innovation*, 1(1), 30-42.

³⁰Perera, F. (2018). Pollution from fossil-fuel combustion is the leading environmental threat to global pediatric health and equity: Solutions exist. *International journal of environmental research and public health*, 15(1), 16.

site or an oil waste pit reported outstanding incidences of rheumatic disease, neurological and respiratory symptoms, and cardiovascular problems compared to a community farther away.³¹ Furthermore, women living near oil wells in Ecuador identified a higher prevalence of skin fungi, nasal irritation, and throat irritation.³²

One of the disadvantages associated with oil and gas production is that the oil drill site operate for decades and the extraction process continuously produces emissions of multiple health-hazardous air pollutants which are not only toxic but harmful to the environment and human health.³³ In a soil content analysis from an oil field, heavy metals were found to be significantly higher in nearby old oil wells that were developed more than 40 years prior. The same effect was found to be true with water bodies as rivers near oil wells measured eminent levels of chloride and salinity at amounts exceeding drinking water regulations.³⁴ Other studies³⁵ also indicated that petroleum hydrocarbons contaminate both surface and groundwater which is a notable environmental and human health problem in the oil producing communities.

1.9 Conclusion

The evidence from the literature review above conclusively suggests that oil and gas production is a process that lasts for a long period of time, and invariably it comes with serious and undesirable consequences that not only impact on the environment but also human health; some of the most notable absurd effects are linked to human health via polluted air, soil, water and plants that humans consume as food for survival. As such, it will take a concerted effort from every stakeholder; international community, government, NGO and civil society to participate and contribute to drafting relevant

³¹Dahlgren, J., Takhar, H., Anderson-Mahoney, P., Kotlerman, J., Tarr, J., & Warshaw, R. (2007). Cluster of systemic lupus erythematosus (SLE) associated with an oil field waste site: a cross sectional study. *Environmental Health*, 6(1), 1-15.

³²Kuppusamy, S., Maddela, N. R., Megharaj, M., & Venkateswarlu, K. (2020). Impact of total petroleum hydrocarbons on human health. In *Total petroleum hydrocarbons* (pp. 139-165). Springer, Cham.

³³Stringfellow, W. T., Camarillo, M. K., Domen, J. K., Sandelin, W. L., Varadharajan, C., Jordan, P. D., ... & Birkholzer, J. T. (2017). Identifying chemicals of concern in hydraulic fracturing fluids used for oil production. *Environmental pollution*, 220, 413-420.

³⁴Sen, D. R., Kaminski, J., Barnitz, R. A., Kurachi, M., Gerdemann, U., Yates, K. B., ... & Haining, W. N. (2016). The epigenetic landscape of T cell exhaustion. *Science*, 354(6316), 1165-1169.

³⁵Ite, A. E., Harry, T. A., Obadimu, C. O., Asuaiko, E. R., & Inim, I. J. (2018). Petroleum hydrocarbons contamination of surface water and groundwater in the Niger Delta region of Nigeria. *Journal of Environment Pollution and Human Health*, 6(2), 51-61.

laws and policies but also implementing the same without compromise. By so doing, the environment and public health concerns will be saved from the effects of oil and gas activities, especially within the areas of production.

Whereas the literature review above highlights the health and environmental impacts of oil and gas production, it lacks a comprehensive legal analysis specific to Uganda's regulatory and institutional framework. It does not adequately address the effectiveness and aspects of law Ugandan laws and policies enforcement in protecting health rights. This is the gap that this study sought to fill by examining the legal provisions, their practical implementation, and institutional responses, offering evidence-based recommendations tailored to Uganda's oil-producing regions to ensure protection of community health and environmental rights.

1.10 Study Methodology

1.11 Research Method

The study adopted a qualitative research method. This method was chosen because the study involved collecting and analyzing qualitative data using a systematic review technique; sources of data included published literature, existing laws and policies related to the right to health from oil and gas activities. The justification for adopting this study method is that it comprehensively facilitates the collection of relevant data with the aid of unrestricted data collection tools.

1.12 Research design

The study adopted a doctrinal legal research design whose techniques involve undertaking a systematic review of legislation governing a particular legal matter of interest. ³⁶This design enabled the researcher to carry out a critical analysis of the relationship between the laws relating to oil and gas activities and their practice in action concerning environmental protection and human rights observation while examining areas of loopholes in the legal regime. The nature of a doctrinal legal

³⁶ Ibid.

research design also enabled the review and analysis of scientific non-legal scholarly literature to provide supportive evidence to inform the study. Furthermore, the dual role of the Researcher, both as a Judicial Officer and the Researcher offered a unique vantage point. It offered the Researcher a vantage point from which to interpret how institutional constraints, legal lacunae, and novelty of the oil and gas industry in Uganda, will affect the observation of health rights of persons, living within the oil and gas production areas.

The limitations of the research design, however, was the absence of Ugandan Court jurisprudence or literature, regarding observation of health rights, of persons living in the oil and gas production areas. This limited the Researcher's ability to analyze and compare the interpretation and enforcement of the law, in Uganda vis à vis other oil producing countries under comparison. Another methodological constraint was the absence of Parliamentary hansards, which limited third-party objectivity and restricted the availability of comprehensive information for scholarly scrutiny. It must also be acknowledged that the oil and gas industry remains relatively novel in Uganda, and the rest of East Africa. A number of State Agencies and Justice Sector Stakeholders have limited understanding of the scope, purpose, and operational mechanisms to be employed, in enforcement of the rights of victims affected by oil and gas activities.

The Researcher therefore observed the likelihood of many instances, and practices to be employed, in observing health rights of persons living in the oil and gas production areas, as likely to be ad hoc and lacking the formal structure and consistency necessary for enforcement of the rights of these persons. This is due to the novelty of the sector and its problems, coupled with the overlapping institutional roles and limited knowledge of the legal framework.

1.13 Data collection sources

The researcher collected primary data by systematically reviewing the relevant legislation on issues concerning the health of community members within the oil producing areas. The researcher also collected secondary data by systematically reviewing scientific scholarly literature published in authoritative sources like; journals, institutional reports, textbooks and periodicals. As a Magistrate in the Judiciary of Uganda since October 2021, the researcher occupies a position that influences access to Court room jurisprudence from other jurisdictions, regarding enforcement of the health rights of persons living in the vicinity of petroleum production areas.

1.14 Research

The Researcher's involvement in drafting legal opinions on health rights matters provided further access to relevant jurisprudence, procedural guidelines, and doctrinal materials within the field of oil and gas environmental and safety rights.

1.15 Data Analysis

The researcher used the content analysis technique to validly analyze the various data that was collected with the aid of systematic literature review methods. Content analysis is a research data analysis technique used to make replicable and valid inferences by coding and interpreting textual material.³⁷ The researcher further used a thematic data analysis technique which involved reading through a data set, for instance, in this study the various published materials and the laws and thereafter identifying patterns and their meanings across the data.³⁸ The two data analysis techniques played a key role in helping the researcher answer the research questions credibly. As such, it enabled direct thematic analysis across different jurisprudence on the degree of protection accorded to people affected by oil and gas activities. The researcher also developed keen analytical insight through extended exposure to Court decisions, legal writings and analysis of the laws and the jurisprudence in the area of health rights of persons living in the oil and gas production areas. The researcher also employed in this study, reflexive strategies to critically engage with the Researcher's professional assumptions and normative leanings. These included memo-writing, critical self-examination, and sustained awareness of how personal values and legal training may shape the interpretation of data. The Researcher's role within the Judiciary also introduced the challenge of managing role duality and maintaining ethical boundaries. This was addressed by maintaining impartiality in the interpretation of the various legal and scientific data. The neutrality expected of Judicial Officers was thus mirrored in the research approach. Thus, promoting a balanced analysis, of the effectiveness of the existing legal and institutional frameworks, in protecting the health

³⁷Prasad, B. D. (2019). *Qualitative content analysis: Why is it still a path less taken?* SSOAR-Social Science Open Access Repository.

³⁸Joffe, H. (2012). Thematic analysis. *Qualitative research methods in mental health and psychotherapy: A guide for students and practitioners*, 1, 210-223.

rights of people living within the oil and gas production areas. Through acknowledging and managing the tensions inherent in this dual role, the research contributes a contextually nuanced and ethically sound analysis of the legal framework enacted with the purpose of promoting health rights of persons living within the oil and gas production areas

1.16 Research Ethics

The researcher endeavoured to follow the relevant research ethical principles as indicated below; firstly, the researcher referenced and cited all published information that was used in the study to avoid plagiarism. Secondly, the researcher worked with the appointed university supervisor throughout the research process. Thirdly, all university rules concerning research ethics and procedures were observed. However, the proximity to jurisprudential materials and court decisions from other jurisdictions, also necessitated a high degree of reflexivity to mitigate potential bias and over-identification with the institution.

1.17 Chapter synopsis

Chapter One: This introductory chapter provides a general introduction to the research, in principle it contains vital sections to the study including but not limited to the background to the study, problem statement, research objectives and the corresponding research questions, scope of the study, the study methodologies and a literature review.

Chapter Two: This chapter contains elaborate information about the non-legal aspects of the study. The non-legal aspects are collected from reputable scientific journal publications on issues concerning the right to a clean and healthy environment, the effects of oil and gas activities on the environment and human health.

Chapter Three: In this chapter, the researcher analyzed the law relating to environmental protection and human health arising from the activities of oil and gas industry in Uganda. This chapter focused on ascertaining the comprehensiveness and relevance of the existing laws in promoting the right to a clean and healthy environment

from the activities of oil and gas pollution and the health rights of the citizens of Uganda.

Chapter Four: This chapter focused on performing a comparative analysis of how the identified countries; Nigeria and Norway performed in terms of observing health rights in their legal systems as far as activities of the oil and gas industry is concerned. The purpose of this chapter is to figure out how Uganda can draw some lessons from the experience of other countries.

Chapter Five: This final chapter contains a summary of the study findings in accordance with the specific objectives and makes conclusions and related recommendations in relation to the key study findings.

CHAPTER TWO

NON-LEGAL ASPECTS

2.1 Introduction

One of the vital components in ensuring the completion of a scientific legal research is the inclusion of non-legal scholarly evidence. It has been acknowledged that non legal literatures profoundly contribute towards fulfilling the goal of doctrinal legal research.³⁹ As a result, this chapter focused on reviewing scholarly non legal literature from various reputable journal publications and other related authoritative sources on

³⁹MD, P. (2019). Legal Research-Descriptive Analysis on Doctrinal Methodology. *International Journal of Management, Technology and Social Sciences (IJMTS)*, 4(2), 95-103.

issues pertaining to the adverse effects of oil and gas production on to the environment and human health.

2.2 The Right to Clean and Healthy Environment

The environment is an inseparable part of human existence because without it there is no life. In fact, for meaningful and sustainable human survival to be achieved, the human being must thrive in a clean and healthy environment. This exhaustively explains why having a clean and healthy environment over the years became a human right matter. It is important to recognize the fact that human life and the environment are mutually dependent; as such a clean and healthy environment is not just a right but a necessity for the realization of several other human rights including but not limited to the rights to health, food, and water.⁴⁰

Over the years, different organizations at the global, international and national levels have put up a spirited fight to preserve and protect the environment from destructive human activities. This is because several political, economic and social human activities have destroyed the environment for decades.⁴¹ However, despite the numerous international agreements, national laws and policies, overall the environmental condition globally has remained progressively in a deteriorating trajectory.⁴² It is not surprising therefore, that the contemporary manifestation of global environmental predicaments like climate change, destruction of biodiversity, water and air pollution expresses the major dangers to human health.

Several scholarly evidence has associated oil and gas production activities as a crucial factor in inducing water and air pollution, destruction of plants and animals species.⁴³ As a result, there is a pressing need to invent practical means to boost environmental protection, especially from the destructive activities of oil and gas. As a progressive

⁴⁰Cima, E. (2022). The right to a healthy environment: Reconceptualizing human rights in the face of climate change. *Review of European, Comparative & International Environmental Law*, 31(1), 38-49.

⁴¹ the environment from destruction

⁴²Glicksman, R. L., Buzbee, W. W., Mandelker, D. R., Hammond, E., & Camacho, A. (2023). *Environmental protection: law and policy*. Aspen Publishing.

⁴³Sommer, B., Fowler, A. M., Macreadie, P. I., Palandro, D. A., Aziz, A. C., & Booth, D. J. (2019). Decommissioning of offshore oil and gas structures—Environmental opportunities and challenges. *Science of the total environment*, 658, 973-981.

vital step, the United Nation General Assembly (UNGA)⁴⁴ recognized the need to have a clean, healthy and sustainable environment as a human right to achieve a sustained development agenda. In July 2022, UNGA adopted a landmark resolution recognizing the human right to a healthy environment.⁴⁵

Even though there is no single universally agreed definition of the right to a healthy environment, common practice and some scholarly evidence implicitly suggest that some of the substantive attributes of the right to a healthy environment include; clean air, safe water, non-toxic land, healthy biodiversity and ecosystems. To achieve the enlisted elements of a healthy environment above, a human right-based approach is of essence. Accordingly, a human rights-based approach to environmental protection is a critical tool for empowering those impacted by environmental activities and enhancing accountability for those making decisions and undertaking environmental activities.⁴⁶

2.3 Effects of Oil and Gas activities on the Environment

There is no doubt that the activities of oil and gas negatively affect the environment in potentially several ways. In the preceding sections, the researcher analyzed the effects of oil and gas activities on the environment and human health in particular

2.3.1 Adverse effects on water bodies

Throughout the entire stages of oil and gas production process, various kinds of fluids are discharged into the environment: Some are discharged as pure liquid, or solid and others in gaseous forms. The discharge usually comes as a result of drilling activities which subsequently produce fluids such as oil, water and other chemicals. Also, some chemicals that are injected to enhance the separation of oil from water end up in the

⁴⁴ The UNGA is the principal policy-making body of the United Nations

⁴⁵ UNGA, The human right to a clean, healthy and sustainable environment, A/RES/76/300 (28 July 2022).

⁴⁶Odote, C. (2020). Human rights-based approach to environmental protection: Kenyan, South African and Nigerian constitutional architecture and experience. *Human Rights and the Environment under African Union Law*, 381-414.

environment. Some of the well-known environmental effects arising from inappropriately disposed oil and gas waste products include; land degradation, water and air pollution. Outrightly, the above-mentioned effects have a lasting adverse effect on the community's sources of livelihood.⁴⁷ It therefore puzzles one's ability to question whether the laws and policies concerning environmental protection in the countries and communities experiencing such an undesirable environmental outcome functions.

The amount of water injected into rocks that instantly returns to the surface is referred to as produced water, and the produced water consists of naturally occurring salts, radioactive materials, heavy metals, and other compounds. It is well known around the world that oil fields are estimated to be responsible for more than 60% of produced water.⁴⁸ And worse of all, produced water contains hazardous pollutants of both organic and inorganic materials,⁴⁹ scholarly evidence indicates that in Nigeria alone an estimated one billion barrels of produced water are believed to be discharged annually during oil and gas production processes.⁵⁰ To make matters worse, evidence indicates that produced water in the oil and gas production process increases with the age of the reservoir,⁵¹ meaning the longer it takes the more adverse effects is realized from its existence.

In some situations, water bodies get polluted from oil and gas activities due to oil spills that occur accidentally or negligently. Therefore, the oil spills destroy not only the physical but also the chemical and biological components of the environment. Usually, the oil spill occurs in two common ways; water bodies and on-land oil spills, some studies have revealed that on-land oil spills usually end up in water bodies through runoff.⁵² At a global scale, studies have indicated that oil spills into the aquatic

⁴⁷Ukaogo, P. O., Ewuzie, U., & Onwuka, C. V. (2020). Environmental pollution: causes, effects, and the remedies. In *Microorganisms for sustainable environment and health* (pp. 419-429). Elsevier.

⁴⁸Fakhru'l-Razi, A., Pendashteh, A., Abdullah, L. C., & Abidin, Z. Z. (2009). Review of technologies for oil and gas produced water treatment. *Journal of hazardous materials*, 170(2-3), 530-551.

⁴⁹Neff, J., Lee, K., & DeBlois, E. M. (2011). Produced water: overview of composition, fates, and effects. *Produced water: Environmental risks and advances in mitigation technologies*, 3-54.

⁵⁰Isehunwa, S. O., & Onovae, S. (2011). Evaluation of produced water discharge in the Niger-Delta. *ARP Journal of Engineering and Applied Sciences*, 6(8), 66-72.

⁵¹Nasiri, M., & Jafari, I. (2017). Produced water from oil-gas plants: A short review on challenges and opportunities. *Periodica Polytechnica Chemical Engineering*, 61(2), 73-81.

⁵²Müller, A., Österlund, H., Marsalek, J., & Viklander, M. (2020). The pollution conveyed by urban runoff: A review of sources. *Science of the Total Environment*, 709, 136125.

environment account for not less than 10% of the total estimated oil spills.⁵³ Despite the small percentage, it is big enough to cause huge damage both directly and indirectly to the aquatic life and the entire ecosystem.

A historic global record on the destruction of oil and gas was witnessed in the Gulf of Mexico in 2010 where 500,000 tonnes of oil was released to the Gulf and subsequently and adversely destroyed the entire ecosystem of the coast.⁵⁴ Conversely, the largest oil spill in Nigeria was offshore in which an estimated 200,000 barrels of oil spilled out into the Atlantic Ocean from an oil industry facility that damaged over 340 hectares of mangrove.⁵⁵ Within the East African region, evidence indicates that Kenya witnessed a serious oil spill incidence that occurred in 2012 at Kipevu diesel power station, where at least 10,000 liters of oil was released, and it spread into the sea, soaking beaches and killing animals near the port of Mombasa.⁵⁶

2.3.2 Adverse effects on Atmospheric Air

According to WHO air quality standard, at least 95% of the entire global population does not reside in a clean and conducive environment.⁵⁷ It should be noted that the cause of environmental and air pollution is multifaceted, and by far human related activities form the principal cause of environmental pollution. In this section, the researcher focuses on the contribution of oil and gas industry in polluting the environment.

It must be recognized that the oil and gas industry inherently involves a wide range of operational activities including but not limited to; exploration, natural gas gathering, processing facilities, storage and distribution. In this extensive process, the end goal is to convert crude oil into a vast array of products. The reality is that the whole processes of oil and gas production require a wide range of operations that subsequently discharge

⁵³Zhang, B., Matchinski, E. J., Chen, B., Ye, X., Jing, L., & Lee, K. (2019). Marine oil spills—Oil pollution, sources and effects. In *World seas: an environmental evaluation* (pp. 391-406). Academic Press.

⁵⁴Lincoln, S. A., Radović, J. R., Gracia, A., Jaggi, A., Oldenburg, T. B., Larter, S. R., & Freeman, K. H. (2020). Molecular legacy of the 1979 Ixtoc 1 oil spill in deep-sea sediments of the southern Gulf of Mexico. *Deep Oil Spills: Facts, Fate, and Effects*, 312-327.

⁵⁵Ewulolum, B. E., Okaphor, E., & Okoli, N. E. O. (2020). An Appraisal of the Impact of the National Oil Spill Detection and Response Agency on Environmental Pollution in Nigeria. *IJOCLLEP*, 2, 58.

⁵⁶Mulaku, V. A. (2019). *Management of oil spillages from inland oil terminals in industrial area of Nairobi City County, Kenya* (Doctoral dissertation, University of Nairobi).

⁵⁷Prüss-Üstün, A., Wolf, J., & Neira, M. (2016). *Preventing disease through healthy environments: a global assessment of the burden of disease from environmental risks*. World Health Organization.

a range of pollutants into the air, land and water. Other than oil production process, the procedure undergoes a lot of fuel energy that also contributes to air pollution.⁵⁸ Some scholarly studies have confirmed that flaring of unprocessed natural gas is one of the several oilfield processes that negatively affect air quality, as well as increasing carbon dioxide emissions.⁵⁹ In a nutshell, air pollution from oil and gas plants have extensively contributed to an array of public health issues, such as increasing the rate of certain cardiovascular (heart) and pulmonary (lung) diseases, cancers, and strokes.⁶⁰

The Oil and gas production process also releases large quantities of greenhouse gases, especially methane and carbon dioxide. One study finding disclosed that methane is an intoxicating greenhouse gas with a global warming potential over 25 times compared to carbon dioxide.⁶¹ Additionally, the above study revealed that methane and other oil production related gases have more impact on local air quality, especially where they are highly concentrated. It was demonstrated that pollutants from the U.S. oil and gas industry contributed to 7,500 excess deaths, 410,000 asthma attacks, and 2,200 new cases of childhood asthma across the U.S. in 2016.⁶² The above study further disclosed that oil and gas production was responsible for \$77 billion in annual health costs. Most of all, the above health concerns were reportedly concentrated in areas with substantial oil and gas production though the effects extended to far reaching places as well.

2.4 Effects of Oil and Gas activities on Human health

Apart from the destruction to the environment, oil and gas activities have direct negative health effects on human life. Some scholars have observed that oil exploration and oil spills have adverse impacts on the surrounding environments, causing both short

⁵⁸Van, T. C., Ramirez, J., Rainey, T., Ristovski, Z., & Brown, R. J. (2019). Global impacts of recent IMO regulations on marine fuel oil refining processes and ship emissions. *Transportation Research Part D: Transport and Environment*, 70, 123-134.

⁵⁹Ogolo, N. A. & Onyekonwu, M. O. (2022). Sources and effects of environmental pollution from oil and gas industrial operations. *Arabian Journal of Chemical and Environmental Research*, 9(01), 98-121.

⁶⁰Al-Delaimy, W., Ramanathan, V., & Sánchez Sorondo, M. (2020). *Health of people, health of planet and our responsibility: Climate change, air pollution and health* (p. 419). Springer Nature.

⁶¹Thakur, S., & Solanki, H. (2022). Role of Methane in Climate Change and Options for Mitigation-A Brief Review. *International Association of Biologicals and Computational Digest*, 1(2), 275-281.

⁶²Buonocore, J. J., Reka, S., Yang, D., Chang, C., Roy, A., Thompson, T., ... & Arunachalam, S. (2023). Air pollution and health impacts of oil & gas production in the United States. *Environmental Research: Health*, 1(2)

and long-term hazards.⁶³ One of the chemical substances released to water bodies from the activities of oil and gas is barium, it is released mostly as a result of rock drilling and the erosion of worn rocks. Studies have suggested that contentious uptake of barium compounds is associated with the following experiences to human life; vomiting, abdominal cramps, diarrhea, difficulties in breathing, increased or decreased blood pressure, numbness around the face and muscle weakness.⁶⁴

Scholarly evidence in Ecuador disclosed that there were probable health impacts due to exposure to upstream oil extraction, among the ill health impacts reported by the local communities included cancer, liver damage, immunodeficiency, and neurological symptoms.⁶⁵ Similarly, another study among local women living near oil wells also in Ecuador identified a higher prevalence of skin fungi, nasal irritation, and throat irritation.⁶⁶ The above findings are consistent with scholarly evidence elsewhere, for instance in Nigeria a significantly higher rate of neurological symptoms, including headache, dizziness, eye and skin irritation, and anemia were observed among community members living within oil production sites.⁶⁷

The effects of oil and gas activities on human health are multifaceted, as some studies have found that persistent exposure to high concentrations of volatile organic compounds arising from the activities of oil and gas production causes central nervous system problems resulting in dizziness, fatigue, and headache.⁶⁸ Evidence from among clean-up workers revealed that the commonest acute effects due to oil spill exposure among clean-up workers were; respiratory, eye and skin symptoms, headache, nausea,

⁶³Ndimele, P. E., Saba, A. O., Ojo, D. O., Ndimele, C. C., Anetekhai, M. A., &Erundu, E. S. (2018). Remediation of crude oil spillage. In *The political ecology of oil and gas activities in the Nigerian aquatic ecosystem* (pp. 369-384). Academic Press.

⁶⁴Samaila, B., &Maidamma, B. Review on Measurement of Heavy Metals and their Health Implications using Atomic Absorption Spectroscopy Technique in Some Parts of Nigeria.

⁶⁵Romano, M. E., Diorio, O. J., & Chamberlin, M. D. (2019). Pollution, Cancer Risk, and Vulnerable Populations. *Cancer and Society: A Multidisciplinary Assessment and Strategies for Action*, 27-38.

⁶⁶Kuppusamy, S., Maddela, N. R., Megharaj, M., Venkateswarlu, K., Kuppusamy, S., Maddela, N. R. &Venkateswarlu, K. (2020). Impact of total petroleum hydrocarbons on human health. *Total Petroleum Hydrocarbons: Environmental Fate, Toxicity, and Remediation*, 139-165.

⁶⁷Kponee, K. Z., Chiger, A., Kakulu, I. I., Vorhees, D., &Heiger-Bernays, W. (2015). Petroleum contaminated water and health symptoms: a cross-sectional pilot study in a rural Nigerian community. *Environmental Health*, 14, 1-8.

⁶⁸Anejionu, O. C.&Nri-ezedi, C. J. (2015). Hydrocarbon pollution in the Niger Delta: Geographies of impacts and appraisal of lapses in extant legal framework. *Resources Policy*, 45, 65-77.

dizziness and fatigue.⁶⁹ In regards to the above findings, it is quite evident that frequent and consistent exposure to polluted environments from the activities of oil and gas invariably leads to chronic health situations.

2.5 Conclusion

The colossal amount of evidence above clearly points to the fact that despite the economic value of oil and gas deposits, the entire oil and gas production process is very detrimental to the environment. The observable gap in knowledge evidenced through the literature above is to the effect that practice of the law regarding the protection of the water bodies and air, from the adverse effects of oil and gas activities, is very much not attended to. Above all, the bad practices of oil and gas production present adverse negative consequences on human health. Such an outcome calls for concerted efforts by all stakeholders from global, international and local levels to proactively deal with the issue of environmental degradation from the effect of oil and gas activities.

CHAPTER THREE

LEGAL ASPECTS OF THE STUDY

3.1 Introduction

In this chapter, the researcher analyzed the legal aspects relating to environmental and human health protection arising from the activities of the oil and gas industry in Uganda. The analysis focused on unearthing the comprehensiveness and relevance of

⁶⁹Isidiho, A. O., Burhan, N. A. S., Sabran, M. S., Assim, M. I. S. A., & Talib, A. T. (2020). Assessing the Effects of Oil Spill on Clean-up Workers and Communities' Participation in Imo State Nigeria. *Journal of Contemporary Issues and Thought*, 10, 10-24.

the existing legal framework in promoting the right to a clean and healthy environment from the activities of oil and gas and the health rights of the citizens of Uganda.

3.2 The Law and Policy on Environmental Management

Since the discovery of oil and gas in Uganda, a series of legal frameworks have been formulated focusing on managing of several issues including the disastrous effect of production on the environment. This is elaborately discussed below;

3.2.1 The 1995 Constitution of the Republic of Uganda (As amended)

The 1995 Constitution noted above and hereinafter referred to as the “Constitution” under its National Objectives and Directive Principles of State Policy XXVII (i) provides that *“the State shall promote sustainable development and public awareness of the need to manage land, air and water resources in a balanced and sustainable manner for the present and future generations.”* The above principle is premised on the fact that utilization of the natural resources should be done wisely to the extent that the future generation can also benefit from it. Further, principle XXVII (iii) is to the effect that *“the State shall promote and implement energy policies that will ensure that people’s basic needs and those of environmental preservation are met.”* The above provision directly appeals to the oil and gas industry whose activities adversely impact on the environment. The above State principle is also linked to the provision of Article 39 of the Constitution which dictates that every Ugandan has a right to a clean and healthy environment. Furthermore, Article 244 of the same Constitution empowered the Parliament to make other enabling legislations for governing the operations of mineral activities with strict regards to the protection of the environment from the mining and production processes the minerals.

3.2.2 The Petroleum (Exploration and Production) Act Cap 150

The provisions of the above Act cater for the control of pollution arising during oil and gas production process as it instructs a licensee to carry out exploration and development operations in a proper, safe and workmanlike manner in accordance with good oil field practices. In addition, section 31 (1) (a) of the Act

above is to the effect that a licensee shall control the flow of waste in the exploration or development area of petroleum or gas. The wisdom in the above-mentioned provision is the control and prevention of all the possible disastrous damage from the waste into the environment. Furthermore, section 31 (1) (f) of the Act above implores a licensee to prevent the pollution of any water body including but not limited to; wells, springs, streams, rivers and lakes by the escape of gaseous petroleum or any byproducts arising as a result of oil and gas activities. However, section 31 (1) (g) deals with a situation where pollution exceeds the legally ascribed threshold and prescribes that in the event pollution from oil and gas activities occurs, the licensee must treat or disperse it in an environmentally acceptable manner.

The Act above also criminalizes certain practices of the licensee, for instance, the provision of section 31 (5) is to the effect that, *“a licensee who contravenes or fails or neglects to comply with a requirement of this section commits an offense and is liable on conviction to a fine not exceeding one hundred million shillings”*. To strengthen the effect of the above provision in practice, the law further provides for additional penalties to be imposed like restoring the environment and compensating the affected persons.

It is quite apparent from the above legal provisions that the desire and willingness to protect the environment from the effects of oil and gas activities is at the forefront. The law caters for environmental prevention, control and management from the adverse effects of oil and gas activities and places a huge responsibility on the project developers to preserve the environment.

3.2.3 The National Environment Act, Cap 181

The National Environment Act stated above repealed, replaced and reformed the law relating to environmental management in Uganda. Its core component relative to the object of this study includes; sustainable management of the environment, management of hazardous chemicals and biodiversity, and dealing with environmental alarms arising from petroleum activities in Uganda.

The Act re-echoes the provision of Art 39 of the Constitution relating to the right to a clean and healthy environment. Under section 3 (1) of the Act, the law recognizes the

right to a decent living environment, and it states, “*every person in Uganda has a right to a clean and healthy environment in accordance with the Constitution and the principles of sustainable development.*” The Act imposes a responsibility of care to everybody to maintain and enhance quality environment by preventing any pollution to it. Conversely, Section 3 (3) of the Act empowers any person to take appropriate actions to protect the environment whenever it is under threat, in part the section states “*a person may, where the right referred to in subsection (1) is threatened as a result of an act or omission by any person which has or is likely to cause harm to human health or the environment, file a civil suit against the person.*” The above provision is critically vital in ensuring that those involved in the business of endangering the environment are fully held accountable.

In an attempt to strengthen the strategies to sustainably manage the environment from any destruction, the Act provides for basic environmental management principles which are provided for under Section 5 (1) of the Act, in effect it states that “*the Authority shall ensure that the principles of environment management set out in subsection (2) are observed, taking into account the finite nature of non-renewable resources and the productivity of the available renewable resources.*” Some of the applicable principles to this study include ensuring that activities relating to extractive processes of natural resources like oil and gas are carried out professionally and sustainably, restoration of damaged ecosystems and the natural environment should be considered as a viable plan to sustainably manage the environment.

One of the core objectives in this study focuses on the aspect of environmental protection from the activities of oil and gas emissions and other substances into the air. Specifically, section 78(1) of the Act states that “*a person shall not cause pollution or initiate anything that may occasion a risk of pollution, except in accordance with this Act and any other applicable law.*” The above general proposition was intended to promote avoiding the pollution of the environment, however, there are situations where total or minimal pollution cannot be avoided. In the premise, section 78 (2) of the above Act is in the refuge of environmental protection in the event circumstances do not permit total avoidance, the above section is to the effect that “*any person whose planned project undertaking reasonably presents possibilities of causing pollution to the environment, such person must put in place appropriate measures to deal with the*

occurrence of the pollution.” Despite the fact that in oil and gas production, gas flaring and venting are permitted to some degree, section 78 (3) of the Act dictates that the person who vents or flares shall take measures to minimize the pollution caused by the flaring or venting.

As a matter of fact, the impracticality of undertaking oil and gas production activities without causing any damage to the environment, the law directs that the potential polluter should formally apply to seek permission regarding the pollution they intend to emit. In light of the above, section 82 (1) of the Act provides that, *“an application for a pollution control license to carry on an activity which is likely to pollute land, water or air in excess of the standards or guidelines prescribed or issued under this Act shall be made to the committee in a manner prescribed by regulations.”* Additionally, the law directs that the polluter must devise an appropriate measure (s) to deal with environmental pollution arising from their activities. In this regard, section 78(2) of the Act in part provides that, *“where pollution has occurred contrary to this Act or any other applicable law, environmental standards, the person responsible for the pollution shall take the necessary action to stop further pollution, minimize the impacts of the pollution on human health and the environment.”* Extra measures include notifying the concerned authority about the pollution, taking the necessary steps to mitigate any further damage arising from the pollution, and cleaning up with the view to restore the environment as near as possible to its original state.

In the event of excessive pollution or damage to the environment, the law places the duty on the polluter, section 80 of the Act states that *“a person who pollutes the environment contrary to this Act or any other applicable law is strictly liable for any damage caused to human health or the environment, regardless of fault.”* On top of bearing the liability, the polluter is mandated to notify the concerned authority in a form prescribed under section 90 (1) of the Act, it thus provides, *“in the event of acute pollution or risk of acute pollution, the person responsible shall immediately notify the nearest police, the Authority and the relevant lead agency in the manner prescribed by the Authority.”* The above provision also acts as a precautionary measure to the polluters to ensure that they act professionally and cautiously when polluting the environment.

The general environmental management principle centers on the prevention of damage to the environment, however in the event of damage, the extent must be minimized and restoration mechanisms put in place for extreme damage. This largely explains why an initial impact assessment is an important aspect of environmental protection. Conversely, section 114 (1) of the Act is to the effect that, *“the Authority may require a developer to undertake an environmental risk assessment as part of the process of environmental and social impact assessment.”* As well the law prescribes how this assessment is to be done, this is captured under section 114 (2) of the Act.

The above Act also empowers the concerned authorities to issue an order directing environmental restoration to any person whose activities cause extreme pollution against the acceptable threshold as provided for under the law. Section 130 (2) of the Act states, *“an environmental restoration order issued under subsection (1) may contain a prohibition order and the person on whom it is served shall be required, without need for further notice to immediately prevent the commencement of or to cease any activity that is deleterious to human health or the environment.”* Other than cessation of the dangerous activities polluting the environment, the authority is empowered to make such other orders like restoration of the damaged environment and compensating the affected individuals where necessary.

The Act also makes violation of environmental management principles as prescribed under the law a serious crime that attracts heavy penalties, this is catered for under section 163(a) of the Act in part states that, *“any person who engages in activities that result in or aggravate pollution in contravention of this Act; commits an offence and is liable, on conviction, to a fine not exceeding fifty thousand currency points or imprisonment not exceeding fifteen years, or both.”* In addition to the above, the law empowers the court law to make any further and stringent orders on top of what the law has prescribed.

3.2.4 National Environment (Waste Management) Regulations, 2020. SI No 49/2020

This Regulation was enacted pursuant to the provisions of the Petroleum (Exploration, development and Production) Act 2013 and the Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act 2013. The above statutory instrument was

formulated to operationalize the provision of the National Environment Act, CAP 153. It contains detailed provisions dealing with waste and environmental management.

The regulation has stringent provisions about compliance with environmental principles, specifically, regulation 4 provides that *“a person who generates waste, a waste handler or a product steward shall, in compliance with the environmental principles set out in the Act; apply measures in the management of waste to prevent harm to human health and ensure safety of human beings.”* In other words, the person who generates waste must ensure that waste is managed in the most appropriate manner using the best available technologies in accordance with environmental management principles.

The regulation concerns itself with petroleum waste management, for instance, regulation 13 provides for the application of license to manage petroleum waste. Additionally, it sets down the conditions for the grant of the license in regulation 17 by noting in sub-regulation (3) that *“the National Environmental Authority may, where it deems necessary to protect public health or environment, vary the conditions of the license.”* Furthermore, the provision of regulation 37 (ii) (e) is to the effect that a licensed petroleum waste handler shall conduct quarterly monitoring of air, water and soil quality in the surrounding environment to establish the levels of contaminants arising from the landfill operations and submit the monitoring report to NEMA.

It is the requirement of the law under regulation 11 that any person who produces dangerous waste must form, preserve and implement an environment management system to ensure compliance with the requirements of all the relevant and applicable laws. In like terms, regulation 48 (1) provides that, *“the waste handler managing hazardous waste shall obtain the necessary licenses and permits for the proper management of the waste in accordance with the Act and all applicable laws.”* One of the aspects of proper waste management is proper collection, storage, disposal and treatment of waste. In this regard, regulation 60 (1) provides that *“the waste handler shall treat or dispose waste in accordance with the treatment or disposal methods and environmental standards approved by the Authority . . . “*

The regulation further provides for proper treatment and disposal of dangerous waste by a licensed waste dealer, regulation 61 (1) states that, *“a waste handler licensed to*

treat hazardous waste shall take reasonable measures to determine the composition, nature and properties of the waste before treatment.” In regards to the above regulation, it is apparent that the waste handler should carefully undertake physical, chemical, or biological analysis to determine the most appropriate measures for managing the waste. While handling hazardous waste, waste handlers should ensure maximum protection from exposure to toxic waste. Regulation 96 connotes that, *“a waste handler shall ensure that vapors emitted during filling, cleaning or storage of waste containers, or during operations at a waste management facility do not expose a person at the vicinity of the waste management facility to noxious fumes or offensive odor.”* This provision closely applies to situations involving managing oil spillage, gas flaring and venting which have apparent negative effects on to the environment and human health.

The law requires that all hazardous waste handlers must have a backup plan as a response action to deal with eventualities arising from the dangerous wastes in to the environment. For instance, Regulation 98 is to the effect that *“a person who generates hazardous waste shall establish an emergency preparedness and response system based on an environmental risk assessment undertaken in accordance with the law.”* Part of the emergency plan relates to urgent notification systems. The provision of regulation 101 (1) is to the effect that in the event of acute pollution caused by waste, a person who generates waste must instantly alert the nearest police, the Authority and the relevant lead agency as soon as possible within the next twenty-four hours.

3.2.5 The National Oil and Gas Policy (NOGP), 2008

The NOGP is one of the policy documents formulated to support the operations of the laws relating oil and gas industry in Uganda. The policy largely emphasizes the importance of managing the impact of oil and gas activity on the environment. The policy is guided by several principles including the protection of the environment and biodiversity in Uganda. One of the policy objectives is to preserve the environment, and states *“to ensure that oil and gas activities are undertaken in a manner that conserves the environment and biodiversity.”* Objective 9 of the policy dictates that oil and gas activities are to be undertaken in a manner that conserves the environment

and biodiversity. The above is in line with the fact that the Albertine Graben, where oil and gas activities are planned to take place in Uganda, is recognized as one of the most bio-diverse rich areas in the world.

To achieve the above noted objective, the policy laid down several strategies which include ensuring the availability of the relevant institutional and regulatory framework to address environmental issues associated with oil and gas activities. The policy also emphasized that oil and gas companies should adopt and apply best practices in ensuring environmental protection and biodiversity conservation and also requires oil companies to make efforts to return all oil and gas production sites to their original condition as an environmental obligation.

The National Environment (Environmental and Social Assessment) Regulations, 2020

The above mentioned regulation applies to project activities for which an environmental and social impact study is required by law to be performed, oil and gas project activities fall under the type of project that requires impact assessment before they are enrolled.

Regulation 4 (1) is to the effect that, *“a developer shall not by their own implement any project to which these regulations apply without a certificate of approval of environmental and social impact assessment issued by the Authority.”* It’s a known fact that every project activity in the oil and gas sector poses a lot of risks to the detriment of the environment and human health. As such in an attempt to undertake such an operation, the procedure to follow is captured under regulation 12(2) which states in part as follows, *“a developer of a project proposed to be located in or near an environmentally sensitive area listed in Schedule 10 of the Act may be required to undertake an environmental and social impact study in accordance with these Regulations.”* The purpose for which an environmental impact assessment is required are enlisted under regulation 15 where the project developer is directed to carry out an environmental and social impact with the view to ascertain anticipated direct or indirect effects of the project on to the environment, human health and other associated effects.

The regulation directs that a developer of a project that falls within the ambit of projects that are likely to have devastating effects on to the environment should have

a mitigation plan included in their project design. Regulation 43 (1) states that “*a developer of a project referred to in regulation 3 shall apply the mitigation hierarchy of avoidance, minimization and mitigation of environmental and social impacts.*” Other than the mitigation plan, which is referred to under regulation 43 above, the developer is expected to have an environmental management and monitoring plan in respect of the operations of the project.

Petroleum (Refining, Conversion, Transmission and Midstream Storage) Regulations, 2016.

The above regulation provides for the controlled venting and gas flaring, specifically this is provided for under regulation 48(1) and it is to the effect that, the licensee shall not vent or flare except in accordance with the Act, these regulations, the regulations made under the National Environment Act, standards approved by the Authority and best petroleum industry practices as part of normal operational safety in the refinery, conversion plant or other petroleum process plant to ensure that vapors and gases are safely disposed.

Regulation 49 provides for a flare minimization plan to the effect that the licensee shall submit to the authority a flare minimization plan together with an application for a permit to commence operations. Furthermore, regulation 50 provides for the review and approval of a flare minimization plan. Sub-regulation (1) states that the Authority shall review and approve a flare minimization plan submitted by the licensee under regulation 53 before issuing a permit to commence operations.

Regulation 51 seeks to control the parameters of gaseous emissions by providing for flare monitoring system. It states that the licensee shall maintain a flare monitoring system for the monitoring and determination of flare operating parameters. Regulations 52-56 provide wide and elaborate legal control measures for emissions from the Refinery, Conversion Plant, or Other Petroleum Process Plants, with a particular focus on pollution prevention and control measures.

National Environment (Oil Spill Prevention, Preparedness and Response) Regulations, 2020. The specific purpose of this regulations is that it applies to

activities that may lead to oil spills arising from oil and gas production, storage, transportation, distribution, use or disposal of petroleum products and used oil.

The regulation elaborates on the measures to prevent oil spills, and the duty to establish an oil spill preparedness and response system by licensees and international oil companies. It further provides for an oil spill preparedness and response system by lead agencies. Specifically, regulation 7 states that *“a lead agency shall, in accordance with section 92(1) of the Act, establish and maintain an oil spill preparedness and response system for minor incidents of oil spill”* This provision applies to situations which fall within the description of tier 1 oil spills referred to in regulation 12 that may occur or cause damage to human health or the environment within its jurisdiction.

Regulation 10 further provides information for the local government and the local community. It states that, the person referred to under regulation 7 shall provide to the local government and local community where the facility is located or an activity is being undertaken, among other things the position and details of a contact person from whom information may be obtained, a general description of oil spill risks posed by the operation of a facility or activity, and how the local community will be informed of a major oil spill occurring. The foregoing provision is very vital in creating an informed and alert host community, where disasters that affect human life can strike at any moment.

The Petroleum (Exploration, Development and Production) (Health, Safety and Environment) Regulations, 2016.

The above regulation is enacted by virtue of sections 140, 142, 143, 144, and 183 of the Petroleum (Exploration, Development and Production) Act, 2013, Act 3 of 2013). It predominantly governs issues to do with health environment and safety in the oil and gas sector of Uganda. It does not only confine itself to occupational health and safety but also has wide parameters by providing for the health and environmental safety of the host communities.

Under Regulation 19, the licensee shall take measures to protect the community where the facility is located or where a petroleum activity is taking place from impacts of a facility or petroleum activity during the construction, operation and decommissioning of facilities and shall comply with the applicable laws, standards approved by the

Authority and best petroleum industry practices. This provision is very vital in ensuring the protection of health rights, of persons living within the host communities from the adverse effects of petroleum activities.

3.2.6 International treaties

It must be emphasized that there are many international conventions, treaties, agreements and declarations whose sole aim is to generally protect the environment, natural ecosystem and sustainable human survival. However, nearly all the above-categorized forms of legal instruments focus on causes of environmental degradation other than those emanating from the activities of oil and gas as illustrated below;

International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL) 1954⁷⁰

The above Convention aims to avert any form of pollution of the sea, especially as a result of discharges of oil from ships and other vessels. As such, the Convention strongly outlaws the release of oil from ships and all other water transportation systems except where such an act is legally justifiable. Despite its attempt to avoid the effect of illegal oil disposal, the Convention does not make mention of oil and gas activities related to exploration, extraction and utilization.

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

At best the UNCLOS imposes a strong obligation on all United Nations members not to degrade the environment. UNCLOS does not restrict its members from exploiting their natural resources but imposes an obligation on them not to destroy the environment. Furthermore, the **UNCLOS** necessitates all its members to take all measures using the best practicable means possible at their disposal to reduce, prevent and control the pollution of the marine environment.

In addition to the above, the International Convention on Civil Liability for Oil Pollution Damage (Civil Liability Convention), 1996, the International Convention for the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992 (The Fund Convention), and the United Nation's Framework Convention on Climate

⁷⁰ International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL) 1954 as amended in 1962.

Change (UNFCCC), 1992 all of whom caters for environmental protection from oil transportation in the water bodies.

3.2.7 Courts of law and environmental protection from oil and gas activities

The courts of law have played a very significant role in preserving the environment from the activities of oil and gas globally, the courts have undertaken this obligation by making binding pronouncements as illustrated below;

Finch v Surrey CC [2024] UKSC 20

In this case, the Supreme Court in the United Kingdom ruled that British local councils must consider the full impact of developing new drilling wells not just direct and indirect ones. While overturning the Court of Appeal decision, by majority decision the Supreme Court held that the emissions from the use of oil extracts from an oil well were indirect effects of the extraction of the oil, notwithstanding that the project was confined to oil extraction and did not include any refining process.

While giving the lead judgment of the majority, Lord Leggatt held that *“From one point of view the distinction between direct and indirect effects doesn’t matter, as both types of effect must be assessed in the EIA process.”* It was the wisdom of the Court that the mere fact that the combustion emissions would emanate from activities beyond the well site boundary which were not themselves part of the project was not a valid reason to exclude them. The Court also stated that *“one potential benefit of EIA process is that it may sometimes result in the identification of ways in which the design of the project can be modified without undue detriment to its aims so as to avoid or reduce what would otherwise have been a significant adverse environmental effect of the project.”* The above precedent clearly affirms the position that right to clean and environment is a fundamental human right that should not be violated when there are means to avoid such violation.

Gbemre v. Shell Petroleum Development Company of Nigeria Ltd. and Others (2005)⁷¹

⁷¹ Federal High Court of Nigeria in the Benin Judicial Division, suit FHC/B/CS/53/05, 14 November 2005

In this Nigerian case, the applicant, Gbemre, a representative of the Niger Delta Iwharekan community instituted an action against the Nigerian government for its failure to stop the oil and gas company Shell in gas flaring for decades and against Shell for engaging in massive and unceasingly intense gas flaring in the community in the course of its exploration and production activities. The applicant contended that Shell failed to consider the environmental impact of its activities on the communities' means of livelihood, and collective survival, as well as the gas flaring's contribution to the adverse and potentially life-threatening effects of climate change, furthermore, the applicant claimed that such gas flaring activities violated the community's rights to life and human dignity as constitutionally guaranteed by sections 33 and 34 of the 1999 Nigerian Constitution. The federal Judge ruled that the actions of the respondents in allowing and continuing to flare gas in the applicant's community is a violation of their fundamental rights to a clean and healthy environment. The judge further ruled that Shell's failure to carry out an EIA is a clear violation of the EIA Act and a violation of said rights. The Judge ordered them to take immediate steps to stop gas flaring.

Centre for Oil Pollution Watch (COPW) Vs NNPC (2018)⁷²

In another Nigerian case, the applicant (COPW) commenced a legal action against NNPC over an oil spillage in ACHA Community of Abia State of Nigeria. The oil spillage was allegedly caused by the defendant's negligence resulting from its pipeline, which had corroded due to lack of maintenance, had ruptured and spewed its entire contents of persistent hydrocarbon mineral oil into surrounding streams and rivers of Aku, resulting in the contamination of two community streams that were the major sources of water supply to the community. The Supreme Court held that protection of the environment by the State is a constitutional mandate, the court also explicitly recognized that section 33 of the Constitution which guarantees the Right to Life, implicitly includes and constitutes a fundamental right to a clean and healthy environment for all.

In the above-decided court cases, it is clear that the right to a clean and healthy environment is a fundamental right that must not be ignored or bypassed by any person intending or involved in the activity of oil and gas business. The courts of law have also

⁷² Supreme Court of Nigeria, SC. 319/2013

demonstrated their desire not to look on as the environment and associated human rights are at risks due to the activities of oil and gas.

3.2.6 Conclusion

From the foregoing provisions of the laws sampled, it is very clear that Uganda has quite a robust and elaborate legal framework geared at the protection of the health rights of the communities and persons involved in the oil and gas industry. There are several inter-sectoral laws, policies, regulations and guidelines aimed at preserving the environment, in this study, the research zeroed down on the key laws, policies and regulations that directly govern the operation of oil and gas industry in Uganda. In regard to the analysis of the laws, policy directives and regulations above, the provision of the law regarding protecting the environment from the destructive activities of oil and gas and promoting the right clean and healthy environment in Uganda is very elaborate and comprehensive as every details of environmental concerns are exhaustively dealt with. In like terms, the institutional design headed by a minister and other established authorities appears sound too. It however remains to be seen how well Uganda will implement these laws, to prevent the human health and environmental scourge that has been witnessed in other oil producing States.

CHAPTER FOUR

COMPARATIVE ANALYSIS

4.1 Introduction

This chapter focused on undertaking a comparative legal analysis of two countries; Nigeria and Norway performance in terms of observing health rights in their legal systems as far as the oil and gas industry is concerned. The purpose of this chapter is to figure out how Uganda can draw some lessons from the experience of other countries.

4.2 Oil and gas industry in Nigeria and Norway

The history of oil exploration in Nigeria dates back to 1903, this was the time when the Nigerian Bitumen Corporation conducted oil and gas exploratory work in the country. Subsequently, the first oil field began production in 1958. As of June 2023, Nigeria was ranked the largest oil-producing country in Africa as it produced 1.249 million barrels per day. In addition, Nigerian Upstream Petroleum Regulatory Commission (NUPRC) noted that the country's oil and condensate reserves stood at 36.966 billion barrels. In essence, this study chose Nigeria for the comparative analysis because it has a long history and experience in oil production and governance including the area of environmental protection from the effects of oil and gas activities.

Norway is one of the oldest oil-producing nation globally, and oil was first discovered there in 1969 and the first production started in 1971. Reports indicate that Norway has an oil reserve of about 5,138,767,000 barrels and produces 2,003,748 barrels per day. As of 2022, Norway overtook Russia as Europe's biggest natural gas supplier and it has been one of the world's top crude producers for the past half-century.⁷³ In addition to the above, in 2021 Norway exported \$41.5B in Crude Petroleum, which made it ranked 8th as the largest exporter of Crude Petroleum in the world.⁷⁴ The United Nation Environmental Program (UNEP) praised Norway for its excellent environmental management program, especially from the oil and gas activities, this is partly why UNEP collaborated with Norway under the Environment Pillar of Norway's Oil for Development Program.

In a nutshell, Nigeria is chosen for this comparative analysis because it is located in Africa, and has a wealth of experience in the oil and gas sector. Comparatively, Norway has a long history in the oil and gas business, and importantly it is commended for its excellent performance in as far as managing the environment from oil and gas activities is concerned.

⁷³Lambert, L. A., Tayah, J., Lee-Schmid, C., Abdalla, M., Abdallah, I., Ali, A. H., ... & Ahmed, W. (2022). The EU's natural gas Cold War and diversification challenges. *Energy Strategy Reviews*, 43, 100934.

⁷⁴<https://oec.world/en/profile/bilateral-product/crude-petroleum/reporter/nor#:~:text=Exports%20In%202021%2C%20Norway%20exported,most%20exported%20product%20in%20Norway>.

4.3 The effectiveness of the law in protecting the environment from oil and gas activities

There is a plethora of laws in Nigeria concerned with the protection of health and the natural environment from the effects of the country's oil and gas activities. The National Petroleum Policy of Nigeria has 9 objectives. The eighth objective focuses on minimizing the environmental footprint of oil exploration in Nigeria. In accordance with the foregoing, Section 25 (1) of the Petroleum Act⁷⁵ empowers the Minister to cancel any oil prospecting license if it appears that the licensee has failed to conduct operations in accordance with good oil field practice, better still if the licensee has failed to comply with any provisions of the laws governing the dealings of petroleum activities.

The operationalization of the above law has left a lot to be desired as several environmental impacts linked to oil production in Nigeria have persisted for years. For instance, it was disclosed that an estimated 240,000 barrels of crude oil are spilled in the Niger Delta yearly.⁷⁶ The spillage led to about 60% decrease in household food security a situation linked to 24% upsurge in the incidence of childhood malnutrition. Further, studies suggested that the implications of gas flaring on human health are all related to the exposure to those hazardous air pollutants emitted during gas flare.⁷⁷ These pollutants are associated with a variety of adverse health impacts, including cancer, neurological, reproductive and developmental effects. Deformities in children, lung damage and skin problems have also been reported.

A gas drilling explosion occurred on the North Apoi Field, five miles from the coast of southern Nigeria's Niger Delta region by the KS Endeavor drilling rig (the subcontractor for Chevron 36 Corporation).⁷⁸ The explosion was alleged to be due to pump failure on the rig where 65,000 people were directly affected by health problems, losses of

⁷⁵Petroleum Act Chapter P10 (Chapter 350 LFN 1990) Laws of The Federation of Nigeria

⁷⁶Ordinioha, B., &Brisibe, S. (2013). The human health implications of crude oil spills in the Niger delta, Nigeria: An interpretation of published studies. *Nigerian medical journal: journal of the Nigeria Medical Association*, 54(1), 10.

⁷⁷Ajugwo, A. O. (2013). Negative effects of gas flaring: The Nigerian experience. *Journal of Environment Pollution and Human Health*, 1(1), 6-8.

⁷⁸Sako, E. (2017). *Public health implications of oil pollution in Koluama: Nigeria* (Doctoral dissertation, Walden University).

livelihood and environmental disasters involving water, land and food supplies within the community.

A three-year investigation by the United Nations Environment Programme (UNEP) disclosed that 9 million barrels of oil spilled in host communities over the past half-century.⁷⁹ This resulted in contamination of the environment including underground water from which people depended on.

Figure 1: Burnt swamp from a leaking oil pipeline



Oil from a leaking pipeline burns in Goi-Bodo, a swamp area of the Niger Delta in Nigeria October 12, 2004 [Austin Ekeinde/Reuters]

Section 2(1) of the decree⁸⁰ dictates that nobody shall undertake or authorize projects without prior consideration of their environmental effects. The law further directs that all projects that are likely to significantly affect the environment must undertake an environmental impact assessment.

⁷⁹Pegg, S., & Zabbey, N. (2013). Oil and water: the Bodo spills and the destruction of traditional livelihood structures in the Niger Delta. *Community Development Journal*, 48(3), 391-405.

⁸⁰Environmental Impact Assessment Decree 1992, Laws of The Federation of Nigeria

Despite of the provision of the law, Nigeria has been practicing gas flaring and venting in its oil and natural gas industry for a considerably long time. Gas flaring and venting are associated with several environmental and health consequences. In Nigeria, some studies have suggested links between gas flaring and health problems in host communities,⁸¹ while others have established relationships between gas flaring and poor agricultural yields.⁸² For instance, it is observed that for decades, Nigerian oil-bearing communities have been left desolate in environmental degradation and poor due to neglect and hazards arising from oil and gas production.⁸³ The Independent Scientific Assessment (ISA) and UNEP described the existence of environmental pollution from gas flaring to be continuous for over 50 years of production, penetrating deeper and further than may have been supposed, most areas appear unaffected at the surface but are severely contaminated underground.

Section 3(1)⁸⁴ provides that in identifying the environmental impact assessment process, the relevant significant environmental issues shall be identified and studied before commencing any project or activity covered by the provisions of this Decree. It remains unclear whether the above provision of the law has been well implemented, for instance, a study revealed that Nigeria has over 123 gas flaring sites in the Niger Delta region which is viewed as one of the peak emitters of greenhouse gases in the whole of Africa.⁸⁵ The study also revealed that about 45.8 billion kilowatts of heat is emitted into the air of the Niger Delta from the burning of at least 1.8 billion cubic feet of gas daily.

It must be noted that Nigeria was ranked 14th among the 18th worst Health and Safety systems in the world.⁸⁶ Further, about 16,000 babies are said to die per year due to poor management of oil spills and environmental degradation, including 20% of the world's

⁸¹Ite, A. E., & Ibok, U. J. (2013). Gas flaring and venting associated with petroleum exploration and production in the Nigeria's Niger Delta. *American Journal of Environmental Protection*, 1(4), 70-77.

⁸²Dung, E. J., Bombom, L. S., & Agusomu, T. D. (2008). The effects of gas flaring on crops in the Niger Delta, Nigeria. *GeoJournal*, 73, 297-305.

⁸³Tarabinah, W. M. (2015). *United States Alien Torts Claims Act (ATCA), Oil Corporations and Militarized Commerce in Nigeria's Niger Delta* (Doctoral dissertation).

⁸⁴Environmental Impact Assessment Decree 1992, Laws of The Federation of Nigeria

⁸⁵Nnaemeka, A. N. (2020). Environmental pollution and associated health hazards to host communities (Case study: Niger delta region of Nigeria). *Central Asian Journal of Environmental Science and Technology Innovation*, 1(1), 30-42.

⁸⁶Nnadi, U., El-Hassan, Z., Smyth, D., & Mooney, J. (2007). Lack of proper safety management systems in Nigeria oil and gas pipelines. *Delta*.

gas flares.⁸⁷With regards to Nigerian oil and gas management, evidence suggested that it operated below internationally recognized standards to prevent, or control the chaos of hydrocarbons in the environment.⁸⁸As a result, Nigeria was cited as the world's most polluted cities among the seven worst countries on the human capital index, additionally it ranked 11th among the worst place for a baby to be bore.⁸⁹

Under the Norwegian law, section 7-3⁹⁰ is to the effect that an oil and gas licensee is liable for pollution damage. The law stresses that the liability of licensees extends to any other operator of oil and gas projects even if they aren't the licensee. Further under section 8-2, the law shifts the burden of compensation on the State in the event a petroleum project activity is within an area entirely or partly occupying a fishing field. However, under section 8-3, the licensee remains exclusively responsible for any fault, in respect of financial losses incurred as a result of pollution and waste from the petroleum activities. Before any activity concerning oil exploration and production is undertaken, the law under section 9-2 requires that the licensee establish and maintain an efficient emergency preparedness to deal with accidents and emergencies which may lead to loss of lives, personal injuries, pollution or major property damage. The above provision of the law is intended to protect the occurrences and destructions caused by oil and gas activities with the possibility of repatriation in the event damages are caused.

In addition to the above, Norwegian law under section 5,⁹¹ is to the effect that every individual has a duty to prevent and limit the harmful effects of fire, explosion and other accidents. These incidents are more common in the oil and gas industry, it's uprightly important that a plan to avert their occurrences is put in place. Some studies have revealed that Norway has an excellent IT-based Safety Management System which contains procedures, checklists, documented experiences, best practices, and expert

⁸⁷Odeyemi, O. O. (2022). Integrating environmental and health and safety management system in the oil and gas sectors: a case study of Nigeria.

⁸⁸Nwozor, A., Olanrewaju, J. S., Ake, M., & Aleyomi, M. (2020). Global Quest for Zero Routine Flaring: An Appraisal of Nigeria's Legal and Regulatory Abatement Frameworks. *Electronic Green Journal*, 1(44).

⁸⁹Aliyu, A. A., & Amadu, L. (2017). Urbanization, cities, and health: the challenges to Nigeria—a review. *Annals of African medicine*, 16(4), 149-158.

⁹⁰Act 29 November 1996 No. 72 relating to petroleum activities, Law of Norway

⁹¹Act on protection against fire, explosion and accidents involving dangerous substances and on the fire service's rescue tasks (Fire and Explosion Protection Act)

references in the oil and gas industry.⁹² In like terms, the above legal provision notes that in the event of a fire, explosion or other accident, everyone is obliged to immediately inform those exposed to danger and, if necessary, notify the emergency alert center.

Section 6⁹³ is to the effect that the owner of a production equipment is mandated to provide the necessary safety measures to prevent and limit fire, explosion or other accidents. Importantly, section 20⁹⁴ provides that responsible business bodies have a duty to ensure that any handling of dangerous substances takes place in such a way that people, the environment and surroundings are satisfactorily protected. Studies show that Norway has an excellent track record in managing the effects of oil and gas activities on the ecology and human health.⁹⁵

4.4 The law in promoting the right to a clean and healthy environment from the oil and gas activities

In all oil and gas producing countries, environmental pollution from the industries' activities mainly manifests in form of oil spillage and gas flaring. Under section (2)⁹⁶ the law directs that an oil spiller is to report an oil spill to the responsible agency in writing not later than 24 hours after the occurrence of an oil spill. The law further stresses that failure to report such incidents as prescribed attracts a penalty of five hundred thousand Naira (N500,000.00) for each day of failure to report the occurrence. Contrary to the legal provision, studies⁹⁷ have revealed that oil spill incidents connected to petroleum exploration and production have been rampant in Nigeria's Niger Delta and have negatively affected oil production host communities as far back as in 1956. According to estimates, over 2,567,966 barrels of crude oil have been spilled in 5733

⁹²Wold, T., &Laumann, K. (2015). Safety management systems as communication in an oil and gas producing company. *Safety science*, 72, 23-30.

⁹³Act on protection against fire, explosion and accidents involving dangerous substances and on the fire service's rescue tasks (Fire and Explosion Protection Act)

⁹⁴Act on protection against fire, explosion and accidents involving dangerous substances and on the fire service's rescue tasks (Fire and Explosion Protection Act)

⁹⁵Krange, O., Kaltenborn, B. P., &Hultman, M. (2019). Cool dudes in Norway: climate change denial among conservative Norwegian men. *Environmental Sociology*, 5(1), 1-11.

⁹⁶ National Oil Spill Detection and Response Agency (Establishment) Act, 2006 Law of Nigeria

⁹⁷Elum, Z. A., Mopipi, K., & Henri-Ukoha, A. (2016). Oil exploitation and its socioeconomic effects on the Niger Delta region of Nigeria. *Environmental Science and Pollution Research*, 23, 12880-12889.

incidents in the Niger Delta from 1976-2000 and about 1,820,411 barrels were lost to the environment.⁹⁸ It must be emphasized that discharges of petroleum hydrocarbon into the environment habitually expose the human population near the polluted area to possibly dangerous toxic substances.

The law under section 7⁹⁹ provides that the responsible agencies shall guarantee the coordination and implementation of the law with regards to protecting the territorial waters of Nigeria from oil spillages by taking actions to prevent, control, combat and mitigate marine pollution. Further, section 19¹⁰⁰ provides that in the event of a major oil spill, the federal agencies shall in collaboration with other agencies undertake to assess the extent of damage to the ecology. It has been revealed that the leading sources of oil spills and pollution in the Niger Delta are equipment failure, oil blowouts, leakages from aged and corroded networks of the pipelines, sabotage and vandalization of the oil pipelines.¹⁰¹ As a result, Niger Delta has suffered from every type of pollution from petroleum exploration and production. Evidence suggests that at least 2,000 oil-polluted sites in the region and about 9 to 13 million barrels of oil have spilled in the region since drilling began in 1958 and about 7,000 spills have occurred between 1970 and 2000.¹⁰²

In light of the relation above, it remained unknown how the government has dealt with such situations, given the fact that the law prohibits such practices. Over time Norway has been praised for its excellent environmental management of oil and gas activities, this is reflected in some of the laws that it has enacted. For instance, under section 7,¹⁰³ the law observes that no person may possess, do, or initiate anything that may entail a risk of pollution unless this is lawful pursuant to the law. Section 9¹⁰⁴ empowers

⁹⁸Wenibowei, K. (2018). An Impact Assessment of the National Policy on Guidelines and Standards for Environmental Pollution Control in Nigeria, 1991: A Case Study of the Niger Delta. *The International Journal of Social Sciences and Humanities Invention*, 5(12), 5155-5162.

⁹⁹National Oil Spill Detection and Response Agency (Establishment) Act, 2006 Law of Nigeria

¹⁰⁰National Oil Spill Detection and Response Agency (Establishment) Act, 2006 Law of Nigeria

¹⁰¹Saleh, M. A., Ashiru, M. A., Sanni, J. E., Ahmed, T. A., & Muhammad, S. (2017). Risk and environmental implications of oil spillage in Nigeria (Niger-Delta Region). *International Journal of Geography and Environmental Management*, 3(2), 44-53.

¹⁰²Chukwuka, K. S., Alimba, C. G., Ataguba, G. A., & Jimoh, W. A. (2018). The impacts of petroleum production on terrestrial fauna and flora in the Oil-Producing Region of Nigeria. In *The Political Ecology of Oil and Gas Activities in the Nigerian Aquatic Ecosystem* (pp. 125-142). Academic Press.

¹⁰³Act of 13 March 1981 No.6 Concerning Protection Against Pollution and Concerning Waste

¹⁰⁴Act of 13 March 1981 No.6 Concerning Protection Against Pollution and Concerning Waste

the pollution control authority to issue regulations laying down emission limit values for types of pollution that shall be permitted and the threshold limit values for the occurrence of certain substances in the environment, and the measures that shall be taken if these values are exceeded. According to some studies,¹⁰⁵Norway has been praised as having one of the model and typical carbon and other gas emission in the environment since it adopted flaring reduction measures and introduced a carbon tax, gas flaring and venting reduction strategies that have been effective over the past years.

4.5 Institutional framework in protecting the environment from oil and gas activities

In Nigeria, a lot of power is given to the minister to deal with the activities of oil and gas. For instance, under section 8 (1) of the Act,¹⁰⁶the Minister is empowered to exercise general supervision over all operations carried on under licenses and leases granted under this Act. Under sub-section 8 (1) (b), the minister is directed to annually report to the Federal Government on the progress of the oil industry in Nigeria. In like terms, other statutory bodies have been vested with some powers equivalent to that of a minister, for instance Under section 8 (2),¹⁰⁷ the Director of Geological Survey shall always have access to the areas covered by oil exploration and production licenses to inspect geophysical and geological operations therein. These are the same powers that the law entrusted to the minister.

The law also empowers the minister to make other directives intending to operationalize the provision of the Act and other enabling laws regarding the oil and gas industry in Nigeria. Under section 9 (1)¹⁰⁸the Minister entrusted with the authority to make other regulations with the view prescribe and operationalize the provision of the Act.

In Norway, just like other jurisdictions the power to deal with oil and production is entrusted to the King in Council, Section 3-3¹⁰⁹ is to the effect that the King in Council

¹⁰⁵Hastings, A., & Smith, P. (2020). Achieving net zero emissions requires the knowledge and skills of the oil and gas industry. *Frontiers in Climate*, 2, 601778.

¹⁰⁶Petroleum Act Chapter P10 (Chapter 350 LFN 1990) Laws of The Federation of Nigeria

¹⁰⁷Petroleum Act Chapter P10 (Chapter 350 LFN 1990) Laws of The Federation of Nigeria

¹⁰⁸Petroleum Act Chapter P10 (Chapter 350 LFN 1990) Laws of The Federation of Nigeria

¹⁰⁹Act 29 November 1996 No. 72 relating to petroleum activities

may, on conditions to be further stipulated, grant production license. Other than the King, it's the line ministry that is empowered to carry out the duty to manage the entire oil and gas industry, this is reflected in the provision of section 2-1¹¹⁰ which observes that the Minister may grant to a body corporate a license to survey for petroleum within limited areas of the seabed or its subsoil. This power extends to other activities within the sector.

4.6 Conclusion

In regard to the above discussion, both Nigeria and Norway have clear and comprehensive legal frameworks that cater to the protection and preservation of the environment needed from the activities of oil and gas. However, from the evidence in the literature above it appears that Nigeria has not made much progress as far as implementing the laws regarding environmental protection from the activities of oil and gas is concerned as evidence suggests the environment has remained dangerously destroyed and human health due to destruction from oil and gas activities are apparent.

¹¹⁰Act 29 November 1996 No. 72 relating to petroleum activities

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents key study findings upon which conclusions and recommendations are also made. Essentially, the study recommendations are guided by the key study findings which are in turn informed by the specific research objectives.

5.2 Summary of Findings

The summary of findings is presented according to the specific research objectives as coined in chapter one of this study.

5.2.1 Effectiveness of the law in protecting the environment

In regard to the first specific objective which was to analyze the effectiveness of the law in protecting the environment from the destructive activities of oil and gas in Uganda. The key study findings are as follows:

The study revealed that since the discovery of oil and gas, a number of legal instruments have been created, others repealed as well. However, the current and applicable ones included; the 1995 Constitution of the Republic of Uganda, the Petroleum (Exploration and Production) Act Cap 150, the National Environment Act, Cap 181, the National Environment (Waste Management) Regulations, 2020. SI No 49/20203.2.5 National Oil and Gas Policy (NOGP), 2008 and the National Environment (Environmental and Social Assessment) Regulations, 2020

In totality, the provisions of the above legal instruments disclosed the following; that every citizen of Uganda is entitled to the right to a clean and healthy environment, undertaking environmental impact assessment is a must for oil and gas projects, the licensee is responsible for managing environmental pollution from oil and gas activities by ensuring good oil field practice, and in an event of extreme pollution, the law

empowers the concerned institutions including court to take appropriate actions with the view to ensure environment is preserved.

5.2.2 Efficacy of the law in promoting the right to a clean and healthy environment

Regarding the second specific objective which was to examine the efficacy of the law in promoting the right clean and healthy environment from the adverse effects of oil and gas activities in Uganda, the key study findings are as follows:

The 1995 Constitution provided that the State shall promote sustainable development and public awareness of the need to manage the environment in a balanced and sustainable manner for the present and future generations

The National Environment Act (NEA), 2019 emphasized that the Authority shall ensure that the principles of environment management as set out under the laws are observed while taking into account the finite nature of non-renewable resources and the productivity of the available renewable resources

Regarding pollution, NEA states that an application for a pollution control license to carry on an activity that is likely to pollute the environment over the prescribed standards shall be made to the committee in a manner prescribed by regulations

The law also dictates that a person who pollutes the environment contrary to the concerned laws will be strictly liable for any damage caused to human health and the environment.

Regarding environmental impact assessment, the law guides that the concerned authority may require a developer to undertake an environmental risk assessment as part of the process of environmental and social impact assessment.

In regard to pollution, the law requires that a project developer apply the mitigation hierarchy of avoidance, minimization and mitigation of environmental and social impacts. This is done after ascertaining the certificate to perform an acceptable degree of pollution.

From the above summary of key findings, it is evident that the laws regarding promoting the right to a clean and healthy environment is comprehensive and effective.

5.2.3 Feasibility of institutional framework in protecting the environment

Regarding the third specific objective which was to examine the feasibility of the existing institutional framework to protect the environment from the adverse activities of oil and gas in Uganda, the study findings are as follows;

The management of environmental concerns from destruction is an inter-sectoral agenda. However, for this study, the institutional framework for managing the effect of oil and gas activity on to the environment is heavily vested in the Ministry of Energy and Mineral Development together with the Petroleum Authority of Uganda.

These two institutions consist of specialized units within themselves that perform specific responsibilities with the view to ensuring the provisions of the concerned laws relating to oil and gas in Uganda is properly implemented.

5.3 Study recommendations

In regard to the first objective, the study revealed that there are existing laws governing all petroleum activities in Uganda, in general, the provisions of the laws are comprehensive and exhaustive with regards to protecting the environment. The researcher recommends as follows;

The government should further operationalize the provision of the laws into micro levels by establishing policy guidelines and statutory instruments. This will deal with generalities in the provision of the laws and help ease the implementation process.

In light of the above; the researcher further recommends the establishment of a strong single independent Regulatory Commission. The aim is to reduce the current number of disparities and overlapping regulatory duties among line agencies, as well as separate commercial from regulatory activities.

The researcher recommends that the government through its agents must practice the provision of the laws to their fullest without fear or favor, this will ensure the objective of the laws is achieved.

In regard to the second objective, the study revealed that the laws are efficient in their provisions in promoting the right clean and healthy environment from the adverse effects of oil and gas activities in Uganda. The researcher recommends as follows:

That the government and line ministry should do massive sensitization of the communities especially those living in the oil production area about their rights, such that they can participate in reporting incidents of risks and dangers about oil and gas

The researcher further recommends that the government and its State agency should perform periodic revision of the laws, policies and regulations. This will promote relevance, and comprehensiveness but also an easy implantation process. The periodic revision of these laws to ensure relevance cannot also be underestimated.

Regarding the third objective, the study revealed that the existing institutional framework to protect the environment from the adverse activities of oil and gas in Uganda is feasible to the extent for their establishment.

The researcher recommends that more specialized units should be established and periodically trained to make implementation of the law regarding oil and gas more efficient and effective.

5.4 Recommended areas for future research

In regard to this section, the researcher recommends possible areas that may further be researched with the view of improving the management of oil and gas pollution.

As such the following are recommended areas for further studies:

- a. Community knowledge about the danger of oil and gas pollution
- b. Examine the role of the community in minimizing risks associated with oil and gas pollution
- c. This study should be upscaled to understand the right to a clean and healthy environment in practice in communities hosting oil and gas production process.

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