AN ASSESSMENT OF REGULATORY COMPLIANCE WITH INTERNATIONAL AND REGIONAL OBLIGATIONS RELATING TO ENVIRONMENTAL HEALTH AND SAFETY STANDARDS.

A Case Study of the Oil and Gas Industry in Uganda

BY

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DECLARATION

I, Kulu Idambi John Boniface declare that this Research dissertation with the exception of quotations and references contained in published works, which have all been identified and acknowledged, is entirely my own original work and it has never been submitted/ presented to any higher Institution, either in part or whole for any academic award elsewhere.

Signature……..... Date.....

KULU IDAMBI JOHN BONIFACE

APPROVAL

This is to satisfy that this research dissertation is done under my supervision and it is now ready for submission to the Faculty of Law with my approval.

Signature …… Date ……

DR. IVAN MUGABI

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I dedicate this to all my family members especially Carol who gave me moral support and encouragement.

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LIST OF ACRONYMS

ACODE	Advocates Coalition for Development and Environment
APPEA	Australian Petroleum Production and Exploration Association
CNOOC	China National Offshore Oil Corporation
DPP	The Directorate of Public Prosecutions
DRC	Democratic Republic of Congo
EAR	Environmental Audits and Reviews
EHS	environmental health and safety
EIA	Environmental Impact Assessment
EM	Environmental Monitoring
EMS	Environmental Management Systems
EPE	Environmental Performance Evaluation
EQS	Environmental Quality Standards
GHGs	Green House Gases
IGOs	Intergovernmental Organizations
ILO	International Labour Organization
IRA	Institute of Resource Assessment
M&E	Monitoring and Evaluation
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MEMD	Ministry of Energy and Mineral Development
NBEST	National Biomass Energy Strategy
NCCP	The Uganda National Climate Change Policy
NEA	National Environment Act
NEMA	National Environment Management Authority
NGOs	Nongovernmental Organizations
NOGP	National Oil and Gas Policy
NTR	Non-Tax Revenue
PASS	Pan-African START Secretariat
PEPD	Petroleum Exploration and Production Department
PFE	Permanent Forest Estate
PIL	Public Interest Litigation
PSA	Production Sharing Agreement
PWDs	Persons with Disability
REP	Renewable Energy Policy
SEA	Strategic Environmental Assessment
SEP	Strategic Exports Programme
SIA	Social Impact Assessment
U Ltd	Uganda Limited
UN	United Nations
UPF	Uganda Police Force
UPIK	Petroleum Institute Kigumba
USAID	United States Agency for International Development
UWA	Uganda Wild Life Authority

ABSTRACT

Introductory: The study examined an assessment of regulatory compliance with international and regional obligations relating to environmental health and safety standards. This was guided by the following questions;- what are some of the major international, regional and national legal instruments governing environmental health and safety standards in the oil and gas industry in Uganda?, what are the negative consequences of oil and gas activities on the environmental health and safety of the employees and surrounding communities?, to what extent have the oil companies, regulatory institutions and the Government complied with environmental, safety and health standards in oil and gas exploration and production? and finally what mechanisms can be put in place to strengthen compliance to environmental health and safety compliance in Uganda?. As Uganda looks forward to the first drop of oil in the Albertine graben in 2025, the question is how are the players in the Oil and gas industry complying with the Environmental health and Safety Standards. For purposes of clarity and avoidance of doubt, this industry can wipe out a bigportion of people if not handled properly.

Methodology: The study was conducted through doctrinal approach which provided a systematic exposition of the rules governing a particular legal category, analyses the relationship between those rules, explains areas of difficulty and, perhaps, predicts future developments.

Findings: Uganda is about to commence commercial oil and gas production at least by 2025. This follows the discovery of oil deposits worth about 3.5 billion barrels. In the course of this research, it was found that the oil industry of Uganda has reached the midstream stage. This is a stage of development and production, storage, distribution and marketing. So far, the performance of the actors as regards environmental health and safety law compliance leaves a lotto be desired. Though some progress was made for example by formulating the Environmental Sensitivity Atlas for the Albertine Graben; Albertine Graben Monitoring Plan and conduct of EIA and SEA, there is still a lot to be desired despite efforts to ensure that the workers in Oil andgas industry especially within the oil rigs have basic necessities to ensure that they work in a safeand healthy environment.

Recommendation and conclusion: The research conclude that there is no environmental health and safety law compliance in Uganda's oil sector. This because of the failure to fulfill the above underscored standards. Firstly, the EIA conducts have been criticized for lacking full appreciation of the problem and full public participation. In addition, there was no area specifically for sensitive Environmental Impact Assessments such as Lake Albert. There is need to enhance compliance with environmental health and safety principles through strengthening thelegal framework such that it is preventative in nature as opposed to being reactive. There is need for environmental health and safety training and awareness so that potentially affected people can know their rights, the relevant legislative requirements, detailed procedures and work instructions for key activities and tasks, risks and emergency plans and the means of responding to incidents.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This research focused on Uganda's legal framework on environmental, health and safety regulation of oil and gas exploration and production. Its objective is to examine the law relating to the environmental health and safety (EHS) management of petroleum exploration and production in Uganda. It begins by providing an overview the activities pertaining to the process of oil exploration and production in pertaining to the Ugandan situation. The research proceeds reviewing the current state of oil exploration in Uganda. It identifies the potential environmental, health and safety risks and dangers and examines the application of environmental impact assessment. Human and environment safety and health protection remains the number onepriority for the oil and gas industry. These oil and gas companies are expected to apply EHS regulations across the entire span of their activity, from exploration and production, to pipeline management, down to refinery and marketing. These regulations are not only stringent but also constantly revised to take into consideration technological developments and the more extreme conditions in which oil and gas companies operate.

The study is designed to review the legal and environmental standard requirements as provided under the policy and legal framework including those under the Petroleum (Exploration, Development and Production) Act 2013 and the Occupational Health and Safety Act of Uganda 2006 as well as regional and international standards to which Uganda is a subject by the treaty.

By observing this the study will explore whether these regulations in particular have been complied with during the oil and gas production process for example the need to mainstream occupational health and safety operations to ensure that these policies are put into practice.

1.2 Background of the study

Uganda is a landlocked country located in Africa, in the East African Region. Uganda 2020 population is estimated at 45,741,007 people at mid-year according to UN data. Uganda

population is equivalent to 0.59% of the total world population[1]. It is bordered by five countries: Kenya to the East, Tanzania in the South, Rwanda and Burundi in the South West, Democratic Republic of Congo to the West and Southern Sudan to the North. Over a long period of time Uganda has relied on imported petroleum products, however in 2006, Uganda confirmed the existence of commercially viable oil deposits in the Albertine Graben, explored by Australia's Hardman Resources and UK"s Tullow Oil. This set-in motion the scramble to explore and extract oil in Western Uganda.[2]

However, fortunately or unfortunately, Uganda has finally discovered her own petroleum deposits and intensive plans are underway for the commencement of commercial production that is at least expected start by 2020. However, the question is whether Uganda's domestic production of oil will remedy the present fuel crisis and the above hyper import bill. The discovery of oil in Uganda is traceable far back prior to independence.[3] Oil exploration activities were started in the 1920s by W.J. Wayland, a Colonial Government Geologist of British Protectorate who also documented up to 52 seeps of hydrocarbons along several blocks across the Albertine Graben.[4] The first well was drilled by the BP Company and the Anglo-European Investment Company of South Africa at a place called Butiaba-Waki in 1938[5]. However, the activities unable to continue due to interruption by the outbreak of the Second World War in the 1940s and the political instabilities that followed in the 1960s to the 1970s. Those preparatory activities were resumed sometime later in 1983, leading to confirmation of presence of oil in reasonable commercial reserves. Enactment of the Petroleum (Exploration and Production) Act, 1985.[6] The Geological Survey and Mines Department was later transformed into the Petroleum Exploration and Production Department (PEPD) in 1991. The Geological Survey and Mines

[1]The Population of Uganda (1950 - 2019) chart plots the total population count as of July 1 of each year, from 1950 to 2019

[2] The Albertine Graben in which oil has been discovered in Uganda is located in the western part of the country, mainly in Masindi, Kibale and Hoima district around Lake Albert which forms the northernmost part of the western arm of the East African Rift Valley. It is situated at the Uganda and Congo border further stretching to the border with Sudan

[3] Ibid

[4] E. Kasimbazi, "Environmental Regulation of Oil and Gas Exploration and Production in Uganda" in Journal of Energy and Natural Resources Law Vol. 30 No.2 of 2010 at p.189

[5] Civil Society Coalition on Oil in Uganda (2010) Uganda's Oil Agreements Place Profit before People, at 5 and E. Kaweesi, "Uganda's Security amidst Oil Exploration, Development and Production" in Makerere Law Journal (2013) at 10

[6] E. Kasimbazi (2009) Legal and Environmental Dimensions of Oil and Gas Exploration in Uganda

Department intensified aeromagnetic surveys and a lot of seismic and aeromagnetic data was documented.[7]

In 1992 Petrofina had been licensed for the entire Albertine Graben but left in 1993 without having undertaken substantial work. Thereafter PEPD undertook a second comprehensive seismic and aeromagnetic survey and documented massive gravity and aeromagnetic data, although this time with a view of promoting Uganda's potential of attracting investors within thepetroleum sector.[8] At this point the Petroleum (Exploration and Production) (Conduct of Upstream Operations) Regulations were enacted.[9] In 1997 Heritage Oil and Gas Ltd was licensedfor the exploration of EA3(oil block) (Semliki Basin) and it also acquired the first 2D seismic data for the country in 1998. Additional data was acquired in 2001. Later in 2001 EA2 (oil block) (Northern Lake Albert Basin) was licensed to Hardman Petroleum Resources Ltd. In 20052D seismic surveys were also carried out in Kaiso-Tonya and Buhuka Bugoma areas.[10]

Exploration Area 1 (Pakwach Basin) (4285 Sq. Km) was licensed to Heritage Oil and Gas Ltd and Energy Africa (now Tullow Oil) on July 1st, 2004; Exploration Area 2 (Lake Albert Basin) (4675 Sq. Km) was licensed to Hardman Resources Ltd and Energy Africa Ltd (now Tullow Oil)on October 8th 2001. Exploration Area 3A (Semliki Basin) (1991 Sq. Km) was first licensed to Heritage Oil and Gas Ltd as an additional part of Exploration Area 3 on Jan. 15th 1997, although the oil well was later relicensed to Heritage Oil and Gas Ltd and Energy Africa (now Tullow Oil) in Sept. 2004.[11] Exploration Area 3B (Semliki Basin) (266.6 Sq. Km) is not licensed. Exploration Area 3C (Semliki Basin) sized 359.5 Sq. Km is also not licensed. The same applies to Exploration Area 3D (1112 Sq. Km). Also Exploration Area 4A (Lake Edward/George Basin) (3812 Sq. Km) is not licensed. Exploration Area 4B (Lake Edward/George Basin) (1018 sq. Km)was licensed to Dominion Petroleum Ltd. on July 27th, 2007.[12] Exploration Area 4C (Lake Edward/George Basin), sized 1016 Km was first licensed to Dominion Petroleum Ltd as part of
E.A 4B but was de licensed and as at the time of this research it is not licensed. Exploration Area

[7] Ibid
[8] E. Kasimbazi, op cit, at 189
[9] I. Kasiita, "History of Oil Discovery in Uganda", New Vision Friday 23rd Jan, 2009
[10] E. Kasimbazi, op cit, at 191
[11] EA-1/EA-1A & EA-2 North Project (2015), Environmental and Social Impact Assessment (ESIA) Scoping Report / Terms of Reference
[12] National Oil and Gas Policy for Uganda,2008 Ministry of Energy and Mineral Development

5 (Rhino Camp Basin) which covers 6040 Sq. Km was licensed to Neptune Petroleum (U) Ltd. (now Tower Resources) on September 27th 2005.[13]

Uganda‟s oil and gas potential already confirmed shows prevalence of about 3.5 billion barrels. By 2009, Heritage Oil and Tullow had drilled 27 oil wells, 25 of which were confirmed to contain commercially viable hydrocarbons. However more recent research shows that up to 55 wells have now been drilled and 51 of these have hydrocarbons viable for commercial exploitation. Among these, significant productive wells are the following[14]: The Kingfisher well, on Lake Albert Shore; Butiaba well, in Block 2; Delta Play Fairway, in Kaiso- Tonya Region, Block 2; the Kasemene well site, with Kasemene -1, Kasemene-2 and Kasemene-3A; Buffalo and Giraffe wells, in Block -1; Nzizi well sites, with Nzizi-2, Kingfisher 1A, Kingfisher 2 and Kingfisher 3A wells; Buffalo and Hartebeest wells, in the Delta area of Murchison Falls NationalPark.

In a nutshell, oil and gas deposits in Uganda today have been described as Africa‟s biggest onshore discovery in 20 years. Estimated reserves are about 3.5 billion barrels (which may increase with further exploration) with a daily production rate (flow rate) of 125,000 bpd,capable of rising up to 200,000 bpd in some places. Proven reserves don‟t merely place Uganda among the top 50 oil producers in the world as predicted by earlier writers[15] but actually leave Uganda in the 40th position in the ranking of global oil producing economies.[16] There have been some steps forward especially in 2012, notably the transfer of interests by pioneer operators to new players. For example Total and the China National Offshore Oil Corporation (CNOOC) have come on board and taken one-third stakes in the oil blocks as partners with Tullow,[17] the company that has played a central role in the development of Uganda‟s oil to date.

The health and safety legal regime in Uganda is enshrined under the Petroleum Exploration, Development and Production Act 2013 and the Occupational Health and Safety Act 2006. The purpose of the Act (Health and Safety) is to ensure appropriate health and safety standards for

[13] Ibid
[14] Emmanuel Kaweesi, "Environmental Law Compliance and its implications for Oil and Gas Exploration and Production in Uganda" 2014 at 18.
[15] J. Kathman & Megan Shannon "Oil Extraction and the Potential for Domestic Instability in Uganda" African Studies Quarterly, Vol. 12. Issue 3 (Summer 2011) at 1.
[16] B. Shepherd (2013) Oil in Uganda: International Lessons for Success, at 2

[17] Energy world, 2018 "Uganda's national oil firm, China's CNOOC sign exploration deal"

the health, safety,[18], welfare and appropriate training of persons employed in workplaces. Section 18(1) requires the employer to monitor and control the release of hazardous into the environment. Thus, where there are major activities of handling of chemicals or any dangerous substance that is liable to be pollution or to be released into rivers or lakes or soil and which contaminate the atmosphere, the employer is required to arrange for the equipment and apparatus required for monitoring air, soil and water pollution and to arrange for the monitoring of these mediums, with a view to rendering them safe.[19] Clause (2) states that the records of monitoring in subsection (1) should be kept and made available to the inspector.[20] These provisions are applicable to both national and international oil exploration companies because of contaminating the atmosphere might pose to the safety of the environment and security of human and animal life. For instance in the case of Ogoni v Shell Ogoni, they have faced devastating effects of the presence of Shell Oil company in Ogoniland in Nigeria since the 1950s. They also face discrimination from the Nigerian government, which favors the oil company over the local community. Image from Spilled News

The Act introduces environmental principles. It thus requires every licensee and every person that is exercising or performing functions, duties or powers originating from its provisions and undertaking activities related to the petroleum to take into consideration, by complying with the environmental principles prescribed by the NEA and other laws applicable.[21] This is in line with the provisions of the Rio Declaration such as the one on sustainable development mentioned above.[22]

The Occupational Health and Safety Act requires that petroleum activities are conducted in such a manner that shall enable a high level of safety to be maintained and further developed in accordance with technological developments and laws relating to health and safety.[23] A licensee is also required to identify the hazards and evaluate the risks associated with any work performed in the course of petroleum activities carried out,

[18] Occupational Safety and Health Act 2006, Preamble.
[19] *Ibid* section 18(1).
[20] *Ibid* section 18(2).
[21] Ibid Section 5.
[22] Ibid (n.18).
[23] Section 18 of the Occupational Safety and Health Act, 2006

The protection and control over hazards are to comply with the provisions of the Act and regulations[24]. The Bill requires that different stakeholders undertake necessary safety precautions to ensure the safety of any persons employed or otherwise present or in the vicinity of any installation and to protect the environment and natural resources, including precautions to prevent pollution.

The environmental health and safety regulatory framework for oil exploration and production in Uganda is still new and inadequate in some areas on environmental regulation. This is in addition to limited financial and human resources that humper the implementation of its provisions. The highlighted challenges are exacerbated by inadequacies in public awareness of the principles and provisions pertaining to the supposedly protective policy and legal framework. Environmental health and safety are exposed to fairly higher risk of harm the, the during oil exploration and production hence the need for measures aimed at minimizing such harm while maximizing the protections afforded to the ecologically/biodiversity sensitive areas. Thus, managing the process of „environmental health and safety in oil" requires strategies that address issues of environmental health and safety management sustainability.

1.3 Statement of the problem

Uganda has developed policy and legal instruments regulating the oil and gas activities and the general issues of environmental health and safety regulation starting with The 1995 Constitution of Uganda which establishes the right to a clean and health environment.[25] This is supplemented by various legal instruments and regulations such as The Petroleum (Exploration, Development and Production) Act, 2013 which advocates for compliance with environmental, health and safety principles, The Occupational Safety and Health Act, 2006 which ensures that there is safety of workers in and around the industries and also that there is protection from injuries[26], diseases and good working conditions, this is also supported with section 4(c)[27]. In addition thereseems to be no political will and commitment towards environmental health and safety law compliance since the government tend to be more skewed towards development than

[24] Ibid
[25] Article 39 of the Republic of Uganda Constitution as amended, 1995
[26] Section 99 (c) of the Occupation Safety and Health Act, 2006
[27] The Petroleum (Exploration, Development and Production) (Health, Safety and Environment) Regulations, 2016

environmental health and safety conservation which has led to the weak enforcement of the environmental health and safety legal regime.

Due to the above weak enforcement the operators themselves have largely remained defiant and there is a remote likelihood that they will comply with the requirements prescribed by most of the above laws. Furthermore, in most of these industries the working conditions are neither appropriate nor convenient for the welfare and wellbeing of workers. These employees are enduring long hours of work without protective gear, workplaces with poor hygienic conditions, poor pay and many other grievances. They have to put up with all these issues in spite of such being contrary to the provisions on health and safety as per the Occupational Safety and Healthy Act of 2006.[28] This therefore shows that despite the presence of well a crafted legal and policy framework environmental law, Safety and Health compliance may remain elusive and a mere illusion.[29] Therefore the purpose of this paper is to examine the extent to which specific playersin Uganda‟s oil and gas industry are compliant with environmental, safety and healthy laws that are enforced by regulatory stakeholders.

1.4 Purpose of the Study

The main objective of this study was to analyse the extent of compliance is to environmental health and safety standards in the oil and gas industry in Uganda.

1.5 Justification of the Study

Uganda recently embarked on a commercial oil and gas exploration and production process. Commercial oil and gas deposits were confirmed in 2006 and were repealed, and new ones were enacted. Uganda further subscribed to international and regional laws and signed some agreements to this effect such as; the Rio Declaration 2012, International Labour Standards on occupational safety and health including the Occupational Safety and Health Convention, 1981 (No. 155), this is aimed at promoting occupational health and safety and improving working conditions. The switch to commercial oil and gas production activities poses several impacts

[28] The Minister for Energy and Mineral Development, Hon. Irene Muloni has been carrying out inspection of these industries in the Albertine Region and discovered several violations of these regulations
[29] A. Bainomugisha, op cit, at 3

towards environmental health and safety such as injuries, diseases especially on around the oil rigs, impacts on wildlife and ecosystems, aquatic impacts, human impacts and many others discussed in the subsequent chapters which through the deterrence and preventive theories are meant to be curtailed by these laws.

The research therefore assesses the sufficiency of these laws and the extent of compliance therewith and makes necessary recommendations to ensure that there is an increased complex environmental health and safety regulatory landscape, with focus on achieving and maintaining regulatory compliance, protecting employee health and safety and managing potential business liabilities with the push for the industry to improve environmental sustainability efforts. This is also in line with the objective of Environmental health and safety which is to protect workers, the public, and the environment and to comply with applicable laws and to protect the company‟s reputation. Therefore this research study is designed to benefit institutions that are responsible for ensuring compliance to environmental health and safety standards such as the Ministry of Energy, Ministry of Labour, international and domestic Oil and Gas Companies and Ugandan local communities around areas with activities of oil and gas production . That assertion is basedupon the conceptual framework through conserving the Environment and also protecting the health and safety of the workers and enabling Uganda develop a better legal and institutional framework to ensure that there is environmental health and safety compliance in the oil and gas industry in Uganda.

1.6 Aims and Objectives

a) To identify the environmental health and safety impacts caused by oil and gas exploration and production sector in Uganda.

b) To analyze the extent of compliance with the national policy, international and regional legal framework that provides for environmental health and safety standards during the oil and gas exploration and production industry in Uganda.

c) To propose mechanisms through which the enforcement and regulatory stakeholders could potentially improve the levels of compliance with Uganda‟s environmental health and safety law.

1.7 Research Questions

a) What are some of the major international, regional and national legal instruments governing environmental health and safety standards in the oil and gas industry in Uganda?

b) What are the negative consequences of oil and gas activities on the environmental health and safety of the employees and surrounding communities?

c) To what extent have the oil companies, regulatory institutions and the Government complied with environmental, safety and health standards in oil and gas exploration and production?

d) What mechanisms can be put in place to strengthen compliance to environmental health and safety compliance in Uganda?

1.8 Scope of the Study

The study places emphasis on the development of the oil industry in Uganda, the activities and processes involved in oil and gas exploration and production, environmental health and safety impacts of oil and gas exploration and production standards basing on the international, regional and national legal frame work governing the oil and gas industry. The study examines the extent of compliance, discusses environmental health and safety rights while concentrating on the right to a clean, safe and healthy environment, and proposes mechanisms for improving environmental health and safety law compliance and implementation of safety and healthy mechanisms and regulations in the oil and gas industry of Uganda. The study finds this necessary given the weak enforcement of the existing regulations notwithstanding poor institutional framework. The study focused on the general overview of compliance with environmental health and safety standards in the oil and gas industry of Uganda.

1.10 Limitations of the Study

The study was hampered by insufficiencies in published literature in the field of oil and gas exploration and production particularly within the Ugandan perspective, especially on the subject of environmental health and safety (EHS) compliance. Additionally considering the political nature of the oil resource, there is a high likelihood that some of the might information likely to

be inaccessible because of a lack of transparency especially to do with documents relating to oil and gas exploration and production. The technical nature of the processes and activities, even some of the relevant present literature was difficult to synthesize and contextualize on behalf of the researcher whose skills were still developing.

The study was purely doctrinal legal research based on desk and library materials so the researcher did not physically collect data from respondents. It was restricted to analysis of legal concepts and principles of law, statutes, cases and rules concerning environmental health and safety in the oil and gas industry in Uganda which is better suited to bring out the main objective of the study which is to determine whether there is compliance with environmental health and safety standards.

1.11 Chapter Synopsis

The first section of the study provided an overview of the oil exploration and production process. The stages of oil exploration and production are analysed and the stage that Uganda has reached is considered. The second section traced the development of oil exploration and production in Uganda from 1920 up to the present day. The third section identified the possible environmental risks of oil exploration and production and highlights some of the existing environmental impacts registered as a result of ongoing exploration processes. The fourth section analyzed the application of the Environmental Impact Assessment (EIA) process in the oil exploration and points out the challenges of implementing the EIA process in Uganda. The fifth section reviewedthe policy and legal environmental tools that are applicable to oil exploration and production.The section also reviewed the draft new oil and gas law. The final section is the conclusion and highlights some recommendations to improve the existing regulatory framework for oil exploration and production in Uganda.

1.12 Conclusion

In light of the foregoing discussion it is clear that Uganda is soon joining the international oil producing community, with reserves going up to 3.5 billion barrels.

It is also noteworthy that due to the long history of fuel scarcity in Uganda compared to the exponential consumption rates, Ugandans are so optimistic that probably the imminent production of oil at home may be a great blessing.

However it is also clear from the above that if Uganda‟s oil exploration and production activities are either unplanned or mismanaged the oil curse shall not only manifest through environmental health and safety degeneration but also suffer economic retrogression just like other African countries . Uganda has laws and policies which can promote environmentally friendly oil activities but the question is whether the players in the industry are complying. This question continues to guide this study all through the subsequent chapters.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The country cannot sacrifice its ecosystem for economic gain. The reason is that hydrocarbon exploration and production industry by its nature has the potential to cause environmentalproblems and operational problems such as oil spills, gas flaring and pollution inter alia. For all intents and purposes restoration and decommissioning are very critical because the environment at the time of decommissioning should not be degraded.

Besides, such health hazards as physical like noise radiation and vibration, phycological like stress, chemical hazards like toxic explosives, biological like fungi virus or bacteria leave a lot tobe desired. Companies do not work in an area in isolation hence the need to assess the impacts therefrom and the regulatory compliance to the applicable laws and institutional and legal and regulatory frameworks to mitigate impacts and extent of compliance are very necessary.

2.1 Theoretical Framework

The study is premised on the theories applicable to compliance with environmental health and safety that is the deterrence[30] by Apel, R. (2016) and the Citizen Enforcement Theory which fosters a more comprehensive understanding of the conceptual bases of legal principles and a range of rules and procedures that touch on a particular area of oil and gas production and exploration related activities. It has been submitted that effective environmental health and safety law enforcement is instrumentally vital in ensuring the effective realization goals of required environmental health and safety standards.[31] Hence environmental health and safety enforcement like any other government regulation has been based on the theory of deterrence. This theory

[30] Apel, R. (2016). On the deterrent effect of stop, question, and frisk. *Criminology & Public Policy*, *15*(1), 57–66. doi: 10.1111/1745-9133.12175.
[31] Supra Note 44

assumes that persons and businesses act rationally to maximize profits and will comply with the law only where the costs of noncompliance outweigh the benefits of noncompliance.[32]

Under this theory the role of the enforcement agencies is to make penalties and the probability of detection high enough so that it becomes irrational and/or unprofitable for the regulated entities to violate the law.[33] The theory also explains the development of criminal environmental law, that is, imposition of criminal sanctions against violators of environmental law.[34] The deterrence theory therefore imposes criminal sanctions to shape regulated entities" preferences, incapacitate violators, whereas meeting preventive purposes of sending for deterring similar acts among other actors in the general public in order to promote the rehabilitation of the damaged environment.[35] Under this theory, the most emphasized tools often referred to in explaining conceptualization of enforcement are regular inspections and monitoring of activities to detect noncompliance.

The Citizen Enforcement Theory on the other hand presupposes the role of individual or corporate citizens in the enforcement of environmental health and safety compliance. It allows citizens to sue companies/ defiant individuals for violations when the government fails to do so. The theory also presumes that citizens can enforce environmental law compliance through their political behavior, market behavior and direct participation. It is under this theory that people cansue for enforcement of their right to a clean and healthy environment and CSOs are founded upon bases of enforcing environmental rights for voiceless victims through causes of Public Interest Litigation (PIL) nature.[36] The aforementioned theories have however been affected by challenges of corruption alongside impediments of limitations in judicial capacity. Therefore, this paper examines the national, regional and international legal framework to ascertain the extent to which these theories are reflected, how the operators of the industry have been

[32] A. Heyes, Implementing Environmental Regulation: Enforcement and Compliance at pp.2-4
[33] Ibid
[34] A. Mark Cohen (1992) "Environmental Crime and Punishment: Legal/Economic Theory and Empirical Evidence on Enforcement of Federal Environmental Statutes in Journal of Criminal Law and Criminology" Vol. 84 (Issue 4 Winter) at 1059
[35] Ibid
[36] Constitution of Uganda of the Republic of Uganda, 1995 article 39; National Environment Act Cap.153 s.3 and National Forestry and Tree Planting Act No.8/2003 s.5

controlled by these theories and how the same can be strengthened to crystallize those oil and gas production activities that are environmentally friendly in Uganda‟s petroleum sector.[37]

In the same accord this theory upholds safety and health through the Occupational Health and Safety Act which requires that petroleum activities to be conducted in such a manner as to enable the maintenance of a high level of health and safety approaches and further technological development which are accordance with laws relating to health and safety.[38] A licensee is also required to identify the hazards and evaluate the risks associated with any work performed in the course of the petroleum activities carried out under the license that constitute a hazard to the health of an employee for the purpose of that work and the steps that need to be taken in order to comply with the provisions of the Act and regulations made under the Act. The Act requires that necessary safety precautions must be undertaken in order to ensure the safety of any persons employed or otherwise present or in the vicinity of any installation and to protect the environment and natural resources, including precautions to prevent pollution.[39] These provisions can henceforth be enforced by citizens as above provided. Alternatively, different players in the industry without provisions such as the license to engage in exploration and production could be deterred from joining the industry.

2.2 The environmental health and safety impacts caused by oil and gas exploration and production sector in Uganda.

Worker health and safety: Working on site in the oil and gas extraction industry is inherently dangerous, with a fatality rate of 15.6 per 100,000 workers (four times higher than the overall rate among U.S. workers).[40] The occupational health and safety implications of UOG, therefore, are a topic of significant public health importance,[41] especially considering that oil and gas

[37] E Kaweesi, op cit 11 at 24
[38] Op cit 14
[39] Ibid
[40] Bureau of Labor Statistics. Fatal and nonfatal occupational injuries and illnesses in the oil and gas industry. Available at: http://www.bls.gov/iif/oshwc/cfoi/osar0018.htm. Accessed January 10, 2019.
[41] Saunders PJ, McCoy D, Goldstein R, Saunders AT, Munroe A. A review of the public health impacts of unconventional natural gas development. Environ Geochemistry Health. 2018;40:1–57.

extraction activities are exempt from a number of Occupational Safety and Health Administration (OSHA) regulations and OSHA‟s Process Safety Management standard.[42]

Beyond physical hazards, such as falls, published studies conducted at UOG sites have reported high concentrations of and increased exposures to airborne toxic chemicals that often exceed existing health standards or acceptable risk levels.[43] These exposures include respirable silica, nitrogen oxides, sulfur dioxide, particulate matter, formaldehyde, heavy metals, carbon monoxide, volatile organic compounds (e.g., benzene, trimethyl benzene, xylenes, aliphatichydrocarbons, and polycyclic aromatic hydrocarbons), ozone, and methane. Hydrogen sulfide exposure is also a known and sometimes deadly occupational hazard among oil and gas workers, including those in the UOG industry.[44] Inhalation of silica sand is of particular concern for UOG workers, especially those without full respirator protection when working with the sand. Transporting, moving, and filling tons of sand onto and through sand movers, along transfer belts, and into blenders, as well as using the sand as a proppant during hydraulic fracturing, generates dust containing respirable crystalline silica; inhaling this dust can cause silicosis and even cancer.[45]

While not extensively covered in this policy statement, mining of the sand for hydraulic fracturing also poses risks, including air quality degradation, land-use change, and water contamination concerns, and should be researched and addressed further. There are also unique occupational health concerns associated with the potential for exposure to the chemical constituents of hydraulic fracturing fluids as well as hydrocarbon gases and vapors.[46] For example, exposures to hydrocarbon gases and vapors and/or oxygen-deficient atmospheres

[42] Occupational Safety and Health Administration. Process safety management background document. Available at: https://www.regulations.gov/#!documentDetail;D=OSHA-2013-0020-0107. Accessed November 10, 2020.
[43] Esswein E, Breitenstein M, Snawder J, Kiefer M, Sieber WK. Occupational exposures to respirable crystalline silica during hydraulic fracturing. J Occup Environ Hyg. 2013;10:347–356.
[44] Bureau of Labor Statistics. Fatal occupational injuries by selected characteristics, 2003–2014. Available at: https://www.bls.gov/iif/oshwc/cfoi/all_worker.pdf. Accessed November 10, 2020.
[45] Paulik LB. Emissions of polycyclic aromatic hydrocarbons from natural gas extraction into air. Environ Sci Technol. 2016;50:7921–7929.
[46] Ibid

during manual gauging or sampling of production tanks are believed to be primary or contributory factors in nine workers‟ deaths in recent years.[47]

Air quality and methane leaks: Air pollutants reported during various phases of UOG operations, including carbon dioxide, methane, other hydrocarbons, particulate matter, ozone, nitrogen oxides, hydrogen sulfide, sulfur dioxide, and silica, are of public health concern.[48] UOG development has significant potential to impact local and regional air quality throughout its life cycle. In addition, UOG operations are "spatially intense," in that wells are drilled in a concentrated area and include the use of generators, trucks, and other equipment that create an industrialized effect near well sites, leading to localized air pollution. Air pollution can be relatedto activity type, wind speed and direction, and cloud cover. Several studies, including those cited here, have documented higher than average levels of benzene and volatile organic compounds associated with UOG production near development areas, leading to elevated levels of ambient ozone[49] as well as a greater risk of respiratory, neurological, and hematological health impacts, such as cancer among residents living less than half a mile from UOG wells.[50] While there is a need for more studies measuring direct exposures from UOG air pollution across the production process, asthma patients in one case-control study were noted to have more frequent exacerbations related to proximity to well sites.[51] Volatizing compounds from open-air impoundments, including sludge that has dried, present air quality concerns.[52] Elevations in particulate matter and volatile organic compounds have also been noted near compressor and

[47] Harrison RJ, Retzer K, Kosnett MJ, et al. Sudden deaths among oil and gas extraction workers resulting from oxygen deficiency and inhalation of hydrocarbon gases and vapors United States, January 2010–March 2015. MMWR Morb Mortal Wkly Rep. 2016;65:6–9.

[48] Concerned Health Professionals of New York and Physicians for Social Responsibility. Compendium of scientific, medical, and media findings demonstrating risks and harms of fracking. Available at: http://concernedhealthny.org/compendium/. Accessed November 10, 2020.

[49] Ibid

[50] McKenzie LM, Witter RZ, Newman LS, Adgate JL. Human health risk assessment of air emissions from development of unconventional natural gas resources. Sci Total Environ. 2012; 424:79–87.

[51] Rasmussen SG, Ogburn EL, McCormack M, et al. Association between unconventional natural gas development in the Marcellus Shale and asthma exacerbations. JAMA Intern Med. 2016;176:1334–1343.

[52] California Council on Science and Technology. Well stimulation in California. Available at: https://ccst.us/projects/hydraulic_fracturing_public/SB4.php. Accessed January 10, 2020.

processing stations. Emissions from processing stations were shown to be significantly higher than those from well sites, and the peaks were found to be of serious concern.[53]

Development of UOG resources has increasingly become an important contributor to fugitive emissions and releases of methane, carbon dioxide, and other greenhouse gases known to exacerbate global warming. In addition, flaring of natural gas during UOG activities potentially releases radioactive particles and other toxic chemicals that diminish local air quality and invariably contribute to public health problems.[54] In 2012, the EPA estimated that the 60,801 natural gas wells alone in the United States emit 273.6 gigagrams of methane per year, although methane data from across North America suggest that this figure may be underestimated.[55] When underground natural gas storage well leaks and failures are factored in, such as the major Aliso Canyon leak in California in 2015–2016,[56] the issue of methane leakage into the atmosphere grows exponentially.

Health studies: Approximately 17.6 million people in the United States live within about a mile of at least one active oil and/or gas well.[57] A 2015 review of the human health literature suggested that early studies linking UOG to adverse health outcomes were not sufficiently rigorous while at the same time pointing out that the literature did not rule out health effects.[58]As of February 2018, however, more than a dozen original epidemiological studies on the impacts of UOG had been published in the scientific literature, mostly involving populations in Pennsylvania, Colorado, and Texas. Overall, symptoms of exposure to UOG pollutants include

[53] Brown DR, Lewis C, Weinberger BI. Human exposure to unconventional natural gas development: a public health demonstration of periodic high exposure to chemical mixtures in ambient air. J Environ Sci Health. 2015;50:460– 472.
[54] Webb E, Hays J, Dyrszka L, et al. Potential hazards of air pollutant emissions from unconventional oil and natural gas operations on the respiratory health of children and infants. Rev Environ Health. 2016;31:225–243.
[55] Miller SM, Wofsy SC, Michalak AM, et al. Anthropogenic emissions of methane in the United States. PNAS. 2013;110:20018–20022.
[56] California Air Resources Board. Determination of total methane emissions from the Aliso Canyon natural gas leak incident. Available at: https://www.arb.ca.gov/research/aliso_canyon/aliso_canyon_methane_emissions-arb_final.pdf. Accessed November 10, 2020.
[57] Czolowski ED, Santoro RL, Srebotnjak T, Shonkoff SB. Toward consistent methodology to quantify populations in proximity to oil and gas development: a national spatial analysis and review. Environ Health Perspect. 2017;125:086004.
[58] Werner AK, Vink S, Watt K, Jagals P. Environmental health impacts of unconventional natural gas development: a review of the current strength of evidence. Sci Total Environ. 2015;505:1127–1141.

dermal and respiratory symptoms[59] as well as chronic rhinosinusitis, migraine, and fatigue.[60] Several recent studies have identified links between UOG development and various pregnancy and birth outcomes, including but not limited to the investigations cited here.[61] Asthma exacerbation is also of concern.[62] Another study indicated that maternal proximity to oil and gas wells was associated with 30% increased odds of congenital heart defects; also, there was a significant small-magnitude negative association with preterm births along with a positive association with neural tube defects. This study, however, did not distinguish between conventional and UOG wells.[63]

Physical hazards: UOG development is an intensive industrial process producing significant amounts of noise and light pollution, as well as noxious odors, raising health concerns for residents.[64] These physical hazards can be a significant source of stress, contributing to human illness among nearby community members. Light pollution and noise pollution have been linked to a variety of health concerns, including disruptions in circadian rhythms, mental health effects, and cardiovascular harm.[65]

Additional physical hazards have been linked to UOG development due to the geology in which the drilling is occurring. There has been an increase in seismicity in several states where UOG development is active, including Texas, Ohio, and Oklahoma; this issue has been linked to both UOG production and deep well injection of wastewater.[66] Not only can severe earthquakes cause injuries, but they may also affect health through stress pathways and anxiety.[67] The formations that are being targeted for UOG extraction include radioactive elements, and while these

[59] Rabinowitz PM, Slizovskiy IB, Lamers V, et al. Proximity to natural gas wells and reported health status: results of a household survey in Washington County, Pennsylvania. Environ Health Perspect. 2015;123:21.
[60] Tustin AW, Hirsch AG, Rasmussen SG, Casey JA, Bandeen-Roche K, Schwartz BS. Associations between unconventional natural gas development and nasal and sinus, migraine headache, and fatigue symptoms in Pennsylvania. Environ Health Perspect. 2017;125:189.
[61] Ibid
[62] Ibid
[63] Stacy SL, Brink LL, Larkin JC, et al. Perinatal outcomes and unconventional natural gas operations in southwest Pennsylvania. PloS One. 2015;10:e0126425.
[64] Witter RZ, McKenzie L, Stinson KE, Scott K, Newman LS, Adgate J. The use of health impact assessment for a community undergoing natural gas development. Am J Public Health. 2013;103:1002–1010.
[65] Hays J, McCawley M, Shonkoff SB. Public health implications of environmental noise associated with unconventional oil and gas development. Sci Total Environ. 2017;580:448–456.
[66] Keranen KM, Weingarten M, Abers GA, Bekins BA, Ge S. Sharp increase in central Oklahoma seismicity since 2008 induced by massive wastewater injection. Science. 2014;345:448–451.
[67] Casey JA, Goldman-Mellor S, Catalano R. Association between Oklahoma earthquakes and anxiety-related Google search episodes. Environ Epidemiol. 2018;2:e016.

compounds are naturally occurring and harmless at this depth in the earth, they can pose a hazard to humans after returning to the surface as tailings and flowback fluids.[68]

Community-level impacts: There are a variety of both opportunities and concerns within UOG communities. Some residents acknowledge the economic opportunity of higher-paying jobs and increased utilization of community businesses such as hotels, restaurants, auto repair companies, and health services.[69] However, these economic benefits have come with community burdens such as rising housing costs, forcing low-income residents into unstable housing, and increased use of human services without increased funding to support growing and changing demographics. Evidence from Texas, for example, suggests that oil and gas wastewater disposal wells were disproportionately sited in communities of color and lower socioeconomic status.[70] A Pennsylvania study showed that residents who live in census tracts potentially placing them at risk of being exposed to UOG well pollution are significantly less wealthy than residents of otherareas in the state.[71] Such inequities put nearby residents at higher risk of health problems andmay increase their health care costs disproportionately. In addition, obtaining private drinking water tests is expensive. If drilling companies are not required to pay for and/or conduct these water quality tests, the results may be incomplete and may add an undue economic burden to residents who live near drilling activity.

2.3 Related literature

Climate change may be due to natural processes such as change in the volcanoes or internal variability in the climate system or due to human influences such as changes in the composition of the atmosphere or land use.

Climate change will mean big change for animals around the world. So if we care aboutincredible species like snow leopards, turtles and polar bears to mention but a few, we must care

[68] Konkel L. What‟s NORMal for fracking? Estimating total radioactivity of produced fluids. Environ Health Perspect. 2015;123:A186.
[69] Powers M, Saberi P, Pepino R, Strupp E, Bugos E, Cannuscio CC. Popular epidemiology and "fracking": citizens‟ concerns regarding the economic, environmental, health and social impacts of unconventional natural gas drilling operations. J Community Health. 2015;40:534–541.
[70] Johnston JE, Werder E, Sebastian D. Wastewater disposal wells, fracking, and environmental injustice in southern Texas. Am J Public Health. 2016;106:550–556.
[71] Ogneva-Himmelberger Y, Huang L. Spatial distribution of unconventional gas wells and human populations in the Marcellus Shale in the United States: vulnerability analysis. Appl Geography. 2015;60:165–174.

about how climate change will make it harder for them to find food and decrease their habitats. The amazon for example is home to an astonishing in all the known species of both flora and fauna on earth.

Climate affects rainfall patterns meaning both drought and flooding will be common for example to once every 16 years and more intense because even a small increase in global temperature can destabilize the water cycle and could make water scarcity much worse.

With the increased climate changes driven by human caused emissions to the atmosphere it stands to reason that we face compromised air quality. This affects human health, especially children. Air pollution can led to asthma, heart and lung diseases.

Climate change: As the implications of accelerating climate change are becoming more apparent and urgent to address, the transition away from traditional fossil fuels to low-carbon energy choices becomes a necessary action.[72] While carbon dioxide is currently the most abundant and longest-lasting greenhouse gas in the atmosphere, methane emissions pose significant harms to our climate. Methane, a relatively short-lived greenhouse gas, is 84 times more potent than carbon dioxide over a 20-year time frame.[73] During both typical and abnormal (e.g., blowouts) UOG processes, methane is released into the atmosphere.[74] Yet, UOG development has been mistakenly promoted as a transition from fossil fuel–intensive forms of energy such as coal to cleaner and renewable energy sources[75] without a full understanding of its impacts on climate disruption. The problem is exacerbated by public misunderstanding and lack of knowledge about the climate-disrupting effects of methane.

Promotion of UOG development has also reduced allocation of resources and delayed thetransition to and use of real sustainable and clean energy sources such as wind, solar, geothermal,

[72] American Public Health Association. Public health opportunities to address the health effects of climate change. Available at: https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2015/12/03/15/34/public-health-opportunities-to-address-the-health-effects-of-climate-change. Accessed November 10, 2020.
[73] Stocker TF, Qin D, Plattner GK, et al. Climate change 2013: the physical science basis. Available at: http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf. Accessed October 10, 2020.
[74] Alvarez RA, Zavala-Araiza D, Lyon DR, et al. Assessment of methane emissions from the US oil and gas supply chain. Available at: http://science.sciencemag.org/content/early/2018/06/20/science.aar7204. Accessed October 10, 2020.
[75] Massachusetts Institute of Technology. The future of natural gas. Available at: http://energy.mit.edu/wp-content/uploads/2011/06/MITEI-The-Future-of-Natural-Gas.pdf. Accessed November 10, 2020.

and wave.[76] Thus, to prevent worsening climate change and to truly transition to a clean energy economy, reducing or eliminating methane emissions from oil and natural gas infrastructure will be essential.

In addition, in certain areas oil and gas infrastructure and operations are more vulnerable to threats made worse by climate change. In a technical assessment of California‟s existing and operating natural gas underground facilities, for example, the California Council on Science and Technology found that flooding hazards from sea-level rises remain a concern for underground gas sites in low-lying areas and noted that further mitigation strategies may be necessary to protect facilities. Another hazard identified was the threat of wildfires, as many facilities are located in areas at increased risk for wildfires.[77] The vulnerability of oil and gas facilities to climate threats across the country provides further support for the need to transition to renewables as a more resilient means of fulfilling the country‟s energy needs.

Alexandra S. Wawryk in his article "International Environmental Standards In The Oil Industry: Improving the Operations of Transnational Oil Companies in Emerging Economies"[78] avers that emerging economies[79], are also known as "developing countries",[80] hold the majority of the world‟s proved oil reserves, and also accounts for the majority of the world‟s production of crude oil.[81] Consequently the exploitation of oil remains a priority for most governments of emerging economies, this partly because of the revenue associated with the exploitation of this subsurface resource proving a major source of foreign income for most emerging economies, majority of which are among the poorest countries in the world, and have large foreign debts[82]. The oil

[76] Staddon PL, Depledge MH. Fracking cannot be reconciled with climate change mitigation policies. Environ Sci Technol. 2015;49:8269–8270.

[77] California Council on Science and Technology. Long-term viability of underground natural gas storage in California: an independent review of scientific and technical information. Available at: http://ccst.us/publications/2017/Full%20Technical%20Report.pdf#page=508. Accessed November10, 2020.

[78]http://www.ugandaoilandgas.com/linked/international_environmental_standards_in_the_oil_industry.pdf (accessed 3 Sept 2020) (Please add the author and follow the correct pattern of citing your sources starting with the name of author, title and journal article

[79] Development Assistance Committee, *Development Co-operation Report 1997* (OECD, Paris, 1998) pA101; OECD, *External Debt Statistics* (OECD, France, 1997) at 4-5.

[80] Third World countries, "emerging market economies", "emerging market systems" and "emerging markets

[81] As a general guide, at the end of 2000 the OECD countries held 8.1% of the world‟s proven reserves of oil and accounted for 28.1% of world production of oil: BP Amoco, *Statistical Review of World Energy 2001*, www.bpamoco.com.

[82] Michael L. Ross The Oil Curse: How Petroleum Wealth Shapes the Development of Nations, Princeton University Press, 2012

industry is also a source of taxation revenue and employment and offers the opportunity for the cross boarder transfer of technological resources from developed to developing countries.

The scholar further asserts that Oil and gas exploration and production can potentially cause severe environmental degradation, not only to the physical environment,[83] but also to the health, culture, and economic and social structure of local and indigenous communities.[84] However, environmental laws in emerging economies are often ineffective because they are inadequate in terms of their substantive content and because the challenges associable with inadequate enforcement. This has led a growing outcry amongst academics, practicing lawyers and activists in fields of human rights and environmental protection demand for a voluntary improvement in the performance of transnational oil companies especially in countries with inadequate environmental laws.

Furthermore, he contends that Oil companies and the industrial stakeholders have also recognised that international oil companies that are operating in emerging economies with inadequate environmental laws ought to adopt the best practice. For example, members of the American Petroleum Institute are responsible for "obeying all laws and best practice" as part of their pledge to uphold the aspects comprised in the program of continuous health, safety and environmental improvements.[85] Similarly in the Australian context there is a presence of the 1997 *Environmental Policy* from the Australian Petroleum Production and Exploration Association (APPEA) which states that the APPEA encourages and supports member companies to comply, at a minimum, with applicable laws, regulations, standards and guidelines for the protection of the environment and in their absence adopt the best practicable means to prevent or minimise adverse environmental impacts.[86]

[83] The case Ngoni v Shell

[84] In some cases, the impact of environmental degradation on the culture and traditional lifestyle of the indigenous community is so devastating that a breach of human rights occurs. Inter-American Commission on Human Rights, *Report on the Situation of Human Rights in Ecuador*, OAS Doc OEA/Serv.L/V.II.96, doc 10, rev 1, 24 April 1997, Inter-American Commission on Human Rights www.cidh.oas.org/country.htm.

[85] American Petroleum Institute (API), *API Environmental Stewardship Pledge for CAREFUL Operations*, www.api.org, accessed 27 February 2002.

[86] Australian Petroleum Production and Exploration Association Limited (APPEA), *Environmental Policy*, June 1997, www.appea.com.au/environment/ Regional Association of Oil and Natural Gas Companies in Latin America and the Caribbean (ARPEL), *Code of Environmental Conduct*, May 1997, www.arpel.org/code_e_c.htm.

The scholar questions that what is "best practice" in the international oil industry? What standards should be employed? No treaties have been negotiated with the specific aim ofregulating the onshore activities of the oil and gas exploration and production industry operating within the borders of individual states. Historically this stems from the view that the regulation of onshore resource exploitation precisely falls within the domestic jurisdiction of concerned states. In this context, the standards, guidelines and best operating practices developed by oil industry association bodies, and nongovernmental and intergovernmental organizations (NGOs and IGOs) constitute the some of the major efforts aimed at achieving uniform standards and operating practices across the globe.

The article further describes five major practices for protection of the environment that are emerging within the international oil industry and that will, reduce the negative impacts of oil and gas exploration and production on the physical and cultural environment in the event of adequate implementation. Examples of the above practices include environmental and social impact assessment (EIA and SIA); environmental management systems (EMS); environmental performance evaluation (EPE); environmental monitoring and auditing; and environmental reporting. It discusses the legal implications that are arising from the use of these standards and guidelines and makes suggestions for future developments. These environmental principles and best practices will be widely examined in further chapters of this research study as well as the health and safety principles which are not discussed in this article due to its being limited to environmental standards in the Oil and Gas Industry.

Emmanuel Kaweesi, in his article “Environmental Law Compliance and its Implications for Oil and Gas Exploration in Uganda” connotes that Environmental law compliance is a phenomenon that connotes the undertaking of all development activities in a way that conforms to environmental laws, standards, and receptive responsiveness to other regulatory requirements.[87] Environmental law compliance covers a number of useful dimensions such as compliance with environmental quality standards, Strategic Environmental Assessment (SEA), Environmental Impact Assessment (EIA); respect of environmental rights especially protecting the right to a clean and healthy environment, transparency and accountability, public participation and many

[87] Emmanuel K, “Environmental Law Compliance and its Implications for Oil and Gas Exploration in Uganda” at Page 13.

others.[88] Relatedly important, environmental compliance is ensured through the processes of environmental enforcement. Enforcement refers to a set of actions or tools that are used by the Government, either directly or indirectly usually with the help of its lead agencies, in order to promote compliance environmental law. In brief the tools of environmental enforcement include environmental monitoring, environmental inspection, environmental audits, refundable performance deposit bonds, environmental restoration orders, deterrence fines among manyothers. Henceforth in ensuring compliance with contemporary norms of environmental law, the effective enforcement of laws in in this context remain instrumentally vital .[89]

Emmanuel Kaweesi first concentrates on the history and current status of oil exploration and production in Uganda, and then discusses the main processes of oil exploration and production.[90] Bearing in mind that those processes have posed significant challenges to the extent of compliance with environmental law. It proceeds on a theory that if no preventive or at least mitigation measures are taken, then the activities can lead to disastrous environmental consequences.[91] The paper goes a step further to discuss the national, regional and international standards that regulate activities of the oil and gas industry in Uganda.[92] But the only way to forecast those consequences by having improvements in compliance with legal regimes in the oil industry. Hence the paper also underscores Uganda‟s degree of compliance with legal and policyenvironmental law requirements and the extent by which such compliance has been exhibited by operators in the oil and gas sector.

The study contends that accordingly, inquiry is made into the extent of compliance with Environmental Impact Assessment (EIA); Strategic Environmental Assessment (SEA); Environmental Quality Standards (EQS); Environmental Monitoring(EM); Environmental Audits and Reviews(EAR); Pollution control; and Transparency and Accountability(PCTA). Thestudy concludes that there is hardly evidence of compliance with environmental law in Uganda‟soil and gas industry notwithstanding the presence of several national, regional and International regulation standards and proposal suggesting a number of recommendations. Stakeholders

[88] Ibid
[89] Ibid
[90] Ibid
[91] Ibid
[92] ibid

should also make rather sound waste management plans, come up with produced water management strategies; bio-diversity offsets can go a long way in-x preventing loss of fauna; employ environmentally sound technology; install air quality monitoring systems; identify potential hazards and develop hazard-specific control or mitigation mechanisms; government should take up its role; strengthen the role of civil society organizations; PSAs be made public; strengthen the legal and institutional framework; streamline national spending options and expand stakeholder participation by encouraging public participation, role of the opposition and international observers.

Emmanuel Kaweesi is however similar to Alexandra S. Wawryk in such a way that he discusses in detail environmental law compliance whereby he brings out that there is need to strengthen enforcement of Environmental Law standards in Uganda. The distinguishing factor is that this research study involves detailed analysis of environmental standards as well as health and safety standards such as the Occupational Health and Safety Act of 2006.

It has been submitted that in order to obviate the social and environmental costs of oil and gas activities, mechanisms for conflict management (conflict avoidance and dispute resolution) should be reflected in the relevant laws. Mechanisms for compensating social and economic impacts should be articulated in the laws or petroleum regulations and that there is need for strengthened capacity for environmental management and monitoring, to wit guidelines onCorporate Social Responsibility.[93] On this subject Sophie Des Clers observes that Africa has 8% of the world‟s oil reserves and nearly 50% of this is in Sub-Saharan Africa. That the impact ofoil production on African national economies has however been mixed with numerous instances of high environmental and social effects and records of human rights abuse.[94] With due respect, although the author acknowledges possibility of environmental devastation as a result of oil and gas exploration and production activities she offers very little guidance on how this should be ameliorated, and if anything, the study focuses on Central and West Africa but not East Africa or the Albertine Graben in particular.

[93] AFIEGO (2010) Proceedings Report of the Training Workshop on Oil Governance for National Development; Strengthening the oversight role of selected Members of Parliament and CSOs, at 21

[94] Des Clers (2007) Mitigating the Impacts of Oil Exploration and Production on Coastal and Wetland Livelihoods in West and Central Africa, at 7.

The UNEP notes that oil and gas exploration and production cannot go without ecological effects. That the matrix of activities undertaken during exploration and production expose the environment to many deleterious incidents ranging from oil spills, damage to land (terrestrial contamination), accidents and fires, and incidents of water and air pollution.[95] Those environmental impacts can in broad terms be categorized into human, socio-economic andcultural impacts; atmospheric impacts; aquatic impacts; terrestrial impacts and eco-system impacts. The activities are also associated with many potential emergencies.[96]

It is further observed that although national governments in different states have made some efforts towards sound environmental oil and gas exploration and production through policy and legislative framework, more is still needed especially in practice.[97] This publication is indeed very comprehensive and offered the most important guide to this research. However, it is so generalist in nature since it was intended for use by the whole United Nations International Community and to this extent it does not offer specific environmental approaches for protection of the Albertine Graben in relation to Ugandan laws and practices. Also the information in this publication is largely technical and may not be easily understood by non-experts yet the concerns of environmental protection especially implementation and enforcement, is done by those withno specific technical prowess in the area of oil and gas exploration and production.

The Ministry of Energy and Mineral Development also concedes that the development of the oil and gas sector in the country presents potential environmental challenges. It observes that it is so unfortunate for Uganda and in fact the rest of Africa to note that oil activities take place in the most ecologically sensitive and bio-diversity rich areas.[98] That with face of such an environmental satire, the planning efforts needed should intensify beyond ordinary. The author concedes that unregulated actions by the oil and gas industry can destroy habitats, lead to biodiversity damage and rapture important ecosystem services such as fresh water, and that bio- energy and emissions from the industry can indeed lead to the acceleration of global warming. Many negative environmental impacts are therefore identified by the Ministry as capable of

[95] UNEP (1997) Environmental Management in Oil and Gas Exploration and Production: An Overview of Issues and Management Approaches, at 2-3
[96] Ibid, at pp 11-15
[97] Ibid
[98]Ministry of Energy and Mineral Development, op cit, at 3

resulting from unregulated oil and gas activities. These range from socio-economic and cultural changes due to alteration in land use patterns and local population levels, to increase in gaseous and aqueous waste streams which may affect plant and animal communities due to changes in their environment arising from various alterations in water, air and soil/sediment quality and disturbance by noise, extraneous light and changes in vegetation cover.[99]

In response to this the Ministry observes that these negative impacts need to be mitigated and addressed to ensure eco-system integrity by updating general management plans and developing new ones taking into account the oil exploration activities.[100] However, the author gives no guidance on how these plans should specifically be developed and/or updated. In relation to waste management, the Ministry notes that waste management in oil and gas exploration and production has emerged as a challenge. Most of the drill mud contains heavy metals and rock cuttings which render it hazardous and since there is not yet any clear mechanism of handling this, operators have been instructed to containerize their waste.[101] This however in my view seems a mere postponement of the problem rather than being the solution.

Miguel De Cervantes in "Donor Engagement in Uganda‟s Oil and Gas Sector: An Agenda for Action. A Briefing by Global Witness, Oct 2010 on the Resource Curse (Paradox of Plenty) defines the term *"resource curse"* is a phenomenon by which natural resource wealth often results in poor standards of human development, bad governance, increased corruption and sometimes conflict.[102] According to Miguel De Cervantes, a celebrated 16th century Spanish author, gratification of wealth is not found in mere possession or in lavish expenditure, but in its wise application.[103]

It therefore follows that when a country experiences trends of a disproportionate increase in income, this potentially leads to harmful consequences on the economy e. For example in the 1960s, Netherlands experienced a vast increase in its wealth on discovering large Natural Gas deposits in the North Sea but unfortunately this apparently positive development had serious

[99] Ibid, at 30
[100] Ibid.
[101] Ibid, at 33
[102] "Donor Engagement in Uganda‟s Oil and Gas Sector: An Agenda for Action. A Briefing by Global Witness, Oct.2010
[103] See Miguel De Cervantes, "Don Quixote De La Mancha"

negative repercussions on important segments of the county‟s economy as the group of the “Dutch Guilders” who dealt in the resource became stronger, making other natural gas exporting sectors more expensive and less competitive.[104]

Citing with approval the National Oil and Gas Policy for Uganda, Kaweesi recognizes that if the country‟s Oil and Gas resources and revenues are not well managed, the petroleum sector has the potential to cause the most negative impacts on society. This is the so called “resource curse” and that according to the policy it is the negative effect of oil and gas resource utilization leadingto economic stagnation, environmental degradation and increased poverty. It is also called the Paradox of Plenty.[105] Indeed the greatest fear for most resource rich countries especially those new in the oil industry, is this resource curse. It is the term used to describe the failure of resource rich countries to benefit from their natural wealth.

The scholar[106] asserts that the laws, policies and institutions at play in any country have a big bearing on whether or not citizens of such a country will benefit from oil wealth. There are three processes that lead to the resource curse:[107] the first is currency appreciation due to resource revenues and its negative effects on the competitive position of other industries (Dutch disease). The second is the fluctuation in commodity prices and its disruptive effects. The third is the effect of political conditions such as rebellions and coup d‟états. The first two are purelyeconomic while the third is purely political.

The resource curse therefore bears political and economic connotations. Soros argues those there three factors in managing resource wealth; asymmetric agency, asymmetric information and asymmetric bargaining power, and those agency problems arise when the agents (governments) don‟t serve the interests of the principal (governed) as required by the Public trust doctrine.[108] Political conditions aggravate the resource curse in a sense that when leaders are in possession of revenues that has barely passed through the national budget or when the budgets are barely transparent, there is a high possibility of endangering accountability and democracy . States and

[104] E. Kaweesi, op cit at15
[105]Part 6 of the National Oil and Gas Policy, at page 30 as discussed by E. Kaweesi, ibid.
[106] Ibid
[107] M. Humphreys, Jeffrey D. Sachs & Joseph E. Stiglitz (Eds.) Escaping the Resource Curse (Foreword by George Soros, New York: Columbia University Press, (2007)
[108] Ibid

leaders that are able to generate revenue from the sale of oil and gas are less reliant on citizens and the state will have less need to engage with citizens, but rely on external sources of income from oil companies.

However, it has been submitted that the resource curse is not a claim that natural resource abundance is always or inevitably bad for economic growth or development.[109] This is because there are historical examples of successful resource development. Terry Lynn argues therefore that the resource curse rather refers to countries that are overwhelmingly reliant on oil revenues and that what matters most is not the inherent character of the resource itself but how the wealth generated by petroleum is shared and utilized. He further reiterates that the resource curse is a combination of factors such as oil price volatility, the Dutch disease, lagging skill accumulation and heightened inequality. Price volatility exerts a strong negative effect on budget discipline, control of public finance and national planning. The oil sector could led to an escalation infigures of the exchange rate by affecting the local currency while rendering other exportsnoncompetitive and making economic diversification very difficult. The noncompetitive sector places the funding burden on the oil sector and results in a permanent decline of other sectors.

Terry further argues that weak public institutional setup leads to overdependence on oil, and as a result of timing, pre-existing institutions are weakened or partially formed due to the influx of rents from petroleum thus resulting into a state that depends on the profits of oil (renter state). Politically, authoritarian rulers use petro dollars to pass favourable legislation, create varsity militaries and to buy off opposition support, to wit engaging in useless and unpalatable military adventures.[110]

In a study conducted in 1995 by Sachs, Humphreys and Stieglitz[111] it is argued that resource rich countries grow more slowly than resource-poor countries even after such variables as initial per capital income and trade policies are taken into account. The usual explanation for this is the "Dutch disease". Sachs argues that when a country exploits hydrocarbons, a sudden inflow of dollar-denominated revenues often leads to a sharp appreciation in the domestic currency, which

[109] K. Terry Lynn, "Understanding the Resource Curse" in Svetlana Tsalik and Anya Schriffin (Eds.) Covering Oil: A Reporters‟zk Guide to Energy and Development (New York: Open Society Institute, 2005).
[110] Ibid
[111]UNEP (1997) Environmental Management in Oil and Gas Exploration and Production: An Overview of Issues and Management Approaches, at 2-3

tends to make non-oil sectors such as agriculture and manufacturing less competitive on world markets, thus leaving oil to dominate the economy with all the attendant consequences.[112] Hence when oil resources are depleted the entire economy may easily go on its knees.

According to Bell and Faria,[113] in developing countries where institutions are still maturing, the magnitude of receipts and difficulties of control suggest the need for a special legislation directed to a particular problem posed by such revenues. The revenue management law must be adapted to the needs of the institutions and legal framework of the country. They argue that many times formal codes adopted are merely "show" laws due to lack of resources, experience, overriding economic and political considerations or lack of culture of compliance. Other laws governing public procurement, public information, disclosure of contracts, conflict of interest and judicial review are of equal relevance.[114] They warn against the danger of assuming that norms and mentality will change when production and revenue accumulation takes off. This suggests that other factors such as the compliance with legislation and implementation thereof are very crucial in management of oil wealth, and most importantly adequate planning to be done prior to oil production.

According to Yergin, oil wealth management depends on the county‟s capacity to plan properly. That the rush for oil production leads to reliance on foreign ill equipped geologists, leading to premature exhaustion of oil deposits due to quick and large perceived and anticipated oil rewards.[115] He argues that oil is a commodity intimately intertwined with national and global politics and power and a country‟s success depends on its capacity to plan and strictly implement such plans. Otherwise, as Yergin says, oil can be a "fool‟s gold" which is what poor country planners have continued to confuse with the "oil curse".

> *"It is not a curse but rather failure by fools to be good planners, to be transparent and accountable to the people which leads to a resource curse".*[116]

[112] Ibid
[113] J.C. Bell and T. Mauria Faria, "Critical issues for a Revenue management Law" (2006) Initiative for Policy Dialogue Working Paper Series http://policydialogue.org/files/publications/Ch11.pdf accessed on 6th May 2017
[114] Ibid
[115] D. Yergin (2008) The Prize: The Epic Quest for Oil, Money and Power, New Edition, Free press, New York.
[116] Ibid

Accordingly, it is important that each entity carries out its functions as mandated by the law, though one should not assume that newly formed policies, laws and institutions will easily master government and administrative skills than the existing ones.[117] On the other hand, constructive critics say that oil can be a catalyst for a country‟s development. These constructive critics stress the importance of sound fiscal management and revenue transparency.

Emmanuel B Kasimbazi, in the article "Environmental Regulation of Oil and Gas Exploration and Production in Uganda"[118] indicates that Uganda has only recently discovered oil, and production is to begin soon. However, it is important to note that the process of oil exploration inUganda is not new. It was first carried out by Wayland[119] in the 1920s, who documented up to 52oil and gas seeps in the Albertine Graben.[120] Petroleum exploration activities ceased, because of the Second World War, until 1983, when geologists resumed exploration activities in the Albertine Graben, revealing reasonable oil presence.[121] This led to the creation of the Petroleum Unit in 1985, in the Geological Survey and Mines Department, to spearhead exploration promotion, and the enactment of the Petroleum (Exploration and Production) Act of 1985 to make provision for the exploration and production of petroleum and related matters.[122] The Petroleum Unit was replaced by the Petroleum Exploration and Production Department, which commenced aeromagnetic surveys.[123] In 1993, the Petroleum (Exploration and Production) (Conduct of Exploration Operations) Regulations were passed to regulate petroleum activities in the country.[124]

The scholar 'stipulates that since early 2000, the Government of Uganda has embarked on the refurbishment of the oil sector and has entered into oil exploration agreements with various

[117] R.A. Posner, "Theories of Economic Regulation" (1974) NBER Working Paper Series, No. 41, CENTER FOR ECONOMIC ANALYSIS OF HUMAN BEHAVIOUR AND SOCIAL INSTITUTIONS, New York, <http://www.nber.org/papers/w0041.pdf> accessed on 6th May 2017
[118] B Kasimbazi, "Environmental Regulation of Oil and Gas Exploration and Production in Uganda"
[119] E J Wayland was a government geologist during the British Colonial Government. He documented substantial amounts of hydrocarbons in the Albertine Graben.
[120] National Environment Management Authority (NEMA), (2009), *Environmental Sensitivity Atlas for the Albertine Graben*, www.nemaug.org/atlas/Sensitivity_Atlas_2009_May.pdf (accessed on 2 September 2011), 13. See also Ibrahim Kasita, *History of Oil in Uganda*, New Vision Friday, 23 January 2009.
[121] Ibid
[122] Ibid
[123]*Ibid*, see also Republic of Uganda, Oil and Gas Policy of Uganda 2008, www.acode-u.org/ documents/oildocs/oil&gas_policy.pdf (accessed on 1 February 2012).
[124] Ibid

companies including Dominion Uganda Ltd, Tullow Oil plc, Heritage Oil and Gas Ltd and Neptune Petroleum Uganda Limited.[125] These companies are now operating at different stages of exploration and have discovered vast quantities of oil in the Albertine Rift, along the western border of Uganda and the Democratic Republic of Congo (DRC). At the same time, the Albertine Rift region is well known as one of the richest biodiversity hotspots in the world in terms of mammals, birds and other species in Uganda and East Africa at large.[126] This region hosts a number of protected areas including the Queen Elizabeth National Park, RwenzoriMountains National Park (both are World Heritage Sites), Kibaale, Semliki and Murchison Falls National Parks, plus Toro-Semliki and Kabwoya wildlife reserves.[127] At the national level, the Albertine Rift houses seven of the ten national parks and over 20 forest reserves.[128] With this richness, the area provides a range of ecosystem services that include, among other things, tourism and aesthetic values and water through the system of lakes, rivers and wetlands to Uganda and the Nile riparian states north of Uganda.[129] Indeed, the livelihoods of the people in the area are largely derived from the natural forests, fisheries, fertile soils, minerals and wetlands.[130] By 2006, major discoveries of oil had been made around Lake Albert in western Uganda and it is now established that Uganda has commercially exploitable reserves of oil[131] andgas in the Albertine Graben and commercial oil production is expected to commence soon.[132]

Emmanuel Kasimbazi identifies two major concerns that relate to oil exploration and production in the Albertine Graben region.[133] The first one relates to the environmental concerns likely to arise during oil exploration and production and the second is whether the current policy and legal framework address those environmental concerns. The Scholar analyses the available legal tools for the environmental management of petroleum exploration and production in Uganda. As observed earlier, oil exploration and production are associated with several environmental risks,

[125] See note 40 above
[126] The Institute of Resource Assessment (IRA) and the Pan-African START Secretariat (PASS), *Building African Capacity for Conserving Biodiversity in a Changing Climate in the Albertine Region Baseline Assessment* (2007).
[127]United States Agency for International Development (USAID), *Productive Resource Investments for Managing the Environment in Western Uganda Region* (2007), 2.
[128] Ibid
[129] Ibid
[130] Ibid
[131] See note 40 above
[132]According to Tullow Oil, Uganda‟s lead operator in oil exploration, commercial oil production is expected to start in late 2012, www.busiweek.com/11/news/ uganda/1040-uganda-oil-expectations-remain high?tmpl=component&print=1&page (accessed on 9 September 2011).
[133]

which require comprehensive and effective regulation. The scholar therefore, reviews the policy and legal instruments that have been developed to regulate oil exploration and production in Uganda.

2.4 Conclusion

Although there is a great deal of literature on legal aspects of environmental health and safety protection, there is not a lot when it comes to the area of oil and gas exploration and production, so much so in the local context. Even the present literature is neither easily discernable nor appropriate given the peculiarity of environmental health and safety in Uganda‟s oil and gas exploration and production. However, in some cases the same literature is characterized with research gaps pertaining to the legal aspects of compliance with environmental health and safety standards which need to be filled.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter entails research methodology that was used in the study. These include the research design, target population, the sample size and sampling procedure to be used. The research instruments were employed in the study, measures to test reliability and validity of the study, the data collection procedure and data analysis techniques and finally the ethical consideration that was followed during the study.

3.1 Research design

The study was conducted through doctrinal approach which provided a systematic exposition of the rules governing a particular legal category, analyses the relationship between those rules, explains areas of difficulty and, perhaps, predicts future developments.‟ A doctrinal legal research was perceived as a suitable research design because this study shall be based upon underpinning of legal concepts and principles of law, statutes, cases and rules concerning environmental health and safety in the oil and gas industry in Uganda and henceforth making sufficient room for the researcher to adequately address or discuss the legal concepts relating to environmental health and safety as analysed in the subsequent chapters.

This research design also enables the legal researcher to take one or a series of legal propositions not only as the starting point but also as the focus of the research objective, methodological designs and consequently framing a suitable structure for responding to the study objects.Conventional legal research takes place in a law library to locate authoritative decisions, identify the applicable legislations and explore relevant sources of secondary literature. Suchconventional research is deemed as key in analysing the material, formulates a conclusion and writes up the study results.

3.2 Data collection Instruments

3.2.1 Primary data

Library and desk research methods are equally employable for reviewing the national policy, the international and regional legal framework that provides for environmental health and safety standards during the oil and gas exploration and production activities in Uganda and across a global spectrum. In the review, the strength and weaknesses in the present legal framework were analysed.

Also important textbooks and articles were reviewed to obtain and contextualize scholarlyopinions for the guidance of this paper. The research also reviewed Newspapers to ascertain the current trends in the industry. The paper also relied on some internet sources for secondary or tertiary information to support the study especially in ascertaining current global trends in the industry.

3.3 Validity of the Instruments

Validity indicates the degree to which results obtained from the analysis of the data actually represent the phenomena under study (Mugenda & Mugenda, 2003). Data validity was tested by using the Content Valid Index (CVI). To achieve this, a copy of the questionnaire was distributed to the supervisors and field experts to rate the relevant items/questions in relation to the research objectives, the relevant questions was then divided by the total number of items. Validity was tested as follows: CVI=Relevant Items/Total Number of Items.

Fisher (2004), indicates that for a research instrument to be valid, the CVI should be more than or equal to 0.7. The CVI for the study was calculated to be 0.76, this were an indication that the instrument would capture what it intended for.

3.5.2 Reliability of the Instruments

According to Kasomo (2006), reliability refers to how consistent a research procedure or instrument is. It therefore means the measure of degree to which research instruments yields consistent results or data after repeated trials. The test re-test method was used to assess the

reliability of the instruments. These are to enhance the extent of compliance is to environmental health and safety standards in the oil and gas industry in Uganda.

3.8 Ethical Considerations

Permission to conduct the study obtained from them Institute of Petroleum Studies Kampala. Respondents‟ informed consent was obtained verbally either in English, Kiswahili and Luganda. To ensure confidentiality, interviews were conducted in private areas and strict control will be maintained over data collected.

Respondents‟ personal identified not be taken for the purpose of the study. The study was not having any risk to the participant since the kind of questions that were personal nor sensitive. There won‟t be direct benefit to the respondents; however, the study findings were useful in emphasizing compliance is to environmental health and safety standards in the oil and gas industry in Uganda

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS OF FINDINGS

4.0 Introduction

The chapter is set out to address the mechanisms through which the enforcement and regulatory stakeholders could potentially improve the levels of compliance with Uganda‟s Environmental Health and Safety Law.

4.1 Mechanisms that enforce improvements in levels of environmental compliance in the Uganda.

Safety mechanism

The hydrocarbon industry provides opportunities for unsafe acts like flammable liquids and gases, heavy, moving machinery and transport. Therefore, safety principles on organizational structure, management personal standards, safety assessment, designing procedures, procedures for operations, maintenance, modifications and emergencies, safety management for contractors, involving of the workforce in safety, accident system in reporting, investigation and follow up, monitoring and auditing the operation of the system and systematic reappraisal of the system.

Health

The operators would have been aware that pump A was out of commission for maintenance but as maintenance had not yet started and the problem with pump A was not especially serious, it would not have been unreasonable to consider restarting it. Because of the way in which work permits were organised on Piper Alpha, the operators would not have known that the pressure relief valve for pump A was missing.

It is believed that the operators took steps to reinstate pump A and condensate leaked from the blind flange which had been installed in place of the pressure relief valve, but not fully tightened up.[134]

[140] Ibid

Mechanism for the Pipe Alpha 1988

Management of Change (design issues)

Piper Alpha was to produce and export oil. The involvement of Piper Alpha in the exporting of gas and the separation of condensate came as an afterthought. Extensive modification wasrequired for enhancing the involvement of Piper Alpha in the above undertakings. The retrofitting went on in several phases, starting with separation of condensate and ending with production of export-quality gas.[135]

Personal safety and its mode of implementation.

Despite the extensive fixed fire protection system on Piper Alpha, not a single drop of water was applied from Piper Alpha itself to any of the fires.[136] Water alone would not have put the oil fires out (and with gas fires one should not even attempt to do so)[137] but it might have cooled the structure and pipelines and have prevented or at least significantly delayed the gas line rupture which was the major escalating factor in the Piper Alpha disaster. After the rupture of the first gas line, Piper Alpha was doomed.[138]

Reasons why didn't the fire protection system activate as intended

For many years, the practice on Piper Alpha was to switch the fire pumps from automatic to manual when divers were in the sea. As diving was such a regular part of normal operation, in practice the pumps remained on manual most of the time.[139]

It is much easier to imagine the horror of a close colleague being sucked into a pipe (as had happened a few years earlier although the diver survived) and prioritise it over the danger of leaving 226 men unprotected in the highly unlikely event of fire.[140]

[135] ibid
[136] Ibid
[137] Ibid
[138] Cullen, W.D.: The Public Inquiry into the Piper Alpha Disaster, HMSO, London, 1990
[139] Ibid
[140] Ibid

The assessment of risk was skewed. The suction pipes under Piper Alpha were protected with grilles to prevent divers from being sucked in, although anyone within 5 meters of the inlet could be drawn towards them when the fire pumps started with the risk of serious injuries. On other rigs this was managed by close communication with divers and a temporary override used only when the divers were working within a short distance of the inlets, a relatively rare occurrence.[141]

Safety culture

There were many warnings that all was not well with safety management systems on Piper Alpha long before the accident.

Less than a year earlier, on 07 September 1987, a contract rigger was killed in an accident on Piper Alpha. The accident highlighted the inadequacies of both the permit to work and the shift handover procedures. A golden opportunity to put these right was missed.[142]

When the disaster occurred, offshore safety was governed through the use of prescriptive regulations. Such regulations have their uses, provided all eventualities have been considered. But a regulations-bound system falls down because practices not covered by regulations are simply not addressed. People become complacent when they are encouraged to think that safety can be ensured by rules enforced by inspectors: it is impossible to cover all eventualities in a set of general rules.

Renewable Energy Policy for Uganda (2007)

The Renewable Energy Policy (REP) was formulated with an overall goal of increasing the use of modern renewable energy to 61% in 2017 from 4% in 2007, of the total energy consumption. The policy aims to ensure energy security, independence and of diversification of sources and technologies for energy supply. The policy emphasizes sustainable utilization of biomass energy by investing and promoting clean biomass-derived fuels as well as a range of BETs such as

[141] Ibid
[142] Cullen, W.D.: The Public Inquiry into the Piper Alpha Disaster, HMSO, London, 1990 Accessed on 25th Jan,2021 from https://www.thechemicalengineer.com/features/piper-alpha-the-disaster-in-detail/

improved stoves (wood and charcoal), baking ovens, improved kilns (charcoal, lime, brick), biogas, biofuels, briquetting, cogeneration and gasification.[143].

Climate Change Policy

The Uganda National Climate Change Policy (NCCP) of 2013 compliments the implementation of the REP, in particular with respect to the promotion and development of new clean energy technologies in order to reduce Green House Gases (GHGs).[144] The policy emphasizes the need for energy resource development and use of technologies that balance impacts of climate change through developing adaptation and mitigation strategies.

The Energy Policy for Uganda 2002; the objective of the policy is to meet the energy needs of Uganda‟s population for the social and economic development in an environmentally sustainable manner.

National Biomass Energy Strategy (NBEST)

The Government developed a National Biomass Energy Strategy (NBEST) aimed at providing a comprehensive framework for managing both the supply and demand sides of biomass.[145] The NBEST will guide all actions and interventions in the biomass subsector through the establishment of the action plan for the strategy.[146]

The Government should also continue to collect relevant and quality data and information on the different facts of new and renewable energy resource so as to establish the potential of this energy source to supplement programmes aimed at increasing energy accessibility.

Promotion of the country‟s petroleum potential and licensing, which will include: Government promoting the petroleum potential of the country; Preparation for petroleum licensing rounds during the strategic plan period and acquisition of geological, geophysical and geochemical data in the unlicensed basins and new areas; monitoring of non-exclusive surveys, the acquisition of

[143] Study Desk Research, 2020
[144] Ibid
[145] Ibid
[146] Ibid

more geophysical data in old and new areas, preparations for a licensing rounds; and conducting resource assessment and laboratory analysis on the collected data and package for promotional purposes.

Infrastructure Development: Complete the construction of the data center and office blocks.

Support the implementation of a robust communication Strategy and effort for the oil and Gas Sector in Uganda to diffuse the negative perceptions on the Oil and Gas resources management and promote the Development of mutual beneficial relations between all stakeholders and actors in the oil and gas sector.

Reviewing elements of Legal and Regulatory Framework: Following the putting in place of the Petroleum (Exploration, Development and Production) Act 2013, New Regulations and Guidelines for the upstream activities being developed; Government will review and update the Model Production Sharing Agreement (PSA).

Capacity Building: This will be a key activity in the development of the subsector in the next five years where Government should continue to build capacity for the Oil and Gas sector through formal and informal training. In the first place of this capacity building process Government will put in place the new institutions, i.e. the Petroleum Directorate, the Petroleum Authority and National Oil Company and train members of staff in Petroleum Geoscience, Engineering and Refinery Design at postgraduate level. Government will continue supporting Government petroleum-training institutions in Uganda especially support will continue at Petroleum Institute Kigumba (UPIK) and Makerere University. Government will also have to enhance its support for the implementation of the National content strategy in the oil and gas sector in order to realize the recommendations made in the National Content Study, that aim at ensuring maximum participation of Ugandans in the oil and gas sector.

Monitoring the exploration for oil and gas activities by oil companies: - Government will have to embark on operationalizing e its Monitoring and Evaluation (M&E) strategy for the National Oil and Gas Policy (NOGP) and strengthen its capacity to monitor the activities of oil companies; continue monitoring of seismic surveys and drilling wells in operational areas, accompanying well tests, plus other field operations; continue reviewing of applications for production licenses

and accompanying field development plans and petroleum reservoir reports for fields whose appraisal is complete; and continue monitor the sale of extended well test crude oil.

4.2 Legal and institutional framework

Uganda is no different from other countries; it has incorporated the idea of Environmental Impact Assessments in its domestic laws. The Constitution of the Republic of Uganda of 1995 under Article 27 section (3) identifies the need to utilise and manage the natural resources in a way that meets the development and environmental needs of the present and future generations of Uganda.[147] The state is required to undertake up all possible measures to prevent or minimise the damage and destruction of land, air and water resources as a result of pollution or other causes.

The National Environmental Management Authority (NEMA) further is mandated under the 1995 National Environmental Act, Chapter 153, to promote and ensure compliance with sound management practices as the competent authority. Expounding on the mandate, is the requirement under Part V of the same Act, Section 19, for NEMA to ensure that all projects which may have, or are likely to have or have significant impacts on the environment undergo the process of EIA. A detailed list of the projects to be considered is found Schedule 3 of the same Act and includes oil and gas related projects such as exploration for the production of petroleum, oil refineries and petrochemical works.

Also to enable the smooth implementation of the Environmental Impact Assessments, NEMA came up with the Environmental Impact Assessment Regulations, 1998, that cover requirements that must be satisfied in the entire process of conducting, reviewing and approvingEnvironmental Impact Assessments.

To enable smooth Implementation of approved Environmental Impact Assessments by the developer, mitigation measures are identified with the help of other applicable laws.[148] Other applicable laws that are related to Environmental Impact Assessments and applicable in the areas

[147] Uganda of 1995 under Article 27 section (3)
[148] The 1995 National Environmental Act, Chapter 153

of operation of oil and gas activities include the Uganda wildlife Act Cap 200,[149]; The National forestry and tree planting Act,[150] section 38; The Mining Act 2003; Investment code,[151] section 19. All these send a signal for Environmental Impact Assessments to be carried out before any oil exploration or production activities.

Surprisingly, the National Oil and Gas policy of 2008 that sets out all operations of the petroleum activities in Uganda does not explicitly talk about Environmental Impact Assessments but it gives an over view of the need to protect the environment and conserve biodiversity under principle 5.1-5. On the same note, the Petroleum (Exploration, Development and Production)Act, 2013 Section 3 gives a wealth of environmental principles to be complied with by the licensee or anyone responsible for any petroleum activities. This is to be in accordance with NEMA act and other applicable laws.

Although both the Policy and Act do not particularly talk about Environmental Impact Assessments but rather environmental requirements, the 1999 Model Petroleum Sharing Agreement (PSA) does under Article 22 which requires the licensee to carry out Environmental Impact studies putting into consideration all aspects such as the marine life, wildlife, impacts on human life and also the potential impacts on the neighbouring areas. Environmental impact statements are also required to be submitted in the work programmes and budgets of the licensee indicating how they have progressed with the proposed mitigation measures and how they hope to proceed in upcoming programs.

In case of Macondo

The Macondo oil spill[152], as it came to be called, had a devastating impact on the environment. Oil was scattered over more than 1,300 miles of shoreline from Texas to Florida. Owing to deep water ocean currents, the oil flowed hundreds of miles away from the blowout. A large volumeof oil sank to the ocean floor. In the attempt to clean up the spill, incalculable damage was done to fish and wildlife and to vital marshes and estuaries. In addition, though they were seldom

[149] The Uganda wildlife Act Cap 200, sections 16 and 17
[150] Ibid
[151] Ibid
[152] Macondo incident 2010 "*the Deepwater Horizon drilling rig explosion*": April 20, 2010

discussed at the time, cleanup efforts often made first responders ill from the chemicals and other substances used in attempts to contain and clean up the damage.

As bad as the Macondo oil spill was in its direct impacts on the environment, its lasting effect has been even more pronounced on the energy and environmental policy. The fact that it took BP nearly three months to cap the well despite the fact that the Deepwater Horizon oil spill occurred near the heart of the oil and gas service industry along the Gulf coast raised serious concern about what would happen if a blowout occurred in an even more remote region, such as Alaska‟s northwest shelf where no help would be readily attainable and where oil could seep under ice, making it extremely difficult, if not impossible, to recover.[153]

The 2010 rig explosion, which killed 11 workers and sent oil spewing into the Gulf of Mexico for 87 days, triggered one of the worst environmental disasters in US history. It released 206m gallons of oil from BP‟s Macondo well, according to US government estimates, affectingwildlife and water-quality along hundreds of miles of Gulf coastline.[154]

The study recommends a necessary increased regulatory standards particularly those specific to regional environments. The incident also required utilizing the best available technology and continuing job training for rig operators.[155]

4.3 Assessment of the Environmental health laws in Uganda Sources and types of Common Public health law in Uganda.

In assessing the Environmental health law of Uganda, the various sources, and types of Public health as well as its enforcement were the sources of law are varied and generally include the following; Principal laws, subsidiary laws, case law, criminal law, case law, customary law, and international agreements.[156]

[153] Adeyemo OK, Kroll KJ, Denslow ND (2015) Developmental abnormalities and differential expression of genes induced in oil and dispersant exposed Menidia beryllina embryos. Aquat Toxicol 168:60–71.
[154] Ibid
[155] Oil released from the Deepwater Horizon well stains the Gulf of Mexico, on 10 June 2010. A new study argues satellite imagery was unable to detect the full extent of toxic oil.
[156]APHA.2018."https://www.apha.org//media/files/pdf/factsheets/what_is_public_health_law_factsheet.ashx?la=en &hash=7BCB29295AD654F171D55D4F9CF1A3D9DCF79400." partnership for Public health law

In Uganda, the major types of Public health law comprise of the following; first, there is *Principal law* which is the body of Public Health law made by Parliament which is the national law-making organ. It is a law that covers a major subject area.[157] It is a law that is enacted by Parliament and assented to by the President of Uganda. The examples of Environmental health and Public health laws in Uganda include the following among others; i.e. Public Health Act, 1935 (Revised 2000), (Cap, 281); Food and Drugs Act, 1959 (CAP.278), Occupational Health and Safety Act, 2006., Water Act, 1997 (CAP.152)., Town and Country Planning Act, 1951, (CAP. 246), Building Control Act, 2013, National Environment Act, 1995, (CAP.153) andregulations and statutory instruments., Hotels Act, 1953 (CAP. 90), Liquor Act, 1960 (CAP.93).

The second type of law is s*ubsidiary legislation*. Subsidiary legislation is any proclamation, rule, regulation, order, resolution, notice, bye-law or other instrument made under or by virtue of any Ordinance and having legislative effect. It is subject to the approval of a Council, which may be given through either the positive procedure or the negative procedure.[158] In Uganda, the subsidiary legislation is comprised of the following; Ordinances, bye-laws rules, regulations orders. Ordinances and bye-laws are made by local authorities.[159]

Generally, In Uganda, Subsidiary legislation includes the environmental health and public health rules or regulations,[160] some of the examples of some of these regulations are;

The Public Health regulations, 200; The Environmental Impact Assessment Regulations No. 13 of 1998, the National Environment (Standards for Discharge of Effluent into Water or on Land) Regulations No. 5 of 1999; The National Environment (Waste Management) Regulations No. 52 of 1999.

Environmental health law provide the basics which should be followed which are the essential foundation for the protection of environmental health and Public health in society.[161]

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[157] Time base Online Legislation research. 2018. https://www.timebase.com.au/support/legalresources/What_is_the_difference_between_principal_and_amending_legisl.html.

[158] Legislative Council of HongKong. 2014. Subsidiary legislation. https://www.legco.gov.hk/general/english/sub_leg/sub_0004.htm.

[159] Government of Uganda. 1997. Local Governments Act. https://ulii.org/ug/legislation/consolidated-act/243.

[160] Government of Uganda. 1997. Local Governments Act. https://ulii.org/ug/legislation/consolidated-act/243.

Compliance is necessary requirement, which will be followed by enforcement when it fails. Enforcement includes;- 1-Inspections to determine compliance with the law; 2-Negotiations with individuals or facility owners and managers who are out of compliance to develop mutually agreed standards and approaches to achieving compliance which are called *compliance agreements* ,legal action to compel compliance, and sometimes compliance promotion which includes educational programmes, and technical assistance and subsidies.[162] Enforcement is a key component of regulation and is paramount in maintenance of standards,[163] Some of benefits of enforcement of Public health and Environmental health law include; - 1- Protection environmental health and Public health, 2-Promotion fairness, and 3-reduction of costs and liability.

Lubega[164] proposes the components of a good enforcement programme to include; -1-creating requirements that are enforceable, 2- knowing who is subject to the requirements and setting programme priorities, 3-promoting compliance in the regulated community, 4-monitoring compliance, 5-responding to violations, 6-clarifying roles and responsibilities, and 7-valuating the success of the program and holding program personnel accountable for success.

4.4 Enforcement organs in Uganda

The major bodies responsible for the enforcement of these laws in Uganda include;

Ministry of Health through its various departments and divisions. The Environmental Health division is a key division in the Ministry of Health that plays a noble role in enforcing of Environmental health and Public health law in it works with other ministries and government agencies such as:-

[161] Lubega, George Matovu. 2006. "Challenges in Monitoring and enforcement of Environmental laws in Uganda." Training Workshop to strengthen and enhance the capacity of Police Investigators and Prosecutors to enforce environmental law.
[162] Ibid
[163] Werner, Bijkerk. 2014. "Enforcement and its importance." International organisation of securities commission conference, Sao Paulo. Sao Paulo
[164] Ibid

Ministry of Water and Environment which is responsible for the enforcement of the National Environment Act, 1995; Water Act, 1997; and the National Water and Sewerage Corporation Act.[165]

Ministry of Gender, Labour and Social Welfare which is responsible for enforcement of the Occupational Health and Safety Act (OSHA), 2006).[166]

Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) through the veterinary department is responsible for the inspection of meat animals.[167]

National Environmental Management Authority (NEMA) which is responsible for the environmental monitoring of all forms of pollution.[168]

Urban and Rural Local Governments Authorities established under the Local Governments Act, 1997 through their Public Health departments and law enforcement departments. Such Local governments include; District Councils, City Councils, Municipal Councils, Town councils, Subcounty councils and Village (LC I) councils.[169]

Uganda Police Force (UPF) and the Local Administration personnel.[170]

Uganda Civil Aviation Authority, and Entebbe Airport for enforcement of International Health Regulations, 2005[171]

Ministry of Internal Affairs and Directorate of Immigration and Ministry of Health for enforcement of International Health Regulations, 2005

The Directorate of Public Prosecutions (DPP) for the prosecution of non-compliant individuals.[172]

[165] Environmental health and Public health law
[166] Ibid
[167] Ibid
[168] Ibid
[169] Ibid
[170] Ibid
[171] Ibid

Courts-of-law at their various levels help to adjudicate on Environmental health and Public Health matters related such as; abatement of nuisances, pollution of all forms among others.

The extent of compliance with the national policy, international and regional legal framework that provides for environmental health and safety standards during the oil and gas exploration and production industry in Uganda.

Uganda has introduced a national and institutional framework to ensure that the oil and gas industry complies with environmental health and safety as will be discussed below. The purpose of this chapter is to show the current national legal framework concerning compliance with environmental health and safety and its detailed analysis. The legal regime governing the oil and gas industry in Uganda is constituted by locally tailored policy and legislative compliance requirements. The major policy and legislative environmental health and safety law compliance requirements were developed after 1994 with the formulation of the National EnvironmentAction Plan. This saw the development of the major National Environment Management Policy and the National Environment Act as Uganda‟s framework legislation. It is under these that subsequent sectoral policy and legislation have developed. Legislation covered in this chapter includes the Constitution, major oil and gas law and other relevant environmental health and safety laws.

Compliance with these policy and legislative aspirations and standards will enable Uganda develop an environmental health and safety sound and sustainable oil and gas sector. This chapter is organized into three sections. The first section discusses the compliance standards under the National Policy Framework for oil and gas, the second section discusses the national legal framework and the third section analyses the institutional framework responsible for ensuring compliance with environmental health and safety standards in the oil and gas industryin Uganda.

[172] The office of Director of Public Prosecutions

4.5 Compliance standards under the National Legal Framework for Oil and Gas

4.5.1 The Constitution of the Republic of Uganda (1995) (as amended)

The 1995 Constitution of the Republic of Uganda has elaborate provisions regarding environmental management. In the National Objectives and Directive Principles of State Policy, the Constitution requires the Government of Uganda to take measures to protect important natural resources, including land, water, wetlands, minerals, oil, fauna and flora on behalf of the people of Uganda.[173] The government is also required to promote and implement energy policies that will ensure that people‟s basic needs and those of environmental preservation are met. It is further required to promote the rational use of natural resources so as to safeguard and protect thebio-diversity of Uganda. The Constitution also requires government to promote a good water management system at all levels;[174] promote sustainable development and public awareness of the need to manage land, air, water resources in a balanced and sustainable manner for the present and future generations and to prevent or minimize damage and destruction to land, air and water resources resulting from pollution or other causes.[175]

In the substantive provisions, the Constitution has a specific provision for the right to a clean and healthy environment. Under Article 39, every Ugandan has a right to a clean and healthy environment. This provision is reiterated under section 3 of the National Environment Act Cap 153; and section 5(2) of the National Forestry and Tree Planting Act No. 8 of 2003 which all provide for the right to clean and healthy environment. The breach of the right entitles any person or responsible body to bring an action in furtherance of the right. The Constitution furtherimposes on the State and the citizens the duty to create and protect a clean and healthy environment[176] which is echoed in the Occupational Health and Safety Act of 2006. The above provisions imply that a person whose right to clean and healthy environment is violated due tooil exploration and production may take the company responsible or government to court to seek redress[177]. The constitution vests the ownership of all minerals and petroleum in the government

[173] Principle XIII
[174] Principle XXI
[175] Principle XXVII
[176] Article 17 (I) (J)
[177] In the case of *Environmental Action Network v. British American Tobacco,* the applicant brought an application

which is to hold the same on trust for the people of Uganda. This introduces the public trust doctrine in the management of oil and gas resources[178] and this was courtesy of the Constitutional (Amendment) Act of 2005.

This Amendment Act has significant implications for oil and gas management and control, and sharing of royalties from oil and gas. Part XIII and specifically section 43 amends article 244 of the Constitution by replacement. Accordingly, the entire property in and the control of all minerals and petroleum in, on or under any land or waters in Uganda are vested in the Government on behalf of the Republic of Uganda. This is however subject to article 26 of the Constitution which emphasizes the need to fairly and adequately compensate surface land owners before the Government can take over the petroleum rich lands. Parliament is mandated to make laws regulating the exploitation of minerals and petroleum; the sharing of royalties arising from mineral and petroleum exploitation; the conditions for payment of indemnities arising out of the exploitation of minerals and petroleum and conditions regarding the restoration of derelict lands. Some of the laws hereinafter have therefore been enacted under this amendment.

4.5.2 Petroleum (Exploration, Production and Development) Act 2013 (PEPD)

The Petroleum (Exploration, Production and Development) Act came into force in 2013 and it is the primary law responsible for the management and regulation of Oil and Gas activities in Uganda. The major purpose of this Act is to operationalize the National Oil and Gas Policy and to achieve this many strategic approaches are identified: establishing an effective legal framework and institutional structures to ensure that the exploration, development and production of petroleum resources is carried out in a sustainable manner that guarantees optimum benefits for all Ugandans, both the present and future generations and creating a conducive environment for the efficient management of petroleum resources. The Act lays down a number of environmental, health and safety standards which include the following;

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under article 50(2) of the 1995 Constitution and rule 3 of the Fundamental Rights and Freedoms (Enforcement Procedure) Rules, for a court order compelling the respondent, a manufacturer of "dangerous products" (cigarettes), to fully and adequately warn consumers of the health risks associated with its products. Although the order was ultimately denied, the court did confirm the *locus standi* of the applicant, that article 50(2) enabled individuals to bring public interest matters to court on behalf of those who were not in a position to do so.

[178] Article 244 of the Republic of Uganda Constitution as amended, 1995

The Act enjoins players to conduct petroleum activities in a manner to enable high level of safety and maintain the level in accordance with technology developments, best industry practices, Occupational Health and Safety Act, 2006 and other laws.[179] The Act further stipulates that the lead agency responsible for the wellbeing of health and safety especially around the Oil rigs is the Ministry of Labour and social Development. This is in line with the United National Environmental Program requirements cited above.

The licensee is further required to identify the hazards and evaluate the risks associated with any work performed in the course of petroleum activities and steps that need to be taken to comply with provisions of the Act[180]as far as reasonably practicable to prevent the exposure of the persons to hazards.

The operator has duty to take precautions as a necessary to ensure the safety of any person employed or otherwise present at or in the vicinity of any installation in accordance with Occupational Health and Safety Act, 2006 and to protect the environment and natural resources, including taking precautions to prevent pollution and ensure that persons are duly informed of those precautions.[181]

All participants in petroleum activities have an obligation at all times to maintain efficient emergency preparedness with a view to dealing with accidents and emergencies that may lead to personal injury, pollution or major damage to property.[182] The licensee also has a duty to ensure that necessary measures are taken to prevent harmful effects and environmental restoration.

The Act calls for security measures to avoid attacks against facilities and investors must have contingency plans to deal with such attacks at all times.[183] In case of accident licensee is required to suspend petroleum activities for as long as the requirement of prudent operations warrants in line with the international and regional standards on environmental health and safety.

[179] Section 140 of the Petroleum (Exploration, Production and Development) Act 2013 (PEPD)
[180] Ibid
[181] Section 141
[182] Section 142
[183] Section 143

The other strategic approaches include the establishment of institutions to manage the petroleum resources and regulate petroleum activities; regulate petroleum activities, including licensing, exploration, development, production and cessation of activities or decommissioning; ensure public safety and protection of public health and the environment in oil activities; support the development of state participation and national content in the petroleum industry and ensure transparency and accountability in all activities regulated under the Act.[184]

The Act calls upon all actors to carry on their operations in compliance with environmental principles. In this vein, a licensee or any other person who exercises or performs functions, duties or powers under the Act in relation to petroleum activities shall comply with environmental principles and safeguards prescribed by the NEA and other applicable laws.[185] A licensee is obliged to ensure that the management of production, transportation, storage, treatment and disposal of waste arising out of petroleum activities is carried out in accordance with environmental principles prescribed under the NEA and other applicable laws. To effectuatethis, a licensee is required to contract a separate entity to manage the transportation, storage, treatment or disposal of waste arising out of the petroleum activities. However the licensee shall remain responsible for all the activities of the entity so licensed. A person contracted by the licensee shall not undertake the above activities without obtaining a licence issued by theNEMA. The Act makes provision for punitive reinforcements where one violates the environmental principles therein contained. Accordingly, a person who carries on the production,transportation, storage, treatment or disposal of waste arising out petroleum activities without a licence or fails to comply with the conditions prescribed in the licence commits an offence and isliable on conviction to a fine not exceeding one hundred thousand currency points (2 Billion Uganda Shillings) or imprisonment for a term not exceeding ten years or both.

The Act also mandates the NEMA to make regulations for the management of production, transportation, storage, treatment and disposal of waste arising out of petroleum activities. These regulations shall prescribe, in case of contravention, penalties not exceeding a fine of five thousand currency points or imprisonment for a term not exceeding ten years or both, and may also prescribe that the court which convicts the person shall order the forfeiture of anything used

[184] Section 1 of the Petroleum (Exploration, Production and Development) Act 2013 (PEPD)
[185] Section 3 of the Petroleum (Exploration, Production and Development) Act 2013 (PEPD)

in the commission of the offence. However these regulations shall have to first be laid before parliament for approval. A person shall not be granted a petroleum production licence unless their development plan takes proper account of best petroleum industry practices and safety factors[186]. This is however largely vague because the Act does not satisfactorily define what amounts to "best petroleum industry practices".[187]

The petroleum production licence granted under the Act must expressly require the licensee to undertake Environmental Impact Assessment prior to commencing production activities[188]. The minister is also empowered to make regulations relating inter alia to the conservation and prevention of the waste of natural resources, whether petroleum or otherwise, and the carrying out of environmental impact assessments for that purpose[189] Regarding access to information by the public, the Act empowers the Minister, in accordance with the Access to Information Act, 2005, to make available to the public details of all agreements, licenses and any amendments to the licenses or agreements whether or not terminated or valid; details of exemptions from, or variations or suspensions of the conditions of a licence; approved field development plan; and allassignments and other approved arrangements in respect of a licence. The information referred toabove shall be available to any person upon payment of the prescribed fee.[190] This seems to be a good guarantee for transparency and accountability in the sector. However it has been restricted by the stringent confidentiality provisions under S152 and other express restrictions in S153.

4.5.3 The National Environment Act, Cap 153

The National Environment Act (NEA) is Uganda‟s framework environmental law and its central tenet is sustainable environmental management. It prescribes a set of environmental management principles which include:[191] to assure all people living in the country the fundamental right to an environment adequate for their health and well-being; encourage the maximum participation by

[186] Section 74 (1) (B)
[187] The Act merely defines "best petroleum industry practices" to mean the best available practices that are generally accepted as good, safe, transparent and efficient in carrying out petroleum activities and that can be applied globally under similar circumstances, something which leaves a lot to be desired since environmental compliance is best achieved through strong local regulation.
[188] Section 76 (1) (f)
[189] Section 183 (3) (f)
[190] Section 151
[191] Section 2 of the National Environment Act, Cap 153 Laws of Uganda, 2000.

the people of Uganda in the development of policies, plans and processes for the management of the environment; use and conserve the environment and natural resources of Uganda equitably and for the benefit of both present and future generations, taking into account the rate of population growth and the productivity of the available resources; conserve the cultural heritage and use the environment and natural resources of Uganda for the benefit of both present and future generations; maintain stable functioning relations between the living and nonliving partsof the environment through preserving biological diversity and respecting the principle of optimum sustainable yield in the use of natural resources and reclaim lost ecosystems where possible and reverse the degradation of natural resources.

Further principles include, to establish adequate environmental protection standards and to monitor changes in environmental quality; publish relevant data on environmental quality and resource use; require prior environmental assessments of proposed projects which may significantly affect the environment or use of natural resources; ensure that environmental awareness is treated as an integral part of education at all levels; ensure that the true and total costs of environmental pollution are borne by the polluter; and to promote international cooperation between Uganda and other states in the field of the environment. It establishes the National Environment Management Authority (NEMA) as a body responsible for coordinating, monitoring and supervising all environmental matters in Uganda.[192] The NEA confers on every person has a right to a healthy environment and obligates every person to maintain and enhance the environment, and where need arises inform the authority or the local environment committee of all activities and phenomena that may affect the environment significantly.[193]

In furtherance of the right to a healthy environment and enforcement of the duty to maintain and enhance the environment, the authority or the local environment committee is entitled to bring an action against any other person whose activities or omissions have or are likely to have a significant impact on the environment to prevent, stop or discontinue any act or omissiondeleterious to the environment; compel any public officer to take measures to prevent or to discontinue any act or omission deleterious to the environment; require that any ongoing activity be subjected to an environmental audit or require that any ongoing activity be subjected to

[192] Ibid Sections 4, 5 and 6 of the National Environment Act, Cap 153 Laws of Uganda, 2000.
[193] Section 3 of the National Environment Act, Cap 153 Laws of Uganda, 2000.

environmental monitoring or request a court order for the taking of other measures that would ensure that the environment does not suffer any significant damage. NEMA or the local environment committee proceeding is entitled to bring an action notwithstanding that the person cannot show that the defendant‟s act or omission has caused or is likely to cause any personal loss or injury.

The Act further requires that Environmental Impact Assessment be undertaken by a developer where the lead agency, in consultation with the executive director, is of the view that the project may have an impact on the environment; is likely to have a significant impact on the environment; or will have a significant impact on the environment.[194] The NEA prescribes the requirement to observe environmental quality standards. In this vein, it prohibits any person fromcarrying out any activity which is likely to pollute the air, the water or the land in excess of standards or guidelines prescribed or issued under Act. Thus a person requires a pollution licenceto carry out a polluting activity. A pollution licence cannot be issued unless the licensee is capable of compensating the victims of the pollution and cleaning the environment in accordancewith the "polluter pays" principle.

NEA requires NEMA to establish standards for air quality,[195] water quality,[196] the discharge of effluent into water,[197] the control of noxious smells,[198] the control of noise, vibration and pollution,[199] soil quality[200] and standards for minimisation of radiation.[201] Section 35 prohibits any activity not being a traditional activity, in a wetland without the prior written approval of the Authority given in consultation with the lead agency responsible. Section 49 of the National Environment Act provides for the protection of natural heritage sites. It provides that NEMA, with the assistance of Local Environment Committees, District Environment Committees and thelead agency, identify those elements, objects and sites in the natural environment which are of cultural importance to the various peoples of Uganda.

[194] Section 19 (3) of the National Environment Act, Cap 153 Laws of Uganda, 2000.
[195] Ibid Section 24 of the National Environment Act, Cap 153 Laws of Uganda, 2000.
[196] Ibid Section 25 of the National Environment Act, Cap 153 Laws of Uganda, 2000.
[197] Ibid Section 26
[198] Ibid Section 27
[199] Ibid Section 28
[200] Ibid Section 30
[201] Ibid Section 31

4.5.4 Occupational Safety and Health Act (2006)

The Act was intended to consolidate, harmonize and update the law relating to occupational safety and health; repeal the Factories Act Cap.220 and provide for connected matters.[202] TheAct makes provisions for the protection of the health, safety and welfare, and provision of appropriate training of persons employed in work places. Section 18 (1) of the Act requires the employer to monitor and control the release of dangerous substances into the environment.

Thus where there is major handling of chemicals or any dangerous substance which is liable to be airborne or to be released into rivers or lakes or soil and which are a danger to the animal and plant life, it shall be the duty of the concerned employer to arrange for equipment and apparatus to monitor the air, soil, and water pollution and to arrange for the actual monitoring of these mediums, with a view of rendering them safe from the dangerous undertaking. Subs. (2) states that the records of monitoring in subsection (1) shall be kept and made available to the inspector.These provisions are applicable to all Oil Companies and Mining Companies in respect of Oiland Gas exploration and mining because of the danger they expose to the environment andhuman safety.

4.6 Compliance standards under the National Policy Framework for Oil and Gas

In addition to the international and regional compliance requirements, legal regime governing the oil and gas industry in Uganda is also constituted by locally tailored policy and legislative compliance requirements. The major policy and legislative environmental law compliance requirements were developed after 1994 with the formulation of the National EnvironmentAction Plan. This saw the development of the major National Environment Management Policy and the National Environment Act as Uganda‟s framework legislation. It is under these that subsequent sectoral policy and legislation have developed. Legislation covered in this chapter includes the Constitution, major oil and gas law and other relevant environmental laws. Compliance with these policy and legislative aspirations and standards will enable Uganda develop an environmentally healthy and safe, sound and sustainable oil and gas sector.

[202] Occupational Safety and Health Act (2006)

4.6.1 The National Oil and Gas Policy for Uganda (2008)

The goal of this policy is to use the country‟s oil and gas resources to contribute to early achievement of poverty eradication and create lasting value to society.[203] The policy recognises the need to protect the environment and health during oil exploration. Principle 5.1.5 specifically provides for protection of the environment and the conservation of biodiversity. It provides that the environment, human development and biodiversity should be neatly balanced for mutual benefit and survival and that the policy should contribute to and promote this balance to ensure sustainable development. It imposes a responsibility on oil companies to protect the environment in which they work or any areas in the country affected by their operations while the government is required to legislate regulate and monitor compliance.

Health and safety measures are crucial in oil exploration and production because of the nature of the activities involved. Under Principle 6.2.5, the Oil and Gas Policy makes provisions for protection against activities that negatively affect health. It thus recognises several potential causes of negative impacts on human health from oil and gas activities such as oil spills, which can contaminate water sources leading to sickness and disease; gas blowouts, which can result in fires that destroy property and may lead to loss of human lives; and gas flares and dust, which result in air contamination leading to sickness. The policy seeks to promote prevention and rapid emergency response mechanisms and efforts to construct roads in a manner that reduces or prevents dust pollution.

The policy further recognises that drilling in settled communities and water bodies used by the population can be hazardous. It requires that where deviation/directional drilling can minimise these hazards and achieve the desired results of the drilling objective in an efficient manner, deviation drilling should be promoted. This minimises hazards such as water pollution that impacts the health of the workers and the people in the surrounding communities especially thosearound water bodies such as Lake Albert in the Albertine region of Uganda.

The policy also recognises that health hazards do not occur in isolation of each other. While pollutants and toxins are directly inhaled by humans, causing disease, they also invade the food

[203] The Republic of Uganda, National Oil and Gas Policy for Uganda (2008).

chain, entering fish, animals and vegetables. Thus, monitoring of the quality of water and food is needed to test for unacceptable levels of pollutants and toxins such as lead and mercury. It affirms the need to collaborate with other relevant policies, to support the review, updating and implementing the waste disposal standards, together with the establishment and enforcement of the necessary monitoring, evaluation and control mechanisms.

4.6.2 The Energy Policy (2002)

In 2002, the Energy Policy (2002) for Uganda[204] was published. The goal of the policy is to ensure that the energy needs of the Ugandan population in terms of social and economicdevelopment are met in an environmentally sustainable manner. The national Energy Policy objectives to this end include the following: to establish the availability, potential and demand of the various energy resources in the country; to increase access to modern and reliable energy services as a contribution to poverty eradication; to improve energy governance; to stimulate economic development; and to manage energy-related environmental impacts. In pursuit of theseobjectives, the government of Uganda is required to ensure that environmental considerations are given priority by energy suppliers and users to protect the environment, and should put in place amonitoring mechanism to evaluate compliance with established environmental protection guidelines.

The policy makes provisions for the management of upstream and downstream in the industries of the oil sector in Uganda. The objective for upstream management is to establish the petroleum potential of the country and to promote its exploitation, while for downstream to ensure an adequate, reliable and affordable supply of quality petroleum products for all sectors of the economy at internationally competitive and fair prices within appropriate health, safety and environmental standards. The policy proposes general strategies that are necessary for environmental regulation. It requires the development of a mitigation plan to reduce environmental hazards in all oil operations and improvement of the management and safety measures of the national strategic reserves.

[204] The Republic of Uganda, „The Energy Policy for Uganda“, www.energyandminerals. go.ug/pdf/EnergyPolicy.pdf (accessed on 2 November 2020).

4.6.3 The National Environment Management Policy (1994)

The National Environment Management Policy is an output of the National Environment Action Plan (NEAP) process. The overall goal of the policy is to establish sustainable social and economic development, which maintains or enhances environmental quality and resource productivity on a long-term basis that meets the needs of the present generation without compromising the ability of the future generation to meet their own needs[205]. Specifically, the policy seeks to meet the following objectives:[206] to enhance the health and quality of life of all people in Uganda and promote long-term sustainable, socio-economic development through sound environmental and natural resource management and use; integrate environmental concerns in all development policies, planning and activities at national, district and local levels, with full participation of the people; and conserve, preserve and restore ecosystems and maintain ecological processes and life support systems, especially conservation of national biological diversity. This is geared at ensuring that there is adequate environmental health and safety.

The policy also seeks to optimize resource use and achieve a sustainable level of resource consumption; raise public awareness to understand the appreciate linkages between environment and development; and ensure individual and community participation in environmental improvement activities. Underlying these broad policy objectives are certain key principles which guide policy development and implementation strategies:[207] Every person should have a constitutional right to live in a healthy environment and the obligation to keep the environment clean; the development of Uganda‟s economy should be based on sustainable natural resource use and sound management; security of land and resource tenure is a fundamental requirement of sustainable natural, resource management; and that the utilization of non-renewable resources should be optimized and where possible their life extended by recycling. Environmentally friendly, socially acceptable and affordable technologies should be developed and disseminated for efficient use of natural resources; full environmental and social costs or benefits foregone asa result of environmental damage or degradation should be incorporated in public and private sector planning and minimized where possible; priority should be given to establishing a social

[205] Chapter 2 part 2.1 of the policy
[206] Part 2.2
[207] Part 2.3

and economic environment which provides appropriate incentives for sustainable natural resource use and environmental management; and an integrated and multi-sectoral systemsapproach to resource planning and environmental management should be put in place. Regular monitoring and accurate assessment of the environment should be carried out and the information widely publicized; increased awareness and understanding of environmental and natural resource issues by Government and the public should be promoted; social equity, particularly when allocating resource use should be promoted; and sub-regional, regional and global environmental interdependence should be recognized.

4.6.4 The National Water Policy (1999)

The overall objective of the policy is to manage and develop the water resources of Uganda in an integrated and sustainable manner. This is to be done in a manner that ensures and provides water of adequate quantity and quality for all social and economic needs of the present and future generations, with the full participation of all stakeholders. The water policy requires application of Environmental Impact Assessment in all water related projects and for integration of the water and hydrological cycle concerns in all development programmes. With respect to oil exploration the policy provides for: upstream and downstream water use relationships; regulation of industrial discharges of effluents to water; use and sharing of water resources by various stakeholders; and international cooperation of trans-boundary water resources. This policy is crucial for oil exploration and production because it emphasizes water quality and quantity. Hence in light of the policy the operators should ensure that their activities do not lead to pollution of neighbouring waters for example through discharge of aqueous wastes. According toa survey done in Bunyoro area the oil wells were found to have spilled into neighboring areas causing pollution of the land. This was contrary to The National Water Policy as pointed out. Henceforth the oil and gas industry is to some extent non compliant to these standards.

4.6.5 Uganda Forestry Policy (2001)

The objective of the Uganda Forestry Policy is to establish an integrated forest sector that achieves sustainable increases in the economic, social and environmental benefits from forests and trees by the people of Uganda, especially the poor and vulnerable. The policy provides for:

the protection of Permanent Forest Estate (PFE) under government trusteeship and the development and sustainable management of natural forest on private land and a wider cross section of stakeholders‟ participation in the management of the forest estate and in the conservation and sustainable use of forest biodiversity. Maintenance of the forest cover is crucial for oil exploration and development. This is more so because it is already reported that a number of forests have been destroyed during site clearing operations. Some of the affected or at least threatened forests include Budongo Forest Reserve, Itwara Forest Reserve, Kagombe Forest Reserve and many others.

4.6.6 Uganda Policy Framework for Industry Sector (2008)

The vision of the policy is to build the industrial sector into a modern, competitive and dynamic sector fully integrated into the domestic, regional and global economies. The policy objectives include the exploiting and developing natural domestic resource based industries such as petroleum and promotion of competitive industries that use local raw materials. The mainfeatures of this Policy Framework, drawn in line with objectives of PEAP, PMA and Strategic Exports Programme (SEP), among others are to: create a business friendly environment for private sector-led industrialization in which industries will develop, improve productivity and thequality of products through, inter alia, creativity and innovation and become more competitive inthe global economy; improve infrastructure development for effective and efficient industrialization program; promote environmentally health and safe sustainable industrial development to reinforce national goals of long-term growth and development and promote safe work place practices in all industry sub-sectors.

4.7 Institutional Framework for enforcing compliance with Environmental Health and Safety standards during oil and gas exploration and production.

4.7.1 Ministries

a) Ministry of Gender, Labour and Social Development

The Ministry, in collaboration with other stakeholders, is responsible for community empowerment, protection and promotion of the rights and obligations of the specified vulnerable

groups for social protection and gender responsive development.[208] The Ministry is further tasked with ensuring that occupational health and safety standards are maintained in working environments in Uganda. This covers the workers in the Oil and Gas rigs in the Albertine region. The Ministry ensures this by carrying out inspections in the Oil and Gas exploration andproduction areas and engaging the employees within the Oil and Gas industries in discussions on the various health and safety problems they encounter while working as seen in the previous chapters for example lack of safety or protective gear, exposure to dangerous chemicals such as crude oil and gas, lack of adequate health services and the like. Through this the Ministry has powers to order the Oil and Gas companies such as Tullow Oil to ensure that necessities are in place for a healthy and safe working environment.

On the Compliance with the Occupational Safety and Health Act, No. 9 of 2006 Specifically "Plant Examination and Workplace Registration in line with The Occupational Safety and Health(Plant Examination and Workplace Registration Fees) Regulation, 2014" And "Approval of Architectural Plans/Drawings of New Workplaces and Alteration of ExistingOnes" November 2014, the Ministry of Gender, Labour and Social Development has a mandate under the Occupational Safety and Health Act, No. 9 of 2006 to ensure that all public and private workplaces/enterprises/companies/organizations adhere to safety and health measures.[209] The Occupational Safety and Health Act, 2006, Section 40 mandates the Commissioner for Occupational Safety and Health to keep a register of all work places in the country and pursuant to this, Section 41 requires that a fee be paid before a workplace is registered. Section 69-82 requires a fee to be paid for examination and certification of statutory plants and equipment like steam boilers, air receivers, gas receivers, mobile cranes, tower cranes, overhead cranes, lifting chains, shackles and lifts among others, by an authorized person.

The Ministry recognises all those key stakeholder, organisations in Uganda‟s economy who have continually provided Ugandans with significant employment opportunities thereby contributing to national revenue in addition to poverty alleviation. The Ministry therefore wishes to foster

[208] http://www.mglsd.go.ug/ accessed on 8th/August/2020
[209] Statement on Occupational Safety Ministry of Gender, Labour and Social Development Press Statement

better working relations with you, by offering you efficient and effective service that you deserve.

In order to manage the challenges and risks associated with the work environment arising out of the various workplace and work-related hazards and manifested by numerous near misses/ incidents, accident occurrences and occupational diseases the Ministry through the Department of Occupational safety and health is determined to improve on its delivery of Occupational Health and Safety Services. Through assisting employers to main stream Occupational Health and Safety into all their corporate goals, operations and work activities, we believe there shall be more sustainable economic growth at the individual, organisational and national levels.

Over the recent past, there have been rampant occupational accidents at construction sites where; excavations have caved in, roof tops of structures collapsed, fire outbreak among others. Even when the buildings have been approved by local authorities, various safety and health measures that ought to be incorporated during the design of the drawings are completely ignored rendering the buildings to be hazardous.

Many commercial and public buildings lack sound occupational safety and health systems for instance some buildings are inaccessible by Persons with Disability (PWDs), staircases/corridors are below minimum standard requirements, inadequate fire safety systems, and inadequate sanitary amenities for occupiers and users. It should be noted that with the recent threats of terrorism, plans/drawings must incorporate issues of occupational safety, health and security. It should be noted that the approval of architectural drawings by local authorities without considering section 42 of the Occupational Safety and Health Act, No. 9 of 2006 renders all the process null and void. The Local Authorities ought to approve the drawings after obtaining input from the Department of Occupational Safety and Health. All public and private workplaces (companies/organizations/enterprises) must comply with aforesaid provisions.

In order to sustainably achieve the objective of continued minimisation of work-related incidences, illnesses, injuries and accidents, there is need for collective effort of everyoneinvolved, hence making safety everybody‟s business. Safer workplaces and a healthier work

force shall therefore guarantee higher productivity, better products / service delivery and improved competitiveness.

The purpose of this statement is to inform all stakeholders the basic provisions of the Occupational Safety and Health Act No. 9, 2006 among which are registration of workplaces, institution of safety and health measures at the workplace, statutory equipment inspection and certification, and effective information keeping and sharing. The Accounting officer of theMinistry of Gender, Labour and Social Development is required to ensure that Non Tax Revenue(NTR) is collected from workplace registration and statutory equipment inspection. This cannot be effectively done without sensitizing all stakeholders about this requirement of paying the stated fees.

The Statutory Instrument No.87 on Occupational Safety and Health (Plant Examination and Workplace Registration Fees) Regulation, 2014 spells out the amount of fees to be paid by individual workplaces depending on the nature of work, level of risk they pose or the number of workers they are employing. Similarly, the same regulation spells out the amount of fees to be paid by organizations/proprietors in possession of plants and equipment earlier mentioned above.All stakeholders are therefore are required to comply to avoid any inconvenience associated withthe closure of their business as a result of Non Compliance. Technical officers within the Occupational safety and health department are at your disposal for any advice and compliancy requirements.[210]

In accordance with section 13 of Occupational Safety and Health Act, 2006, it is obligatory for an employer to ensure health, safety and welfare of persons at workplace. Employer must take measures to keep the workplace pollution-free by employing technical measures, applied to new plant or processes in design or installation, or added to existing plant or process; or by employing supplementary organisational measures.

Employer must ensure safe working environment including its vicinity. Proper arrangements should be made to ensure safety and absence of health risks related to the use, handling, storage

[210] Ibid

and transport of articles and substances. Provision and maintenance of workplace which is adequate regarding facilities and arrangements for the welfare of worker is also important.

Employer should provide and maintain safe and risk free means of access to and exit from the workplace. Workers must be well informed of the real and potential dangers associated with the use of the substance or machinery and they must be well equipped with personal protective equipments to prevent the risks of accidents or of adverse effects on health.[211]

(i) Free Protection

In accordance with the provisions of the Occupational Safety and Health Act, it is the responsibility of employer to provide free protective equipment including clothing to the workersinvolved in hazardous work. The type of PPE needed varies depending on the nature of work being performed. The right use of PPE reduces risk of accident and the adverse effects onhealth. It is also a duty of the employer to provide instructions for the use of personal protective equipment and make sure that they are used whenever required.[212]

(ii) Training

In accordance with the Occupational Safety and Health Act, it is the responsibility of an employer to provide instruction, training and supervision as is necessary to ensure health and safety at work of his workers.[213]

(iii) Labour Inspection System

Labour inspection system is present in Uganda. Occupational Safety and Health Act provides for a vibrant labour inspection system (part II). The Commissioner is responsible for the administration of Occupational Safety and Health Act to improve and ensure health, safety, security and good working conditions at the enterprises, inspecting enterprises and ensuring the law enforcement.

[211] S13 of Occupational Safety and Health Act 2006
[212] S 13(2g), 19, 91 & 95(7) of Occupational Safety and Health Act 2006
[213] S 13(2c) of Occupational Safety and Health Act 2006

The national legislation provides inspectors the power to enter, inspect and examine the work premises at any time during day or night; inspect any machinery, plant, appliance, fitting or chemical in the workplace; take measurements, photographs, samples and make recordings for the purpose of examination and investigation; ask for registers, documents, certificates and notices to inspect, examine and copy them; interview any one; make all the necessary examination and inquiry; if the inspector is a medical practitioner he/she may carry out medical examinations; and may take police officer along with him/her if necessary. The Labour inspectoris also authorised to dismantle the substance or to subject it to any process or test if it appears to have caused or likely to cause danger to safety and health.

If an employer or his representatives do not facilitate the inspector and obstruct the execution of his duties, he/she commits an offence and is liable to a fine up to forty eight currency points or to imprisonment up to one year or to both. The Inspector must not disclose any informationobtained during the course of his/her duty.

b) Ministry of Energy and Mineral Development

The Ministry of Energy and Mineral Development (MEMD) is responsible for the Energy and Minerals sector in Uganda. This is the Ministry responsible for management, regulation and development of the Oil and Gas industry in Uganda.[214] One of the main functions of the Ministry is to issue petroleum licenses to Oil and Gas companies to enable them carry out Oil and Gas exploration and production in Uganda.

These licenses are issued subject to fulfillment of the mandatory requirements as indicated in the Petroleum (Exploration, Development and Production) Act of 2013 for example the Oil and Gas Company applying for the license ought to have carried out a complete Environmental Impact Assessment (EIA). This plan must be presented in accordance with other requirements in the Act to ensure that there is a plan to deal with the inevitable environmental health and safety impacts that result from oil and gas exploration and production for example the then Minister of Energy of Energy and Mineral Development, Hon Eng. Irene Muloni on August 30th ,2016 granted eight petroleum production licenses to Total E&P Uganda B.V (3 licenses) and Tullow Operations

[214] http://www.energyandminerals.go.ug/ accessed on 8th/August /2020

Uganda Pty (5 licenses) following conclusion of the evaluation of the applications for Production Licenses submitted by the two companies respectively.

4.7.2 Authorities and Agencies

National Environmental Management Authority (NEMA)

The National Environmental Management Authority is a tool for monitoring all activities that affect the environment in Uganda provided for in the National Environment Act (NEA). This Act defines environmental monitoring to mean the continuous determination of actual and potential effects of any activity or phenomenon on the environment, whether short term or long term. The general objective of monitoring is to establish the status of environment and to evaluate the impacts of various activities on the environment in general and natural resources in particular.

The specific objectives are: to understand the present levels of degradation by various agents so as to judge whether the abatement policies, projects and programmes are succeeding; identify environmental risks and impacts not previously known so that they can be brought under control; follow the movement of harmful agents though the environment into living creatures and man himself; and to identify activities that are beneficial to the environment and ensure sustainable use of natural resources.

NEMA is required, in consultation with a lead agency, to monitor all environmental phenomena with a view to making an assessment of any possible changes in the environment and their possible impacts; and the operation of any industry, project or activity with a view to determining its immediate and long-term effects on the environment. For this purpose, an environmental inspector appointed[215] may enter upon any land or premises to monitor the effects upon the environment of any activities carried out on that land or premises.[216] This is to ensure that there is proper use of the environment such that it is not depleted totally because there has to be sustainable development which enables future generations to use the same environment as well.

[215] Section 79 NEA
[216] Section 23 NEA

4.7.3 Judiciary

The Judiciary is the body responsible for administration of justice. It is indicated in the Constitution of the Republic of Uganda that judicial power is derived from the people and shall be exercised by the courts established under in the name of the people and in conformity with thelaw and with the values, norms and aspirations of the people.[217]

Henceforth the judiciary is responsible for bringing to justice those who are guilty of breaching the environmental health and safety regulations and laws as above discussed. This is aimed at deterring people and oil and gas companies from violating these laws and regulations especially during the oil and gas exploration and production activities.

Moving forward, with effect from August 2017, perpetrators of environmental degradation will be tried in a new specialised court called: Utility, Standards, Wildlife and Environment. The creation of the court is a culmination of years of protracted negotiations between Judiciary and environment ministry. The creation of a specialised court, a departure from the normal court system, rests on the allegations that the status quo has delayed cases and yet the environment is degraded at a faster rate.[218]

The Judiciary spokesperson, Mr Erias Kisawuzi[219] said that the new court seeks to lessenissuance of court injunctions against agencies like the National Environment Management Authority (NEMA) and Uganda Wild Life Authority (UWA), since their cases will be handled expeditiously.

4.7.4 NGOs

Nongovernmental organisations such as Advocates Coalition for Development and Environment (ACODE) and TEAN have contributed massively to environmental health and safety standards. ACODE for example is an independent public policy research and advocacy think tank based in Uganda but working in Eastern and Southern Africa. One of the core pillars of ACODE is to transfer evidence based research findings and alternative policy options from research papers and

[217] Article 126 (1) The 1995 Constitution of the Republic of Uganda
[218] P. Tajuba, "Judiciary okays environmental court" Saturday Monitor (Uganda February 18th, 2017) 5.
[219] Ibid

books into civic spaces that generate public debate to promote pro-poor policy making and effective policy implementation.

These organisations have gone to courts of law where there have been cases of violation of the environment and this has led to a plethora of cases such as ***Advocates Coalition for Development and Environment (ACODE) v Attorney General***[220] where ACODE sought orders and a declaration that issuing a private company (Kakira Sugar Works) a 50 year forest permit by government in a forest reserve for the purpose of growing sugarcane was in contravention of the Constitution because there was no project brief provided by the private company and that the views of the communities were never sought. It was held in the favour of the applicants and the license was revoked basing on the private company failing to provide the project brief.

These NGOs however face a huge financial challenge and in most cases there is no proper mechanism to enforce the court ruling. This is because they are limited in terms of resources and authority. For example in the above cited case although ACODE was successful they were unable to enforce the judgment as it was merely declaratory.[221] The permit was merely revoked and the developer, Kakira Sugar Works is still occupying the forest, which it cut down and planted sugar cane in blatant violation of the law.

This was also witnessed in high profile case of ***Greenwatch and ACODE v Golf Course Holdings***[222] where judgment was passed against the applicants. However this had grave financial repercussions to the extent that Greenwatch ceased operating in Uganda as a result of the heavy financial burden incurred from the costs awarded to the respondents. However these nongovernmental organisations remain relevant in ensuring that environmental health and safety standards are complied with especially through Article 50 of the 1995 Constitution of the Republic of Uganda which allows them to represent a large number of people that could be affected by the inevitable impacts of oil and gas operations that cause to people‟s environment, health and safety. This is through a procedure termed *public interest litigation*.

[220] HCMC No. 0100/2004
[221] Ibid
[222] HCMA No. 390/2001

4.8 Conclusion

The above discussion has indicated that workers on oil rigs have suffered and continue to suffer numerous occupational injuries, occupational diseases, and psychological problems as well as environmental effects. This call to action stems from the low priority that investors or entrepreneurs currently give to workplace health and safety issues.[223] Studies show that finance, credit services, and skill development are their priorities and occupational health and safety training nowhere near their priority. This lack of priority to safety is contrary to research findings that management commitment to safety is one of the most important determinants of safety climate and/or culture in an organization. Apart from the measures recommended for the management of the Environmental health and safety hazards, there is a need for attitudinal change among the government officials in the oil and gas sector, corporate leadership of the oil companies themselves, and the employees who will work on the oil rigs.

It should be noted that there are several laws and regulations that emanate from there from including The National Environment (Waste Management) Regulations (1999), The National Environment (Noise Standards) Regulations, The National Environment (Wetlands, River banks and Lake Shores) Regulations, The Water Act Cap 152 and Regulations there under, The Land Act, The Public Health Act Cap 281, The Employment Act, The National Forestry and Tree Planting Act and many more which are all geared towards environmentally healthy and safe working and living conditions especially in areas around the Oil and Gas exploration and Production sites. Moving forward it is reported by the Judiciary that with effect from August 2017, the perpetrators of environmental degradation will be tried in a new specialised court called "Utility, Standards, Wildlife and Environment, Government has announced.[224] This is as a result of years of negotiations between the Judiciary and the Environment Ministry. The rationaleis that there is need for Environmental related cases to be handled expeditiously. Henceforth withthese standards in place the Oil and Gas Industry in Uganda is better equipped to deal with risk perceptions, safety climate, safety motivation, safety intentions, behaviour-based safety interventions and accident-prone personality factors that determine the degree of compliance

[223] Op cit 74
[224] P. Tajuba Op Cit at Page 5

with safety regulations to ensure that there is an efficient environmental health and safety system in the Oil and Gas industry in Uganda.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of findings

This study was premised on the following research questions;

The central research question is "Is there compliance with the Environmental Health and Safety laws during oil and gas exploration and production in Uganda? The specific research questions are: to identify the environmental health and safety impacts caused by oil and gas exploration and production sector in Uganda; to analyze the extent of compliance with the national policy, international and regional legal framework that provides for environmental health and safety standards during the oil and gas exploration and production industry in Uganda and finally to propose mechanisms through which the enforcement and regulatory stakeholders could potentially improve the levels of compliance with Uganda‟s environmental health and safety law.

The findings were as follows:

Uganda is about to commence commercial oil and gas production at least by 2020. This follows the discovery of oil deposits worth about 3.5 billion barrels. In the course of this research it was found that the oil industry of Uganda has reached the midstream stage. This is a stage of development and production, storage, distribution and marketing. The ongoing stage now is the development of structures and facilities for commercial production. The main reason for these plans to construct a refinery. It has been established that the oil and gas exploration and production process involves a number of activities which have implications for environmental health and safety law compliance. These activities include the exploration surveying, explorationdrilling, appraisal, development and production, transportation of oil and gas, storage and site decommissioning and rehabilitation. However, if these processes are not properly managed under a regime that respects environmental law compliance, Uganda may suffer an environmental curse.

That the above activities can lead to degeneration of the environmental health and safety through occupational injuries and diseases and other related health and safety hazards which affect wellbeing of workers caused by lack of protective gear while working on the oil fields, atmospheric/ air pollution; soil/ terrestrial pollution; degradation of the aquatic environment; human, socio-economic and cultural impacts, ecological interferences and emergencies such as oil spills. It was also established that Uganda has sound policy and legislative environmental health and safety law compliance regime which if enforced can lead to an environmentally healthy and safe sound oil and gas sector. This composed of a matrix of international and regional binding and nonbinding instruments which Uganda has ratified, and national enactments. Whereas some laws and regulations especially on environmental health and safety standards need to be made more effective, the present legal regime is good enough to start with. Furthermore a court has been set up to handle environmental concerns to ensure that they are handled expeditiously. This and other structural, legal and institutional changes should be implemented to ensure effective compliance with environmental health and safety standards as will be pointed out in the recommendations below.

So far, the performance of the actors as regards environmental health and safety law compliance is not desirable. Though some progress was made for example by formulating the Environmental Sensitivity Atlas for the Albertine Graben; Albertine Graben Monitoring Plan and conduct of EIA and SEA, there is still a lot to be desired despite efforts to ensure that the workers in Oil andgas industry especially within the oil rigs have basic necessities to ensure that they work in a safeand healthy environment. Weaknesses stem right from the government which is being too slow in enacting new required laws and Regulations and/or updating existing ones. There is also a problem with implementation of EIA and enforcement of occupational safety and health standards as baseline studies and reports prepared by operators are still facing a lot of criticism.

The multi-sectoral monitoring system proposed is not operating to the required standards due lack of clarity of duties and responsibilities especially as between the central government sectors and local governments. The companies have also failed to publish their waste management plans, something which still poses a future threat to the environmental health and safety status in the oil and gas industry of Uganda.

Laws should furthermore be made to provide for liability for damage arising from the impacts of environmental health and safety noncompliance such that the defaulters are made liable for their actions. Aside from finding companies liable for non compliance, regardless of fault, both the upstream and midstream laws (Section 130 and Section 58 (1)) fail to provide for a compensation regime for victims of such pollution or any losses resulting from poor management of petroleum operations, in particular, the unforeseeable long term damages such may have on the environment and human health. It would appear that according to Section 131 there is no liability for pollution damages if caused with a licence, which legalizes pollution. Liability for pollution damage should accrue with and without a licence. However, there are more clear and detailed provisions in the draft National Environment Management Bill currently under review (clauses 95-100). Clause 100 states that a person (including a legal company) who pollutes the environment is strictly liable for the damage caused to human health or the environment regardless of fault. Therefore there is need to harmonize the upstream legal provisions on pollution control with the principle legislation on environmental management suchthat the existing laws on environmental health and safety are given effective enforcement.

5.2 Conclusion

The existing oil activities are an important progress towards development in Uganda. Oil is a resource that can create lasting value for the Ugandan people. However, if the resource is not properly managed it can bring a curse rather than a blessing. The research concludes that there is no environmental health and safety law compliance in Uganda‟s oil sector. This because of the failure to fulfill the above underscored standards. Firstly the EIA conducted has been criticised for lacking full appreciation of the problem and full public participation. In addition, there wasno area specific Environmental Impact Assessments for sensitive areas such as Lake Albert. The SEA conducted is criticised for not covering the entire Albertine Graben. When it comes toaudits and reviews, the government has not come up with Audit plans for oil sector.

The environmental health and safety quality standards in the law currently are also outdated and need review. Although there is a monitoring plan, the implementation is still weak for example it is suggested that there needs to be a law in place to ensure that the National Oil and Gas Policy of 2008 is enforced. This is due to the fact that the monitoring role is concentrated in the hands

of the central government through NEMA and other agencies at the expense of local governments especially District Environmental health and safety Officers yet these are the ones on the ground. If anything, all these monitoring agencies are not only understaffed but alsopoorly funded. The laws enacted also have a general weakness.

Companies operating in the oil and gas industry in Uganda have to a large extent failed to comply with international health and safety standards. Often this demands a significant investment from local service providers in improving their systems to meet requirements. Health and safety courses include: emergency first aid, fire training, manual handling skills, risk assessments, working at heights, and lifting operations. Occasionally in Uganda complaints of pollution of land and water whereby the crude oil escapes from containment into the neighboringland thereby making the land poor for planting crops arise against Oil and Gas companies especially in Bunyoro Region where the exploration and production process is actively taking place.

The provisions in the Occupational Safety and Health Act 2006 to do protection of workers from hostile working conditions by providing protective wear during working hours are often ignored by the oil and gas companies due to weak enforcement of these standards and a poor institutional framework which does not seek to ensure that there is practical compliance to safety and health standards in the oil and gas industry. This has increased the number of occupational injuries and other related occupational hazards in and around the work places. This led government into undertaking local training content[225] whereby Uganda is in the process of increasing its own training capacity, and plans soon to employ more Ugandan trainers to conduct the courses. Currently, to ensure that the courses meet the highest standards, the company draws on its network of experienced consultant trainers, but it expects to have four Ugandan trainers by the end of 2012.

The fines prescribed are not deterrent enough to scare away polluters. Hence pollution is already recognizable in the Albertine Graben in the form of noise, bad smell, unrehabilitated abandoned wells and the like which have negatively impacted the environmental health and safety status of

[225] http://www.oilinuganda.org/oil-industry-2/other-insurance-distribution-associations-training/petroleum-skills-uganda-ltd.html

the region. In fact, no company has up to date published a clear waste management plan. While the government confirms its commitment to transparency and accountability under the National Oil and Gas Policy (NOGP), these standards are not implemented in practice. To date PSAs have not been made fully public despite campaigns by CSOs. The oil and gas industry is further hampered failure of the existing laws to establish liability for damages due to pollution during the upstream and midstream stages of oil and gas production.

Uganda has further not joined EITI. In addition, there has not been clear accountability for the signature bonuses received by the Government. A signature bonus is a one off upfront payment made by an oil company to a government in return for rights to explore or exploit oil. In a Report compiled by Platform and CISCO (Civil Society Coalition of Oil), Uganda received USD500,000 in signature bonuses in its exploration areas but this money cannot be traced to any public account.[226] A Report compiled by Global Witness reveals that there has not been enough communication to manage public expectations. Throughout the interviews conducted in oil affected areas, it became clear during discussions that not enough information was in the public domain regarding the timing of oil production; the feasibility and locations of the proposed refinery and pipelines; the beneficiaries of the oil, in particular the role of the traditional authority vis-à-vis government authority and information about the ways in which oil revenues are likely to be shared.[227]

Furthermore, the exploration and production of oil today in Uganda is still faced with a number of environmental health and safety management challenges such as occupational injuries, diseases and other related health and safety hazards, effective implementation of EIA principles, threats to humans, animals, ecology, atmosphere and culture, air, water and land pollution. All these challenges have implications on environmental health and safety law compliance in the oil and gas sector. In order to address the above challenges there should be commitment of all companies licensed to carry out exploration and production. Similarly, the Uganda government needs to have a solid understanding of exploration and production operations and how they may affect the environmental health and safety status of communities within. The activities of these

[226] Global Witness Uganda‟s Petroleum Legislation: Safeguarding the Sector (Feb.2012) at pp. 12-14
[227] Ibid

two camps should be complementary and geared towards achieving the most cost effective and environmentally healthy and safe sound petroleum sector.

The environmentally healthy and safe sound oil and gas sector envisaged here should be one which systematically integrates environmental health and safety issues into business decisions; integrates health, safety and environmental management into a single system; considers all environmental health and safety components that is soil, air, water, plants, people and animals in decision making at strategic planning and operational levels, prevents waste at its source through pollution prevention techniques and making maximum re-use of waste components rather than installing treatment for discharges; evaluates alternatives on a cost/benefit/risk basis that includes environmental health and safety values and aims at minimizing resource inputs.[228]

5.3 Recommendations

a) Strengthen legal and institutional frameworks through adoption of an enforcement policy

There is need to enhance compliance with environmental health and safety principles through strengthening the legal framework such that it is preventative in nature as opposed to being reactive. For example the Petroleum (Exploration, Development and Production) Act, 2013 charges the National Environment and Management Authority (NEMA) with the responsibility of making regulations for the management of the production, transportation, storage, treatment and disposal of waste arising out of petroleum activities. However, the prescribed fine of five thousand currency points in Section 3 (9) is not dissuasive enough. Raising the fine to one hundred thousand currency points as prescribed in Section 3 (7) could guard against non- compliance by licensees.

The Minister of Energy and Mineral Development should also publicly disclose the outcomes of an assessment of the impact of the petroleum activities on trade, industry and other risks such as occupational health and safety hazards, pollution, or economic and social costs. Although an assessment is required under Section 47 (3) for new licensing areas, there is no provision for similar assessments provided for in the other stages of resource development for interested stakeholders to comment. Even though the affected communities are accorded an opportunity to

[228] UNEP, op cit, at 27

express their views on new areas of exploration, their fate is left in the hands of the Minister who may disregard their interests (Section 47 (6). There is need for reassertion in the form of a constitutional amendment to eliminate any suspicions between the people and their government about benefits of petroleum.

There is need for Uganda to join the Extractive Industries Transparency Initiative (EITI) and form the Oil and Petroleum Uganda Association to oversee activities in Uganda. There should further be an enforcement policy whereby inspectors are appointed whose main objective is to stimulate compliance with health and safety legislation and to ensure that a good standard of protection is maintained. Inspectors have, and make use of, important statutory powers. They canenter any premises where work is carried out without giving notice, although they will often visitby prior arrangement. They can talk to employees and safety representatives, take photographs and samples, and impound dangerous equipment and substances. If they are not satisfied by the levels of health and safety standards being achieved, they have several means of obtaining improvements

Furthermore Government should create a legal and policy framework ensuring that exploitation of natural resources is conducted in a manner that respects human rights and freedoms especially rights of workers at work places basing on the right to a healthy and safe environment. Oil companies are equally enjoined to respect, protect and provide remedies to victims of their corporate quest for the exploitation of natural resources in Uganda. Before issuing a certificate of compliance in accordance with the provisions of Section 13(6) of the Public Finance Management Act, 2015, the National Planning Authority (NPA) should demand that the Ministryof Energy and Mineral Development provides for the review of the Upstream and Midstream laws to make them human rights compliant in the subsequent National Budget Framework.

The legal framework should provide for public disclosure of contracts and environmental impact assessments for accountability purposes and a demonstration by government and international oil companies to provide remedies to those affected by the negative social and environmental externalities of the petroleum industry in Uganda. International oil companies should work closely with government and civil society to consult and secure free, prior and informed consent through community engagement in the conduct of environmental impact assessments in addition

to making them and other contracts such as production sharing agreements and signature bonuses publicly accessible without superfluous bureaucratic limitations.

b) Safe and Healthy working conditions

The Ugandan Government should ensure that there is safe and healthy working conditions for working men and women; by authorizing enforcement of the standards developed under the Act; by assisting and encouraging the States in their efforts to assure safe and healthful working conditions; by providing for research, information, education, and training in the field of occupational safety and health; and for other purposes.

c) Waste Management Planning

It has been observed that one of the major challenges to environmental health and safety law compliance in Uganda‟s oil and gas sector is pollution due to poor waste management. It was overwhelmingly pointed out by the respondents in Bulisa that the waste products which is the crude oil and other related chemicals as a result of the production process pollute the land and make it unfit for growing crops. This waste is also harmful to the health of the workers in the oil rigs and the surrounding communities hence there is need to develop a waste management plan identifying anticipated solid and liquid waste streams and addressing determination, inspection and waste minimization procedures, storage locations, and waste-specific management and disposal requirements. Include a recycling strategy to be practiced by workers during all project phases; minimize the generation of both solid and liquid wastes (including produced water) from well drilling and well development operations that are potential environmental health and safety contaminants and employ drilling and recovery systems that recycle drilling fluids, and minimize the amount of final disposal of contaminated fluids and materials.

d) Corporate Social Responsibility

There is need for the government to ensure that oil and gas companies practice corporate social responsibility such that they are able to give back to the communities within which they operate by maintaining a good healthy and safe environment for the workers and conserving the environment. Activities such as tree planting, provision of safe working gear, health clinics,

setting up on-site and off-site emergency plans, social meetings between people, government and oil and gas companies to harmonise the working and living conditions of workers especially should be encouraged to ensure that there is compliance with environmental health and safety standards. This also creates a good and healthy relationship among the main players involved.

There is further need to embrace bio-diversity offsets through corporate social responsibility such that plant and animal life is also protected especially in communities which widely embrace agriculture. These are biodiversity conservation management or improvement actions considered to counterbalance impacts to biodiversity resulting from development. This can be achieved through purely voluntary measures taken by corporations, conservation management or other actions negotiated between decision-makers and developers.

e) Environmental health and safety Sound Technology

Utilizing of efficient and Environmental health and safety Sound Technology. This technology ensures health and safety, protects the environment, is less polluting, uses all resources in a more sustainable manner, recycles more of the waste and products, and handles residual wastes in a more acceptable manner than the technologies for which they were substitutes. Environmental health and safety sound technologies in the context of pollution are "processes and product technologies" that generate low or no waste that could cause harm to the health or wellbeing of the workers and also for the prevention of pollution. They also cover "end of the pipe" technologies for treatment of pollution after it has been generated.

f) Air Quality Monitoring Systems

Implementing air quality monitoring systems. There is a need to have mitigation measures to avoid or reduce air quality impacts from oil and gas production. Examples of such measures include: fugitive dust, air releases, process emissions and secondary emissions. Many impacts can be reduced or avoided when considered during the siting and design phase.

g) Environmental health and safety Training and Awareness

There is need for environmental health and safety training and awareness so that potentially affected people can know their rights, the relevant legislative requirements, detailed procedures and work instructions for key activities and tasks, risks and emergency plans and the means of responding to incidents. Such training should also go towards the bodies responsible for enforcement of environmental health and safety standards to ensure that they are able to effectively implement these standards such that occupational hazards in the oil and gas industry are avoided. There is further need to employ these people after the training as per Article 21 of the Petroleum (Exploration, Production and Development) Act, 2013 which provides for Training and Employment. It is to the effect that "train and employ suitably qualified Ugandan citizens following commencement of Production and undertake the schooling and training of Ugandan citizens for staff positions, including administrative and executive management positions, provide grants to support the training of government officials on matters related to the management and oversight of the petroleum sector. However, these laws lack provisions that ensure that Ugandans employed by the transnational oil companies receive the same treatment, pay and opportunities at their work place with their foreign counterparts. A recent report by the Office of the Auditor general[229] revealed that Ugandans working in three transnational oil companies (Tullow Oil, CNOOC and Total) were being underpaid compared to their foreign counterparts. The report discovered that expatriates on average earned five to ten times more than nationals, while other expatriates were found to have overstayed past the due dates for the nationalization of their positions. Henceforth there is need to employ the trainees such that they serve in the best interests of the nation by upholding the environmental health and safety standards.

h) Identification of potential hazards

Oil companies should maintain procedures to identify systematically the environmental health and safety hazards and effects which may affect or arise from their activities, and from materials employed in them such as injuries and diseases on the oil rigs and other occupational health and

[229] Keith Muhumuza, "Auditor General Faults and Government and Oil Companies on skilling Locals." http://www.monitor.co.ug /Business/Auditor General faults government-oil/-/688322/2687092/-/af385ez/-/index.html (accessed June 30th, 2017).

safety hazards as well as the various environmental impacts to human life and animal life. The scope of the identification should encompass all activities from inception oil activities through to decommissioning.

This can be achieved through a Health, Safety and Environmental Impact Assessment (HSEIA) which a systematic process of identifying the impact of existing, new or substantially altered projects on health, safety and the environment. Identifying potential HSE risks and taking the necessary measures to deal with them quickly and effectively can result in cost savings by avoiding preventable injuries and environmental disasters.

i) The role of Government

The role of government in setting and enforcing environmental health and safety regulations is crucial to minimizing the potential environmental health and safety impacts. The trend towards performance-based regulations, rather the traditional command and control approach, has the potential to stimulate more innovative and effective environmental management in all areas of the world including Uganda.

j) The role of Civil Society Organizations

Civil society organizations and the Government of Uganda have a shared interest in ensuring that oil exploitation activities are undertaken in a manner that is consistent with national policy, legislation and promoting sustainable and equitable development in Uganda. Hence there is need to shift from politicization to strengthening CSOs and supporting their works. Where there a criticism by a CSO the government should feel advised rather than insulted, and the recommendations should be implemented.

l) Expansion of stakeholder participation

The law should provide for oversight committees that comprise of the ruling party, the opposition party, civil society, and parliament to jointly undertake the scrutinizing the oil contracts, national oil receipts and national expenditure. In this context government should not be worried of civil society and the opposition but treat them as partners in avoiding the resource

curse. Public participation in oil and gas activities should also be enhanced especially when it comes to decisions that may affect them. It is very crucial that the policy goals envisaged in the oil and gas policy are implemented before oil production starts.

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