SAFETY AND SECURITY IN THE PETROLEUM SECTOR IN KENYA: AN ANALYSIS OF THE EXISTING LEGAL AND INSTITUTIONAL REGIME

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DECLARATION

I, **KIBISU MAUREEN GLORIA,** do hereby declare that this Research Paper is my original work submitted in partial fulfilment for the award of a Degree in Masters of Laws (LL.M) at the University of Nairobi, School of Law; and has not been submitted or pending submission for a Diploma, Degree in any other University. Moreover, references made to texts, articles, papers and journals, and other pertinent materials, have been fully acknowledged.

Signature.....**Date**.....

MAUREEN GLORIA

G62/88648/2016

This Research Paper has been submitted for examination with my knowledge and approval as the supervisor.

Signature.....**Date**.....

DR. IWONA RUMMEL-BULSKA

TABLE OF CONTENTS

LIST OF LEGAL INSTRUMENTS

INTERNATIONAL INSTRUMENTS

- International Convention for the Prevention of Pollution from Ships (MARPOL Convention) 1973.
- International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) 1990.
- Rio Declaration on Environment and Development, 1992.
- The Convention for the Protection of the Marine Environment of the North-East Atlantic (the 'OSPAR Convention') 1992.Marine Environment of the North-East Atlantic (The OSPAR Convention)

KENYA

- Climate Change Act No. 11 of 2016
- Constitution of Kenya 2010, Laws of Kenya.
- Energy (Petroleum Pricing) Regulations 2010, LN 196 of 2010.
- Energy Act, 2019, laws of Kenya.
- Energy Act, No 12 of 2006, laws of Kenya.
- Environmental Management and Co-Ordination Act No. 8 of 1999
- Geothermal Resources Act, 1982
- Kenya Nuclear Electricity Board Order No. 131 of 2012
- National Energy and Petroleum Policy of Kenya, 2015.
- Occupational Health and Safety Act, 2007.
- Petroleum (Exploration and Production) Act, CAP 308, laws of Kenya.
- Petroleum (Exploration, Development and Production) Act, 2019.

NIGERIA

- Constitution of the Federal Republic of Nigeria, 1999
- Harmful Waste (Special Criminal Provisions, etc.) Act, 1998
- Oil and Gas Pipeline Regulations, 1995
- Petroleum Production and Distribution (Anti-Sabotage) Act, 1975
- Petroleum Production and Distribution (Anti-Sabotage) Act, 1975

- The Environmental Impact Assessment Act, 1992
- The Mineral Oils (Safety) Regulations, 1997
- The Oil in Navigable Waters Act, 1968
- The Oil Pipelines Act, 1956
- The Petroleum Refining Regulations, 1974

Russia

- Federal Law No. 174-FZ on Environmental Expert Review, dated 23 November 1995 (Environmental Expert Review Law)
- Federal Law No. 7-FZ on Environmental Protection dated 10 January 2001 (Environmental Protection Law)

USA

- Clean Air Act of 1963 as amended in 1990
- Clean Water Act of 1972 as amended in 1987
- Deepwater Port Act, 1974
- Federal Water Pollution Control Act (FWPCA),1961
- Oil Pollution Act of 1990
- Outer Continental Shelf Lands Act, 1953
- Trans-Alaska Pipeline System (TAPS) Authorization Act, 1973

LIST OF ABBREVIATIONS

APG	Associated Petroleum Gas
DOF	Digital Oilfield
DOT	Department of Transportation
EIA	Environment Impact Assessment
EOPS	Early Oil Pilot Scheme
EPA	Environmental Protection Agency
EPRA	Energy and Petroleum Regulatory Authority
ERC	Energy Regulation Commission
ESD	Emergency Shutdown
EWT	Extended Well Tests
FEPA	Federal Environmental Protection Agency
GWPC	Ground Water Protection Council
ILO	International Labour Organisation
KPR	Kenya Police Reservists
LGUs	Local Government Units
MEND	Movement for the Emancipation of the Niger Delta
MSDA	Multi-Stakeholder Dialogue Approach
NAOC	Nigerian Agip Oil Company
NEITI	Nigerian Extractive Industry Transparency Initiative
NEMA	National Environmental Management Authority
NGOs	Non-Governmental Organizations
NNPC	Nigeria National Petroleum Corporation
NNPC	Nigerian National Petroleum Corporation
NOSCP	National Oil Spill Contingency Plan

NOSDRA	National Oil Spill Detection and Response Agency
NPRs	National Police Reservists
OEL	Oil Exploration Licence
OML	Oil Mining Lease
OPL	Oil Prospecting Licence
PHMSA	Pipeline and Hazardous Materials Safety Administration
PSD	Process Shutdown
QSR	Quality Status Report
SPDC	Shell Petroleum Development Company of Nigeria

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I would like to dedicate this report to my father Mr. Robert Filbert Kibisu, my late mother Mrs. Jane Vihenda Kibisu and to all my friends who inspired me and challenged me to be focused in life. May Almighty GOD answer your prayers and see you through in all your endeavors.

CHAPTER ONE
INTRODUCTION

1.1 Background

Safety and security in the petroleum sector is an integral aspect of the management of petroleum resources. The discovery and commencement of commercial exploitation of petroleum in Turkana, Kenya therefore calls for consideration of broader safety and security concerns that may arise. Although parts of Turkana County have been faced with security challenges due to banditry and cattle rustling, the discovery of oil is likely to escalate the security situation in the region due to the influx of non-local investors and job-seekers. Through the Early Oil Pilot Scheme (EOPS), the Kenyan government sought to facilitate trucking of oil produced in Lokichar during the Extended Well Tests (EWT) to Kipevu Storage Facilities in Mombasa by 30th June 2019 and to export 200,000 barrels of Kenya Crude Oil by the same period.[1] At the same time, the Kenyan government intends to construct a pipeline to evacuate and transport crude oil from the production fields in the Lokichar Basin to Lamu Port for storage and onward export to the international markets.[2] In August 2019, President Uhuru Kenyatta announced that Kenya had secured a buyer for 200,000 barrels of crude oil worth Sh1.2 billion and[3] Chinese State-owned petroleum multinational, ChemChina (UK) Ltd won the bid to transport the oil.

One would assume that the zeal demonstrated by the Kenyan government to commence the commercial exploitation of oil would be commensurate to the measures it has taken to address pertinent socio-economic, political and environmental issues that have arisen in the exploitation of this important resource. This is however not the case. There are many areas that have not been

[1] Ministry of Petroleum and Mining, 'Petroleum: Early Oil Pilot Scheme (EOPS)' at http://www.petroleumandmining.go.ke/petroleum/ accessed on 25/3/2019.
[2] Ibid.
[3] Edwin Okoth, 'Kenya sells its first oil to China' (Friday, August 16, 2019 *Business Daily*, Nairobi at <https://www.businessdailyafrica.com/news/China-gains-upper-hand-with-deal/539546-5237392-7c6jrnz/index.html> accessed on 10/9/2019.

fully addressed such as liability and compensation resulting from the social displacement arising from oil-related activities. At the same time, grave environmental risks to the surrounding fragile natural ecosystems and the livelihoods of the affected communities need to be carefully assessed and a comprehensive environmental and social impact assessment conducted. Consequently, the human and environmental dimensions of safety and security in petroleum exploration have not been sufficiently addressed by the existing legal framework as will be discussed in chapter three of this thesis.

The human element of safety and security entails careful consideration to the interactions between humans and organisational elements of petroleum production in Kenya. The upstream sector of the petroleum industry has a major accident potential as both exploration and production rely on advanced human-machine interfaces and are activities with a complex organisational structure.[4] The upstream sector of the petroleum industry is conceptualised to include all or any of the operations related to the exploration, development, production, separation and treatment, storage and transportation of petroleum up to the agreed delivery point.[5] In this sector, human factors have become an important and integral part of the industry's approach to safe and efficient operations.

The local communities in the oil producing areas have expressed concern and discontent about inadequate information and guidance on the redress mechanisms and procedures in human rights violations, compensation of environmental damages and their share in the revenues of the oil products.[6] These concerns and grievances have tended to encourage attempts and threats by the said communities to attack the exploration sites and interfere with oil operations in attempts of

[4]The International Association of Oil & Gas Producers (IOGP), 'Human factors' at <https://www.iogp.org/oil-and-gas-safety/human-factors/> accessed on 25/3/2019.
[5] Sec 2, The Petroleum (Exploration, Development and Production) Bill, 2015, Laws of Kenya.
[6] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya, 2016, p. 104

expressing their displeasure. This was epitomised by the blockage of oil tankers heading to Mombasa from Lokichar by the local Turkana residents on grounds that the project was only benefiting non-Turkana county residents.[7]Such blockages are a cause of alarm in the region since they can escalate to full blown attacks and therefore cause insecurity. On the other hand, oil and gas have inflamed existing cross-border intercommunal rivalries and border disputes between Turkana and Toposa on Kenya-South Sudan border and the internal Turkana-Pokot border.[8]Such incidences justify the fact that security remains a major priority for the residents and the oil exploration workers in the areas with upstream projects.[9]

However, some members of the local communities living in oil exploration areas feel that the Kenya Police Reservists (KPR) unit has prioritised protection of oil exploration installations at the expense of protecting them from criminals like cattle rustlers, bandits and militia from neighbouring communities or countries.[10]The KPR is an auxiliary force separate from the Kenya Police and made up of volunteers operating within their own locations and armed by the state.[11]

There have been several reports from Turkana citing that the residents are often forced to converge on the oil rig sites in order to seek protection from other communities during inter-community raids.[12]This is despite the availability of the KPR in the area. This justifies and

[7] Ibid.

[8] Kennedy Mkutu and Gerard Wandera, 'Conflict, Security and the Extractive Industries in Turkana, Kenya: Emerging Issues 2012-2015' (2016) at<http://crimeresearch.go.ke/wp-content/uploads/2018/02/Conflict-and-Extractive-Industries-in-Turkana.pdf> accessed on 10/9/2019.

[9] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya, 2016, P. 108.

[10] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya, 2016, at P 106.

[11] Kennedy Mkutu Agade, 'Changes and Challenges of the Kenya Police Reserve: The Case of Turkana County (2015) African Studies Review at <http://erepo.usiu.ac.ke/bitstream/handle/11732/912/agade.pdf?sequence=4&isAllowed=y> accessed on 10/9/2019.

[12] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya, 2016, at P 106.

illustrates the need for the establishment of a comprehensive policy and strategic plans to ensure that the security of both the local communities and upstream installations is upheld.[13]

Bearing in mind these and broader sustainability issues that may arise from the exploitation of petroleum in Turkana, this study seeks to discuss the safety and security concerns in the Kenyan petroleum sector separately and broadly. Furthermore, the study will discuss how these concerns are addressed in the existing legal framework in Kenya. In so doing, the study seeks to identify the shortcomings in the Kenyan legal regime with regard to safety and security in the petroleum sector and propose remedial measures at the government's disposal.

1.2 Statement of Problem

The government has access to and controls all machineries that promote and enhance security such as the Kenya Defence Forces, the National Intelligence Service, the National Police Service and the KPR. These institutions aid greatly in protecting infrastructure used in the petroleum sector by having a key authority covering security measures such as investigation and countering vandalization.

The petroleum sector is a critical component in the economy, standard of living and national security of every country. The level and the intensity of the exploitation in a country is a key indicator of economic growth and development. The Kenya Vision 2030 identified energy which includes petroleum products as one of the infrastructure enablers of its social economic pillar.[14] For this critical sector to be fully exploited, the legal and policy framework should provide guidelines and obligations for the government to provide efficient frameworks for the security

[13] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya, 2016, at P 112.
[14] Ministry of Energy and Petroleum, Draft National Energy and Petroleum Policy, June 16, 2015, p. 9.

and safety in the petroleum industry. The government charges taxes from petroleum exploration activities which can be used in covering security costs, recruitment and training costs.

1.3 Hypothesis

This research proceeds on the basis of the following two hypotheses:

(a) Whereas there exists comprehensive legal and institutional framework for promoting safety and security, there are significant shortcomings in their implementation in the oil producing areas.

(b) The local communities in the oil producing areas should participate in the security arrangements.

1.4 Justification of Study

The major justification for this study is that there is very little discussion that exists on the gaps within critical aspects of safety and security of socio-economic, political, environmental and human elements of the petroleum industry and how the state is prepared to adequately respond and efficiently manage these likely occurrences.[15] There is inexistent effective avenues for public participation, respect for communal values, provision of schemes for compensation of host and impacted communities, and legalization of the outcome of dialogue processes. Besides, the safety and security of the workers in various oil rigs has been at stake due to violent attacks on investor sites by the people of Turkana.[16]

[15]Seth Oppong, "Common health, safety and environmental concerns in upstream oil and gas sector: Implications for HSE management in Ghana." *Academicus International Scientific Journal* 09 (2014): 93-106. p. 93.
[16] Johannes, Eliza M, Leo C Zulu and Ezekiel Kalipeni, "Oil Discovery in Turkana County, Kenya: A Source of Conflict or Development?" (2015) African Geographical Review.

The policy that requires the government to provide security for petroleum installations has not yet been enacted.[17] This is the framework that requires the government to institute appropriate and innovative ways to enhance surveillance and security of energy and petroleum infrastructure.[18] Besides, this draft policy mandates the government shall classify strategic energy installations such as oil and gas fields, coal mines, refineries, jetties, pipeline systems, petroleum, storage facilities as protected areas and provide security during construction and operation.[19] Since this policy framework has not yet been enacted nor implemented, this paper resorts to highlight the challenges of these legal and policy gaps in the security and safety of the petroleum sector.

1.5 Statement of Objectives

1.5.1 General Objective

The major objective of this paper is to analyse the legal regime and gaps that exist in the Kenyan legal regimeconcerning safety and security in the petroleum sector.

1.5.2 Specific Objectives

The specific objectives of this paper will be:

a) To study the legal and policy framework on safety and security in the petroleum sector in Kenya

b) To find out the gaps that exist in the legal and policy framework on safety and security in the petroleum sector in Kenya

c) To analyse the international best practice on safety and security in the petroleum sector

[17] Ministry of Energy and Petroleum, Draft National Energy and Petroleum Policy, June 16, 2015, p. 32.
[18] Ministry of Energy and Petroleum, Draft National Energy and Petroleum Policy, June 16, 2015, p. 89.
[19] Ministry of Energy and Petroleum, Draft National Energy and Petroleum Policy, June 16, 2015, p. 41.

1.6 Research Questions

The following will be the major research questions of this paper:

a) What is the legal and policy framework on safety in the petroleum sector in Kenya?

b) What is the legal and policy framework on security in the petroleum sector in Kenya?

c) What are the gaps in the legal and policy framework on safety and security in the petroleum sector in Kenya?

d) What is the international best practice on safety and security in the petroleum sector?

1.7 Theoretical Framework

This paper invokes principles entrenched by the legal positivism theory in analysing various codified international, statutory and constitutional legal provisions of security and safety in the petroleum sector.[20]

This paper will fundamentally rely on the participatory development theory as a globally acceptable theory in natural resources management. This theory derives from the idea that the answer to development is "not [found in] the bureaucracy and its centrally mandated development projects and programs, but rather [in] the community itself: its needs, its capacities, and ultimately its own control over both its resources and its destiny.[21] According to the World Bank, 'participatory development' is '*a process through which stakeholders can influenceand share control over development initiatives, and over the decisions andresources that affect themselves'*. In essence, dynamics of development planning are changing, largely due to the increasingparticipation and importance of stakeholder groups such as Local Government Units

[20]Michael D. A. Freeman, *Lloyd's Introduction to Jurisprudence*, (Sweet & Maxwell 8th edn, 2008) 216.
[21] David C. Korten (ed), *Community Management: Asian experience and perspectives* (West Hartford, Conn.: Kumarian Press, 1986) 480.

(LGUs), NGOs and the private sector, and development partners.[22] In oil production, this paper argues that sustainable participation of the local communities and other stakeholders is key in ensuring the safety and security concerns are well addressed. The local communities in the oil producing areas should be involved in the security and safety arrangements and their input to the process meaningfully incorporated.

Secondly, this paper will apply the social justice theory in explaining the need for the implementation of safety and security measures for the communities affected by oil production in Turkana, Kenya. Social justice concerns itself with equality being at the core of distributions of resources. With roots in Aristotelian accounts of justice, social justice is a subset of distributive justice. Under distributive justice, the benefits and burdens to be distributed in society should be proportionate to the recipient's merit or share in the thing to be distributed.[23]In terms of oil production, the people in Turkana who are directly affected by the exploitation of the resource should ideally get the largest share of the revenuefrom the proceeds of the oil production due to the disproportionate burden they bear from the exploitation of the resource compared to other parts of Kenya. The revenue will also compensate them in case of the emergence of environmental hazards, health and safety risks and related concerns. It would thus be an injustice if the Turkana people are left to assume a disproportionate level of burdens that arise from safety and security in the exploitation of petroleum without the corresponding compensation to offset such burdens.[24]

[22] Richard S. Ondrik, Asian Development Bank, 'Participatory Approaches To National Development Planning' (1999) at <http://siteresources.worldbank.org/INTEASTASIAPACIFIC/Resources/226262-1143156545724/Brief_ADB.pdf> accessed on 18/4/2019.
[23] Ernest J. Weinrib, 'Corrective Justice' (1991-1992) 77 Iowa Law Review, 408.
[24] See: Tom Campbell, *Justice* (Humanities Press International, Inc., London, 1988)12.

1.8 Research Methodology

This paper will adopt qualitative research methodology which entails comprehensive review of the internet and other library materials. The internet materials will be useful in providing the latest commentaries on the gaps within critical aspects of safety and security of socio-economic, political, environmental and human elements in the petroleum sector in Kenya. The library research on the other hand will be useful in providing information from relevant textbooks and other relevant scholarly works in support of the substantive chapters of this paper.

1.9 Literature Review

Due to the latest developments in the Kenyan energy sector in the form of new legislation, this paper will extensively review and assess the adequacy of the framework to the problems identified herein. Therefore, the literature in this context will include a review of legislation and similar works done in this area. However, it must be noted from the onset that with regards to safety and security in the upstream Kenyan petroleum sector, not much has been published. The paper will thus place heavy reliance on the Kenyan legal and policy framework and support the discussion with scholarly materials from other jurisdictions.

Ramil Gasimov in his work, "Challenges to the legal framework governing liability and compensation for oil pollution in the Caspian Sea: the case of the Republic of Azerbaijan"[25], discusses the available maritime law enforcement measures for oil pollution damages in Azerbaijan, with a particular focus on ship-related, offshore, land-based, and transboundary pollution in order to identify the challenges for the national civil liability and compensation regime. In the identified cases of pollution and safety lapses in the area of study, Gasimov

[25] Ramil Gasimov, "Challenges to the legal framework governing liability and compensation for oil pollution in the Caspian Sea: the case of the Republic of Azerbaijan" (2018) World Maritime University Dissertations, 665.

assesses the effectiveness of applicable statutory liability regimes including criminal liability in redressing some of the challenges caused by oil exploitation.

This work is relevant to Kenya as although Azerbaijan is one of the oldest oil-producing countries, it still faces problems of liability and compensationarising from oil pollution incidents under the available instruments, local and international. This work will therefore inform the current paper and enable the development of the discussion around key areas of concern in the Kenyan upstream petroleum sector.

In "Legal and Institutional Framework for Multi-Stakeholder Participation in Oil and Gas Management in Nigeria: Perspectives on the Multi-Stakeholder Dialogue Approach",[26] author Olufunmilola Ayotunde explores the potential and practicality of incorporating multi-stakeholder participation into the legal and institutional frameworks for managing Nigeria's oil and gas. He identifies some of the challenges in upstream oil production as incessant conflicts, environmental degradation, social, economic and infrastructural underdevelopment and military injustice and advocates for the promotion and enforcement of the right to public participation of the Niger Delta peoples through the incorporation of the United Nations promoted Multi-Stakeholder Dialogue Approach (MSDA).

Ayotunde's work singles out ineffective implementation of existing oil and gas laws, imprudent management of relevant government agencies and failure to acknowledge and promote the participatory right of communities as factors besetting the development of the host and impacted communities, much like the situation is likely to unfold in Turkana, Kenya. This study, though

[26] Olufunmilola Ayotunde, 'Legal and Institutional Framework for Multi-Stakeholder Participation in Oil and Gas Management in Nigeria: Perspectives on the Multi-Stakeholder Dialogue Approach' (LL.M Thesis, University of Saskatchewan Saskatoon, 2016).

Nigerian, provides a relevant benchmark for the management of petroleum resources ad addressing safety and security concerns that arise in the exploitation of the resource.

1.10 Limitations

This research will only be limited into the critical analysis of the gaps that exist in the legal regime on safety and security in the petroleum sector in Kenya. It will not delve into empirical study and comprehensively analyse the historical foundations of on safety and security in the petroleum sector in Kenya.

1.11 Chapter Breakdown

This paper will entail five chapters namely:

1.11.1 Chapter One: Introduction

This Chapter entails the research background, study problem and its justification,objectives of the study and research questions, theoretical framework, literature review and the chapter breakdown.

1.11.2 Chapter Two:International Case Studies

This chapter entails a comparative analysis of the international best practices on safety and security in the petroleum sector in Nigeria, the United States of America and Russia and comparing the conditions to those present and applicable in Kenya

1.11.3 Chapter Three: The Legal and Institutional Framework on the Environment andSafety in the Petroleum Sector in Kenya

This chapter will focus on the constitutional, statutory and institutional arrangementson the environment and safety in the petroleum sector in Kenya.

1.11.4 Chapter Four: The Legal and Institutional Framework on Security in the PetroleumSector in Kenya

This Chapter will discussthe relevant statutory provisions and institutionalarrangements on security in the petroleum sector in Kenya.

1.11.5 Chapter Five: Conclusion and Recommendations

This chapter will encompass the conclusion elaborating whether the research topic has been proved or disproved, and the proposals that if fully implemented will enhance the safety and security in the petroleum sector in Kenya respectively.

CHAPTER TWO
INTERNATIONAL CASE STUDIES ON SAFETY AND SECURITY IN THE PETROLEUM SECTOR

2.0 Introduction

This Chapter explores international best practice adapted by different jurisdictions to ensure safety and security in the petroleum sector. Particularly the Chapter will look at the policy and legislative framework and institutional mechanisms in Nigeria, Russia andthe United States of America. The choice of the three countries is not coincidental but seeks to compare oil safety and security standards from diverse legal regimes and developmental settings.

2.1 Nigeria

Being the largest oil producer in the African continent, it is only prudent to benchmark with Nigeria. Nigeria being in the same region as Kenya is bound to face the same safety and security issues as those that Kenya would face. As such, it is imperative to analyse their laws on safety and security alongside those of Kenya.

In Nigeria, the greatest challenges to the safety and security of the petroleum industry are faced through the transportation of the oil. Nigeria's most common means of transporting petroleum is through oil pipelines. Nigeria has a total pipeline grid of 5001 kilometres. This consists of 4315 kilometres of multiproduct pipelines and 666 kilometres of crude oil pipelines. 11 of these pipelines cut across the country, forming a network that links the 22 petroleum storage depots[27]. These pipelines face a lot of challenges.

[27]Amalachukwu Okafor & Ayobami Olaniyan Afe, "Legal and Institutional Framework for Promoting Oil Pipeline Security in Nigeria," (2017) 8 J. Of Sust. Dev. Law & Policy,2, 209-224.

The safety and security in the petroleum industry is exposed to risks which mainly range from theft, illegal bunkering, and pipeline vandalism among others. I will discuss these risks in brief as environment and safety risks on the one hand, and security risks on the other:

a) Security risks faced in the oil sector in Nigeria

1. **Pipeline damages and sabotage**

Deliberate sabotage and the damage of pipelines by residents of the communities where the pipelines pass are risks that the safety and security of oil faces. There is established law to deal with sabotage of oil pipelines. Section 2 of the Petroleum Production and Distribution (Anti-Sabotage) Act Cap. P12 LFN 2004 provides that, "if a person is convicted, he is to be sentenced either to death or to a maximum term of 21 years imprisonment.[28]" Sabotage by the ethnic communities in the oil exploration areas has been seen to frustrate the activities of foreign companies engaged in oil exploration. For instance, Shell Petroleum Development Company of Nigeria (SPDC) and Nigerian Agip Oil Company (NAOC) – two joint ventures with Nigeria National Petroleum Corporation (NNPC) are the most exposed operationally.

SPDC, which has fields in Rivers, Delta, Bayelsa and Imo States, is the biggest onshore producer. It has the most pipelines and wellheads and tends to lose the most oil in absolute terms. But NAOC is the hardest hit overall, especially its swamp operations in the Brass-Akassa axis of Bayelsa State. It struggles to guard itself against Niger Delta criminal interests, given its small size and weak political cover. All the same, some of these corporations have been accused of disregarding the environmental impacts that their activities cause. For instance, some civil society groups question Shell's sincerity on oil theft. The company has been singled out by

[28]Onuoha, F.C., "Oil pipeline sabotage in Nigeria: Dimensions, actors and implications for national security" (2008) African Security Studies, 17(3), pp.99-115.

environmental activists and faces potentially massive liabilities for Niger Delta oil spills in foreign courts.[29]

2. **Vandalism of oil products**

Following the unemployment of many youths around the areas where the pipelines pass, they vandalize oil installations and siphon the oil into tanks by puncturing the pipelines or taking advantage of any risks and sell the same in the black market. According to the 2013 Annual Report of the Nigerian Extractive Industry Transparency Initiative (NEITI), Nigeria lost US$10.9 billion to oil theft between 2009 and 2011.[30] Oil theft has led to the destabilisation of oil exploration areas like the Niger Delta.[31] This instability could damage the investment opportunities in Nigeria.

3. **Illegal oil bunkering**

This is basically theft of petroleum done by tapping directly into pipelines away from company facilities and connecting the pipes to barges that are hidden in small creeks. It is said that over 10 per cent of the oil exported from Nigeria every year is actually illegally bunkered.[32]

4. **Oil terrorism**

This is the latest risk facing the safety and security of petroleum in Nigeria. It involves acts of blowing up of oil pipelines, installations and platforms with explosives; and the seizure of oil

[29] Theft risks lack of foreign investment in the country and industry file:///C:/Users/Admin/Documents/0913pr_nigeriaoil.pdf accessed on 15th July 2019.
[30] Amalachukwu Okafor & Ayobami Olaniyan Afe, "Legal and Institutional Framework for Promoting Oil Pipeline Security in Nigeria," (2017) 8 J. Of Sust. Dev. Law & Policy,2, 209-224.
[31] Theft risks lack of foreign investment in the country and industry file:///C:/Users/Admin/Documents/0913pr_nigeriaoil.pdf accessed on 16th July 2019.
[32] The Warri Crisis: Fuelling Violence V Illegal Oil bunkering https://www.hrw.org/reports/2003/nigeria1103/5.htm accessed on 27th May 2019.

barges, oil wells, flow stations, support vessels, and other oil facilities in order to prevent the exploitation and/or distribution of crude oil or its refined products. The first of such an incident happened in December 2005, when the Movement for the Emancipation of the Niger Delta (MEND) blew up Shell's Opobo Pipeline in Delta State. In September 2005, after the arrest of Alhaji Asari Dokubo, 45 militant groups in the Delta region instructed all multinational oil companies to leave the region, as they were preparing for a war with the Nigerian government.[33]

5. **Ethnic clashes**

Companies involved in petroleum activities in conflict prone areas suffer losses whenever such clashes occur. During such clashes, pipelines are destroyed, and oil theft increases to fund the clashes. In addition, clashes will most definitely interfere with the normal production activities. A case at hand is the ethnic clashes which occurred in March 2003 around Warri. This led to the shut-in of over 800,000 barrels per day (bpd) of crude production which included: 370,000 bpd by Shell, 440,000 bpd by Chevron and 7,500 bpd by TotalFinaElf. Production at the Warri refinery was reduced and Chevron also shut down production. Companies evacuated personnel from the affected areas and flights to and from the Niger Delta were suspended. Troops brought in to protect the oil installations and restore order inevitably became party to the conflict, and as a result, threats were made to blow up pipelines and flow stations. About 100 people were killed, including three workers from TotalFinaElf, and ten soldiers.[34]

b) Environment and safety risks faced in the oil sector in Nigeria

1. Pipeline ruptures leading to oil spills

[33]Onuoha, F.C., "Oil pipeline sabotage in Nigeria: Dimensions, actors and implications for national security" (2008) African Security Studies, 17(3), pp.99-115.
[34]https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/publication/wcms_161189.pdf accessed on 13th July 2019.

The oil pipeline infrastructure is very old and hence the pipes have become worn out and prone to corrosion. This eventually leads to leakages and rupturing of the pipes and hence leading to loss of a lot of oil.[35]The resultant incidents of pollution and exposure of locals to dangerous chemicals are also high.For example, in Bayelsa state in the Niger Delta, oil spills are a persistent feature of life. Oil has poisoned the land and water. The contamination of fish and crops has destroyed livelihoods, reduced the life expectancy of locals, decimated local employment opportunities and pushed many into militancy.[36]While efforts are made to clean up spills in countries like the US, Scotland or Norway, oil is left to flow unabated in Nigeria.[37]

2. Weak enforcement of the Legal Framework on Oil Pipeline Security

One of the greatest ills facing safety and security in Nigeria is lack of enforcement of the available laws. For instance, as mentioned earlier, sabotage has been outlawed by Section 1 of the Petroleum Products and Distribution (Anti-Sabotage) Act of 1975. Under this Act, the offence of sabotage is punishable by a death penalty or a term of imprisonment not exceeding 21 years.[38]

[35]Onuoha, F.C., Oil pipeline sabotage in Nigeria: Dimensions, actors and implications for national security (2008) African Security Studies, 17(3), pp.99-115.
[36] Dr John Sentamu, Baroness Amos, Prof Michael Watts, Njeri Kabeberi and James Thornton, 'Double standards on oil spills in Nigeria must end' *The Guardian*, Tue 26 Mar 2019 at <https://www.theguardian.com/environment/2019/mar/26/double-standards-on-oil-spills-in-nigeria-must-end> accessed on 1/11/2019.
[37] Ibid.
[38]Amalachukwu Okafor & Ayobami Olaniyan Afe, "Legal and Institutional Framework for Promoting Oil Pipeline Security In Nigeria," (2017) 8 J. Of Sust. Dev. Law & Policy,2, 209-224.

Another example is the recent incident in the Nembe Kingdom in Bayelsa state, Southern Nigeria, where a leaking oil pipeline exploded and resulted into a stampede that left more than 50 people missing.[39]No convictions were made after the incident.

2.1.1 Legal framework regulating safety and security in the petroleum industry in Nigeria

Nigeria has quite a number of laws that regulate safety and security in the petroleum industry. I will give a brief summary of the main laws that regulate the safety and security of the petroleum industry. These are:

a. The Mineral Oils (Safety) Regulations;
b. The Oil in Navigable Waters Act;
c. The Oil Pipelines Act;
d. Oil and Gas Pipeline Regulations
e. The Petroleum Refining Regulations;
f. The Environmental Impact Assessment Act
g. Harmful Waste (Special Criminal Provisions, etc.) Act
h. Petroleum Production and Distribution (Anti-Sabotage) Act

I will briefly discuss how each of these Acts regulates the safety and security in the Petroleum industry.

2.1.1.1 Constitution of the Federal Republic of Nigeria, 1999

The Constitution provides for the protection of the environment. This means that the Constitution recognises the importance of safeguarding the environment. Section 20 provides that, the State shall protect and improve the environment and safeguard the water, air and land, forest and

[39] Associated Press in Warri, 'GMT More than 50 missing after oil pipeline explosion in Nigeria' *The Guardian*, Sat 2 Mar 2019 at <https://www.theguardian.com/world/2019/mar/02/more-than-50-missing-after-oil-pipeline-explosion-in-nigeria> accessed on 1/11/2019.
17.20

wildlife of Nigeria[40]. This means that the state shall ensure that in every activity that is carried out, like petroleum exploration and distribution, the state shall protect the environment. In contrast, oil production parastatals are also seen to pollute the environment.[41]

2.1.1.2 Petroleum Production and Distribution (Anti-Sabotage) Act, 1975 [42]

This Act was specifically enacted to create the offence of sabotage. The Act in section 1 provides the acts that may amount to sabotage and these include:

(a) Doing anything, willfully, with the intent to obstruct or prevent the production or distribution of petroleum products in any part of Nigeria; or

(b) Doing anything, willfully, with the intent to obstruct or prevent the procurement of petroleum products for distribution in any part of Nigeria; or

(c) Doing anything, willfully, in respect of any vehicle or any public highway with intent to obstruct or prevent the use of that vehicle or that public highway for the distribution of petroleum products.

Similarly, any person who assists or incites another person in doing the above acts is also considered to be committing the offence of sabotage. The penalty for this offence is sentencing to death either to death or to imprisonment for a term of twenty-one years.

[40] Constitution of the Federal Republic of Nigeria, http://www.nigeria-law.org/ConstitutionOfTheFederalRepublicOfNigeria.htm accessed on 12th July 2019.
[41] Ambituuni, A., Amezaga, J. and Emeseh, E., "Analysis of safety and environmental regulations for downstream petroleum industry operations in Nigeria: Problems and prospects" (2014) Environmental Development, 9, pp.43-60.
[42] Petroleum Production and Distribution (anti-sabotage),1975.http://lawnigeria.com/LawsoftheFederation/PETROLEUM-PRODUCTION-AND-DISTRIBUTION-%28ANTI-SABOTAGE%29-ACT.html accessed on 25th May 2019.

The Nigerian government has gone ahead to criminalize sabotage and even provided a stringent punishment for the same. However, as earlier mentioned, Nigeria has not been able to meet the required standard of safety and security mainly due to laxity in enforcement of the existing laws.

2.1.1.3 Oil Pipelines Act, 2004(as amended)

This Act regulates the provision of licences for the operation and maintenance of oil pipelines. The Act provides that before one is granted a license to operate an oil pipeline, the land has to be surveyed so as to establish whether operations to be carried out pursuant to such license will cause any damage to the property. Before granting such a license, the Minister is mandated to publish a notice to notify the public that such a license will be granted to the applicant. During the period that the notice is published, any persons who feel that granting of the licence may lead to damage/injury to their interest or right to land is afforded an opportunity to object to the granting of such license[43].

Similarly, the holder of such a license is required to compensate any persons whose rights are affected by the operation of the licence[44]. Further, the Act has provided for limitations as to the construction of such oil pipelines. The Act provides that the holder of a license shall not construct any works upon any land which is within fifty yards of any public road, dam, reservoir, or building belonging to or occupied by the Federal or a state government or local government, or upon any land appropriated for any railway or situate within one hundred metres of any railway[45].

This Act mainly regulates the operation of oil pipelines by providing for grant of licences and by providing how license holders should use their licenses. The Act regulates safety and security of

[43]Oil Pipelines Act, 2004, Section 9.
[44]Oil Pipelines Act, 2004, Section 11(5)(a).
[45]Oil Pipelines Act, 2004Section 14.

the oil pipelines by ensuring that the license holders' operations do not cause any damage to the environment and if they do, they should compensate such parties.

The Act has enabled various stakeholders to take part in environmental safety in oil pipeline activities. It gives the Minister the mandate to grant the licenses, affords the community an opportunity to object to grant of a license that may adversely affect them. The Act calls upon corporations in the oil pipelines activities to take care of the environment in their operations. Likewise, the court has been given the duty order for compensation to communities adversely affected by oil pipeline activities.

2.1.1.4 Oil and Gas Pipeline Regulations

These regulations provide for the oil and gas pipelines operations in a more specific way. The regulations have taken great consideration of the environmental impact of the operations. To regulate safety, the regulations provide for steps to be taken by the operators in construction of pipelines, the types of materials to be used and further, the regulations provide for testing of pipelines before use.

Basically, the regulations establish minimum standards that operators have to meet in the construction and maintenance of oil pipelines in a bid to ensure safety.

For instance, Regulation 6 provides that the licensee shall, on completion of the construction of the pipeline, give the Department not less than seven days' notice of its intention to commence inspection and testingof the pipeline. Regulation 8 stipulates limits that the initial test results should not exceed. It provides that where the test pressure results in a hoop stress are greater than 75 per cent of the specified minimum yield strength of the pipeline based on its nominal wall thickness; or the pipeline crosses or passes within 100 metres of a watercourse, the operator shall

assure the Department that adequate contingency plans have been made for protecting the environment.

2.1.1.5 Oil in Navigable Waters Act, 2004

In a bid to promote safety and security in the petroleum industry, Nigeria has ratified the International Convention for the Prevention of Pollution of the sea by oil. The Oil in Navigable Waters Act was enacted to implement the terms of the International Convention for the Prevention of Pollution of the sea by oil 1954 to 1962 and to make provisions for such prevention in the navigable areas.

The Act prohibits the discharge of oil into the sea by a ship and stipulates that in such a case, the master or owner of such a ship shall be guilty of an offence[46]. Such offences are punishable by the High court with a penalty of 2,000 Nairas. Masters or owners of such vessels are also given an opportunity to inform the harbour master where such oil is discharged as a safety measure to save the vessel or to prevent damage to the vessel.[47]This Act shows that Nigeria aims to protect the water bodies by passing laws that protect the sea from water pollution and hence protecting the sea creatures.

2.1.1.6 Petroleum Act, 2004(as amended)

This Act majorly regulates on the issuance of licences to persons in the business of exploration of petroleum. Issuance of licenses is also a safety and security measure since the federal government is able to regulate the people in the business and hence ensuring that they carry out the activities by following the due procedures.

[46]Section 1 of Oil in Waters Act.
[47]Section 10 of Oil in Waters Act.

This Act provides for three types of licences namely: Oil exploration licences, oil prospecting licences and oil mining leases. The same will be discussed later.

The Act is very deliberate in relation to environmental precautionary measures. For instance, section 3(1) provides that no refinery shall be operated without a license. This enables the government to regulate the industry and hence control environment impact. Section 13 creates the offence of operating a refinery with such license.

The Minister in section 8 of the Act is empowered with several powers and duties in this Act which gives him/her the mandate to oversee safety in the petroleum industry. Some of the powers granted to the Minister include: general supervision over all operations carried on under licences and leases granted under this Act, have access to all refineries granted the licenses in order to inspect whether the refineries are compliant with the existing laws and regulations and arrest without warrant any person whom he finds committing, or whom he reasonably suspects of having committed, any offence under this Act among others[48].

2.1.1.7 Environmental Impact Assessment Act (2004)

This is the main Act that regulates the Environmental Impact Assessment (EIA). It provides for the procedures and methods. The Act provides that where a proposed project is likely to significantly affect the environment, the operators shall conduct an EIA[49]. The Act also provides for public participation by allowing the public to make comment on the EIA of the activity. There is a period given within which interested parties should submit their comments[50]. After considering all the comments, the Nigerian Environmental Protection Agency shall inform the applying party on their decision on whether to allow them to proceed with the operations or not.

[48] Pipeline Act 2004 (as amended) https://lawsofnigeria.placng.org/laws/P10. accessed on 12th July 2019.
[49] Section 2 of the EIA Act.
[50] Section 3 of the EIA Act.

Such decision shall be given in writing and should state the reasons thereof. The Agency's mandate does not stop there; the agency is tasked with supervision of the activity to ensure that throughout its operations it is compliant with the laws[51].

This is one of the Acts that was specifically enacted to ensure safety in the petroleum industry and it adequately regulates the various activities carried out.

2.1.1.8 Harmful Waste (Special Criminal Provisions) Act ,2004

The mandate of this Act is to prohibit the carrying, depositing and dumping of harmful waste on any land or territorial waters. The Act provide makes it a criminal offence to carry, deposit or dump harmful waste to the land or territorial waters. The *actus reus* for this crime are as follows:

a) Carrying deposits, dumps or causes to be carried, deposited or dumped, or being in possession for the purpose of carrying, depositing or dumping, any harmful waste on any land or in any territorial waters or contiguous zone or Exclusive Economic Zone of Nigeria or its inland waterways;
b) Transporting or causes to be transported or is in possession for the purpose of transporting any harmful waste;
c) Imports or causes to be imported or negotiates for the purpose of importing harmful waste;
d) Sells, offers for sale, buys or otherwise deals in any harmful waste[52].

Further, the Act states that offenders are those who actually do the act or those who omit, aid or procure the commission of the crime. The Act also provides for accessories after the fact.

[51] Section 10 of the EIA Act.

[52]Section 1 of theHarmful Waste (Special Criminal Provisions) Act, 2004

The penalty for this crime on individuals is sentencing to imprisonment for life. In addition any carrier, including aircraft, vehicle, container and any other thing whatsoever used in the transportation or importation of the harmful waste; and any land on which the harmful waste was deposited or dumped, shall be forfeited to and vest in the Federal Government without any further assurance other than this Act.

The penalties for individuals is draconic however, the Act places no great responsibilities on corporate as the Act provides that any official who is found to have acted in connivance or consent to the company's involvement in such a crime, shall 'be liable to be proceeded against and punished accordingly.' This is a very vague punishment provided for in an Act that is enacted to assist in environmental protection. The Act establishes a very low standard for corporate as there is no given punishment for the same.

2.1.2 Institutional framework regulating safety and security in the petroleum industry in Nigeria

2.1.2.1 Department of Petroleum Resources (DPR)

In 1985, the DPR took over the functions of the then Nigerian National Petroleum Corporation. It is the regulator in the Oil and Gas Sector in Nigeria. It has the statutory responsibility of ensuring compliance to petroleum laws, regulations and guidelines in the Oil and Gas Industry. It achieves this by monitoring operations at drilling sites, producing wells, production platforms and flow stations, crude oil export terminals and refineries among many others.[53]

2.1.2.2 National Oil Spill Detection and Response Agency (NOSDRA)

NOSDRA was established in 2006 by the National Assembly of the Federal Republic of Nigeria Act of 2006 with the responsibility for preparedness, detection, and response to oil spillages in

[53] Website of the Department of Petroleum Resources https://www.dpr.gov.ng/#.

Nigeria.[54] NOSDRA) was established to co-ordinate the implementation of the National Oil Spill Contingency Plan (NOSCP) for Nigeria in accordance with the International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC 90) to which Nigeria is a signatory.

2.1.2.3 Nigerian National Petroleum Corporation (NNPC)

It is established by the Nigerian National Petroleum Corporation Act to engage in all commercialactivities relating to the petroleum industry and to enforce all regulatory measures relating to the general control of the petroleum sector through its Petroleum Inspectorate department. In relation to petroleum safety, the corporation has a department known as the Petroleum Inspectorate tasked with the mandate to issue permits and licences for all activities connected with petroleum exploration and exploitation and the refining,storage, marketing, transportation anddistribution.[55]

2.1.2.4 Federal Environmental Protection Agency (FEPA)

This body is established through the Federal Environmental Protection Agency Act. The agency is mandated to prepare a comprehensive national policy for the protection of the environment and conservation of natural resources and promote co-operation in environmental science and conservation technology with similar bodies among others[56].

As seen from the above laws, Nigeria is more advanced when it comes to the regulation of the safety and security of the petroleum industry compared to Kenya. Nigeria has gone ahead to criminalise most of those activities that pose danger and risk to the safety and security in the petroleum industry. That notwithstanding, Nigeria is also struggling with the enforcement of

[54] See https://nosdra.gov.ng/.
[55]Policy and Legal Advocacy Centre https://lawsofnigeria.placng.org/view2.php?sn=380 accessed on 11th July 2019.
[56] Policy and Legal Advocacy Centre https://lawsofnigeria.placng.org/laws/F10.pdf

these laws as it the country is losing a lot of wealth due to inefficient enforcement of safety and security laws.

The Nigerian regulatory framework provides that one has to obtain permits and licenses before venturing into any upstream or downstream activities in the petroleum industry. Some of these approvals and permits are in a bid to ensure environmental safety. These approvals include:

a. The Environmental Impact Assessment (EIA): This is a mandatory prerequisite for operations in the upstream sector of the petroleum industry[57]. Any entities carrying out petroleum related projects must prepare the EIA reports to show the impact of the project to the environment and any steps they will take to mitigate such impact.

b. Licences and permits: for any oil related projects, operators are required to obtain the relevant licences. Some of the licenses obtained include:

   i. The oil exploration licence (OEL) - This is a non-exclusive licence that permits a licensee to explore for petroleum in the licence area[58]. This license is granted for one year and is renewable upon satisfying certain conditions.

   ii. The oil prospecting licence (OPL)- This is a license that grants the licensee the exclusive right to explore and prospect for petroleum. It also allows the licensee to carry away and dispose of petroleum won during prospecting operations subject to fulfilment of obligations imposed under the Act. The duration of this license is determined by the Minister however, for onshore

[57] Israel Aye, Laura Alakija and Ogbongbemi Aminu, "The oil and gas law review 6th Edition (2018) https://thelawreviews.co.uk/edition/the-oil-and-gas-law-review-edition-6/1176219/nigeria accessed on 16th July 2019.
[58] Ibid.

areas and shallow waters, the duration is five years inclusive of any period of renewal. An OPL for Deep Offshore and Inland Basins lasts for 10 years[59].

iii. The oil mining lease (OML) - This lease confers on the holder the exclusive right to search for, win, work, carry away and dispose of petroleum within the specified acreage[60]. The lease is granted only to the holder of an OPL upon satisfaction of all conditions of the licence or the Act and having discovered oil in commercial quantity (currently defined as a flow rate of 10,000bpd). It lasts for a period of 20 years and may be renewed subject to the fulfilment of prescribed conditions.

c. The Minister's approval: This approval is required for certain activities like decommissioning projects and gas flaring.[61]

2.2 Russia

Russia is one of the world's leading producers and exporters of both oil and gas. Russia's oil reserves total approximately 109.5 billion barrels, which equates to nearly 6.4% of the total global reserves[62]. Being a lead country in the industry, it is only prudent to benchmark with Russia's best practices on safety and security in the petroleum industry.

Russia produces far more oil and gas than is consumed domestically and therefore has substantial volumes to export. Generally, Russia exports nearly three quarters of the oil it produces. For instance, in 2016, around 8.1 million barrels of oil and oil products were shipped abroad daily (5.1 million of this was crude oil, 3 million was refined products). In 2017, this amount increased

[59] Israel Aye, Laura Alakija and Ogbongbemi Aminu, "The oil and gas law review 6th Edition (2018) https://thelawreviews.co.uk/edition/the-oil-and-gas-law-review-edition-6/1176219/nigeria accessed on 16th July 2019.
[60] Ibid.
[61] Ibid.
[62] Josefson, Jennifer, Alexandra Rotar, and Brandon Rice, "Oil and gas regulation in the Russian Federation: overview" June 1 (2014) Thomson Reuters Practical Law.

by 8.1%.[63] While more than 85% of all crude exports are pumped through state-monopoly Transnet's pipelines, the share of seaborne shipments among exports remains strong in spite of a global reduction.[64]

Due to its large exportation of oil through the sea and its Arctic oil exploration, Russia's safety and security concerns largely relate to safety in the sea. Russia's regulation of safety and security in the petroleum industry is mainly stipulated in its Oil and gas laws, internationaltreaties that it has ratified as well as bilateral agreements that it has signed with neighboring countries.

Under the Constitution, environmental protection falls within the joint competence of the Russian Federation and its constituent entities. Russian environmental legislation is enacted at both federal and regional levels.[65]

Oil exploration at the Arctic poses its own fair share of challenges when it comes to safety and security. Oil exploration in Russia has also witnessed some accidents like oil spills posing a great risk to the eco systems at the Arctic. Such accidents result to both the direct economic costs and damage to company reputation of the company that caused spillage.[66] Damage to reputation is likely to be high in the Arctic since oil spills there will attract greater attention than elsewhere. Furthermore, due to the climatic conditions at the Arctic, spillage causes greater alarms since a clean-up at the Arctic is difficult. During the winter months, the Arctic seas are covered with ice

[63]Ibid.
[64]Offshore Oil and Gas Governance in the Arctic A Leadership Role for the U.S Charles Ebinger John P. Banks Alisa Schackmann March 2014https://www.brookings.edu/wp-content/uploads/2016/02/Offshore-Oil-and-Gas-Governance-web.pdf
[65]Ibid.
[66]www.ilo.org, Occupational safety and health and skills in the oil and gas industry operating in polar and subarctic climate zones of the northern hemisphere https://www.ilo.org/sector/Resources/publications/WCMS_438074/lang--en/index.htm accessed on 20th May 2019.

and are not navigable by oil-spill response ships. Therefore, if a spill started in the winter, the oil could continue to gush into the sea for long without any response.[67]

Indigenous people of the Arctic could be adversely affected by the socioeconomic and cultural consequences of accidents. Further, employees of the oil exploration companies in Russia's Arctic face a lot of challenges due to the extreme cold.[68]

The International Labour Organisation's Constitution sets forth the principle that workers should be protected from sickness, disease and injury arising from their employment. Its instruments on occupational Safety and Health promote tripartite collective efforts by governments, employers and workers to build, implement and continuously strengthen a preventative safety and health culture.[69] Tripartism is a key component for effective OSH regimes in the oil and gas industry.

Through its administrative functions, the International Labour Organisation has developed best practices to regulate the safety of employees of oil exploration companies. Russia, being a member of the International Labour Organisation is regulated by these practices. Pursuant to a Tripartite Sectoral Meeting held in Geneva in 2016, members discussed the Report onOccupational Safety and Health and Skills in the Oil and Gas Industry Operating in Polar and Subarctic Climate Zones of the Northern Hemisphere (Geneva, 26–29 January 2016).[70]

This report covers a lot of issues affecting Russia's Arctic oil exploration. Some of the safety and security issues relating to workers in the oil and gas industry that were identified by the report are health concerns and lack of technical capacity to deal with any safety emergencies.

[67] www.ilo.org, Occupational safety and health and skills in the oil and gas industry operating in polar and subarctic climate zones of the northern hemisphere https://www.ilo.org/sector/Resources/publications/WCMS_438074/lang--en/index.htm accessed on 20th May 2019.
[68] Ibid.
[69] Ibid.
[70] Ibid.

Cardiovascular diseases are currently among the most common health concerns for oil and gas workers in arctic areas. A study of workers' health in the oil and gas industry in Siberia (Russian Federation) found that oil and gas production workers experience higher levels of stress than office workers.[71] Extreme cold weather is a dangerous situation that can trigger health emergencies in susceptible people. Further, the report stated that accidents are often attributed to a lack of workers skills.[72]Workers need to be equipped with occupational safety and health skills so that in case of an emergency they do not have to wait on assistance. Rather, they can act promptly and salvage the situation.

The main federal laws regulating environmental protection are Federal Law No. 7-FZ on Environmental Protection, dated 10 January 2001 (Environmental Protection Law) and Federal Law No. 174-FZ on Environmental Expert Review, dated 23 November 1995 (Environmental Expert Review Law).[73]

Both of these laws require an Environment Impact Assessment (EIA) to be carried out prior to the implementation of a project that may have an impact on the environment (such as oil and gas production projects). This is one of the ways that Russia regulates safety in its oil exploration industry. Such an assessment ensures that permits for oil exploration are not granted in areas that would be more susceptible to damage or that would cause adverse effects. The EIA must be

[71] www.ilo.org, Occupational safety and health and skills in the oil and gas industry operating in polar and subarctic climate zones of the northern hemisphere https://www.ilo.org/sector/Resources/publications/WCMS_438074/lang--en/index.htm accessed on 20th May 2019.

[72] www.ilo.org, Occupational safety and health and skills in the oil and gas industry operating in polar and subarctic climate zones of the northern hemisphere https://www.ilo.org/sector/Resources/publications/WCMS_438074/lang--en/index.htm accessed on 20th May 2019.

[73] Russia Oil and Gas Regulation 2019 ICLG.COM www.iclg.com accessed on 20th May 2019.

completed by an independent expert. The expert's conclusions are subject to review and approval by the relevant state authorities[74].

The Federal Law No. 7-FZ on Environmental Protection dated 10 January 2001 includes a "pay-to-pollute" provision that requires companies to obtain permits and pay the respective tariffs for adverse environmental impact caused by their activities.[75] Pollution or emissions in excess of the amount permitted triggers higher payments. The regime is overseen by the Federal Environmental, Industrial and Nuclear Supervision Service (Rostekhnadzor).[76]This keeps the companies accountable of their oil exploration. It also enables the government to regulate private companies.

Russia also has laws in relation to disposal of waste since waste from oil exploration can cause great harm to the environment. The main regulations on the disposal of waste products include Federal law No. 89-FZ on Industrial and Consumer Waste dated 24 June 1998, Federal Law No. 7-FZ on Environmental Protection, dated 10 January 2001.[77] Under the regulations, the collection, transportation and/or disposal of waste requires a positive report from the federal state expert review with respect to project documentation for waste treatment facilities. Further, a waste management licence or the conclusion of a services agreement with a specialised company with a waste management licence is also required.[78]

The laws on waste have established limits on the amounts of waste disposal with respect to certain types of hazardous waste and the same is made known to companies depending on their level of operations.

[74] Russia Oil and Gas Regulation 2019 ICLG.COM www.iclg.com accessed on 20th May 2019.
[75]Oil and Gas Regulation 2019 ICLG.COM www.iclg.com accessed on 20th May 2019.
[76]Oil and Gas Regulation 2019 ICLG.COM www.iclg.com accessed on 20th May 2019.
[77]Oil and Gas Regulation 2019 ICLG.COM www.iclg.com accessed on 20th May 2019.
[78]Oil and Gas Regulation 2019 ICLG.COM www.iclg.com accessed on 20th May 2019.

Following a 2012 Government Decree (No. 1148), the penalties for excessive flaring (that is, over 5% of the produced associated petroleum gas (APG), have substantially increased. Between 2012 and 2014, the fee for harmful emissions was subject to a multiplier of 12.[79] At the start of 2014, however, the multiplier increased by 25. Such penalties are quite high and even punitive and this makes the regulatory regime efficient.[80]

As earlier mentioned, Russia has ratified international conventions and entered bilateral agreements to ensure protection of the water ecosystems that are prone to be affected by the oil exploration. For instance, Russia has ratified the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR 1992) (The OSPAR Convention).[81] It is the mechanism by which fifteen governments of the western coasts and catchments of Europe, together with the European Community, cooperate to protect the marine environment of the North-East Atlantic. Region I of OSPAR includes a portion of Arctic waters (of Greenland, Iceland, Norway, and Russia), and the Convention specifically mentions offshore hydrocarbon activities and offshore installations.[82]

The OSPAR Commission has made significant progress in addressing pollution within the region, but its 2010 Quality Status Report (QSR) calls for increased efforts to address oil pollution in the Arctic. The QSR specifically states the need "to consider the suitability of existing measures to manage oil and gas activities in Region I, and continue monitoring and assessment and improve the evidence base for evaluating the impact of the offshore industry on

[79]Oil and Gas Regulation 2019 ICLG.COM www.iclg.com accessed on 20th May 2019.
[80]Oil and Gas Regulation 2019 ICLG.COM www.iclg.com accessed on 20th May 2019.
[81]Offshore Oil and Gas Governance in the Arctic A Leadership Role for the U.S Charles Ebinger John P. Banks Alisa Schackmann March 2014https://www.brookings.edu/wp-content/uploads/2016/02/Offshore-Oil-and-Gas-Governance-web.pdf
[82]Offshore Oil and Gas Governance in the Arctic A Leadership Role for the U.S Charles Ebinger John P. Banks Alisa Schackmann March 2014https://www.brookings.edu/wpcontent/uploads/2016/02/Offshore-Oil-and-Gas-Governance-web.pdf

marine ecosystems.[83]" As a result, the Commission has taken major steps in this direction. It developed specific, thematic sub-strategies as part of OSPAR's 2010 North-East Atlantic Environment Strategy, including one for the offshore oil and gas industry. The goal of this strategy is, "to prevent and eliminate pollution and take the necessary measures to protect the OSPAR maritime area against the adverse effects of offshore activities.[84]"

Collaboration between Arctic countries in relation to environmental safety introduces a new sense of accountability between the members and hence ensuring efficient safety measures have been taken. Norway and Russia entered into a bilateral agreement in July 2011, called the maritime border agreement in the Barents Sea[85]. It has enabled Russia and Norway to explore the resource potential in the region. These agreements not only enable the countries to explore greater opportunities but also make them accountable in relation to safety.

Russia is evidently advanced when it comes to safety and security in the petroleum industry and Kenya can borrow a lot from this jurisdiction. The most important things to borrow would be labour practices specifically established for the oil and gas industry. Further, Kenya can explore bilateral agreements with neighbouring countries that are in the petroleum industry.

2.3 The United States of America

Oil contributes to more than 30% of total energy produces in the United States and is the second major sources of energy after natural gas. There are 33 oil and gas producing states in the United

[83] Offshore Oil and Gas Governance in the Arctic A Leadership Role for the US Charles Ebinger John P. Banks Alisa Schackmann March 2014https://www.brookings.edu/wp-content/uploads/2016/02/Offshore-Oil-and-Gas-Governance-web.pdf
[84]Ibid.
[85]Eurasia Group, 'Opportunities and challenges for artic oil and gas development by Eurasia Group Report' at <https://www.wilsoncenter.org/sites/default/files/Artic%20Report_F2.pdf> accessed on 1/11/2019.

States with the leading in production being Texas, North Dakota, California, Alaska and Oklahoma. Other States include New Mexico, Colorado, Wyoming and Louisiana.[86]

An analysis of Federal, States and local laws indicates that there exists adequate framework to ensure protection of cultural resources, workers' and the public's health and safety during exploration, development, production, separation, treatment, storage and transportation of Petroleum products.

A study conducted by the Ground Water Protection Council (GWPC) in 2009 established that State oil and gas regulations are adequately designed to directly protect water resources through the application of specific programmatic elements such as permitting, well construction, well plugging, and temporary abandonment requirements.[87]

Both the Federal government and the State Governments are involved in regulation of various aspects oil and gas operations depending on land ownership and whether federal regulations or state laws apply. While drilling and production is regulated by the states, the Federal government regulations safeguard water, air quality and worker safety, as well as exploration and production on Native American lands, federal lands, and the Outer Continental Shelf.[88]States also regulate all oil and gas operations in state waters that extend from the coast to 3 to 9 nautical miles from

[86]US Department of Energy, "Independent Statistics and Analysis, Energy Information Administration'' available at https://www.eia.gov/energyexplained/?page=us_energy_home, accessed on 15th July 2019.

[87] State Oil and Natural Gas Regulations Designed to Protect Water Resources, U.S. Department of Energy Office of Fossil Energy National Energy Technology Laboratory (2009), available at http://www.gwpc.org/sites/default/files/state_oil_and_gas_regulations_designed_to_protect_water_resources_0.pdf , accessed on 23rd May 2019.

[88]American Geological Institute, U.S. Regulation of Oil and Gas Operations, at https://www.americangeosciences.org/geoscience-currents/us-regulation-oil-and-gas-operations accessed on 23rd May 2019.

the shoreline, depending on the state. Local zoning may control some activities such as the minimum distance wells and other facilities must be set back from homes and businesses.[89]

Due to the many Federal and States laws and regulations involved in the petroleum sector in the United States, this study has limited itself only to the various Federal laws designed to protect water sources and to those that address prevention and response to oil spills. This is in view of two major oil spills in the history of the United States that had lasting repercussions on the environment thus encouraging the United States Government to make significant legal changes to not only prevent further oil spills but compensate the victims of oil spills.

Exxon ValdezOil Spill in 1989 spilled nearly 37,000 tons of crude oil into the Gulf of Alaska after the oil tanker Exxon Valdez crushed into a rocky reef. Clean up activities have not managed to completely restore the area to its normal state as there are still traces found on the shoreline to date. This is despite Exxon spending over 2.2 billion dollars in the clean-up and over.[90]

The most recent and the largest oil spill is the Deep-Water Horizon Oil Spill occurred in 2010 in the Gulf of Mexico releasing more than 100 million gallons of oil and killed 11 workers while 17 suffered severe injuries. The tourism industry was also affected as the spill spread to the beaches of Mississippi, Alabama and Florida leaving more than 10,000 people unemployed. This led to BP spending over 20 billion dollars in compensation.[91]

In response to the two oil spills the U.S. Government has made legal changes in laws and regulations which have largely contributed to a reduction of spill rates. For instance, between the

[89] https://www.americangeosciences.org/critical-issues/factsheet/pe/regulation-oil-gas-operations
[90] Eric P. Exxon Valdez, 'Oil Spill: Causes, Effects and Clean up', available at https://study.com/academy/lesson/exxon-valdez-oil-spill-causes-effects-clean-up.html, accessed on 15th July 2019.
[91] Richard Pallardy, 'Deepwater Horizon Oil Spill Environmental Disaster Gulf of Mexico' available at https://www.britannica.com/event/Deepwater-Horizon-oil-spill/Cleanup-efforts, accessed on 15th July 2019.

year 1995 to 2001 Oil spills from Spills from U.S. land-based sources (pipelines, storage facilities, fixed industrial facilities, air transport facilities, railways, and motor vehicles) decreased by 56%.[92]

2.3.1. Institutional Framework for Oil Safety and Security in the US

There are several federal agencies mandated with implementation of oil spill regulations in the US. These include the Environmental Protection Agency (EPA), U.S. Coast Guard, the Department of Transportation and the Pipeline and Hazardous Materials Safety Administration (PHMSA). The Environmental Protection Agency (EPA)is the main Federal authority mandated with monitoring, standard-setting and enforcement activities to ensure environmental protection in the United States. EPA is established under the Clean Air Act of 1963 as amended in 1990,[93] the Clean Water Act of 1972 as amended in 1987,[94] and Oil Pollution Act of 1990.[95]

EPA oversees onshore facilities while the Coast Guard is the lead response agency for spills in coastal waters and deep-water ports. The Department of Transportation (DOT) oversees pipelines and rail transportation. On the other hand, PHMSA is tasked with programmatic inspections of facilities and construction projects, investigations of safety incidents.

The involvement of various agencies in oil spills prevention and response ensures specialization at the same time avoiding duplication of roles resulting in efficient regulation.

To avoid conflicting of roles, these agencies have entered into a Memorandum of Understanding that sets out the responsibilities of each agency. This is one lesson that Kenya can learn from the

[92] Dagmar Schmidt Etkin (2001), Analysis of Oil Spill Trends in the United States and Worldwide, presented at the 2001 International Conference on Oil Spills.
[93] Title 42 of the United States Code of Federal Regulations.
[94] Title 40 of the United States Code of Federal Regulations.
[95] Section 1401 of the Safe Drinking Water Act, Chapter 373 of the 78th Congress.

United States where the Energy and Petroleum Regulation Commission established under the Energy Act, 2019 and the Petroleum Act, 2019 can sign a Memorandum of Understanding with other authorities such as National Environmental Management Authority (NEMA), Kenya Pipeline Authority and the Ministry of Transport that will acknowledge and affirm the value of existing partnership efforts in regulation of safety and security in the petroleum sector.

2.3.2. **Prevention of Oil Spills in the United States**

2.3.2.1. **Oil Pollution Act of 1990**

This Act was enacted in response to the Exxon Valdez oil spill that occurred on 24th March 1989 in the scenic Prince William Sound, an area treasured for its scenic beauty and its wildlife, including sea otters, orcas, and many species of sea birds.[96]

It was the first comprehensive law to specifically address oil pollution to waterways and coastlines of the United States by clarifying the authority of the Federal Government, creation of new oil spills prevention and preparedness requirements, limitation on liability for damages resulting from oil spills and the establishment of a fund for clean-up costs.

The Act consolidated the liability and compensation requirement of certain prior federal oil pollution laws and their supporting funds including the Federal Water Pollution Control Act (FWPCA),Deepwater Port Act,Trans-Alaska Pipeline System (TAPS) Authorization Act, andOuter Continental Shelf Lands Act.[97]

Further the Act establishes Oil Spill Liability Trust Fund administered by the US Coast Guard's National Pollution Funds Centre. The funds are utilised in clean-up costs incurred by the Coast

[96] The McGraw. Hill Companies, Environmental Case Study: The Exxon Valdez Oil Spill, Ten Years Later (1999), availableathttp://www.mhhe.com/EnviroSci/CaseStudyLibrary/TopicBased/CaseStudy_TheExxonValdezOilSpill.pdf, accessed on 24th May 2019.

[97] Section 2002, Title II of the US Oil Pollution Act 1990.

Guard and EPA, research development, damage assessment, and settlement of claims. The fund is funded by the government and by tax imposed on imported and exported oil and through penalties.[98]

Section 1002 of the Act puts the liability on damage caused by discharge of oil on a party responsible for the vessel or facility from which oil is discharged. Courts have interpreted the terms "liable" and "liability" as imposing strict liability on parties responsible for the discharge of oil or hazardous substances into the waters of the United States.[99]

The Act's definition of damage is wide and includes destruction or loss of natural resources, loss of real or personal property, loss of subsistence use of natural resources, Damages equal to the net loss of taxes, royalties, rents, fees, or net profit shares due to the injury, destruction, or loss of real property, personal property, or natural resources, damages equal to the loss of profits or impairment of earning capacity due to the injury, destruction, or loss of real property, personal property, or natural resources and damages for net costs of providing increased or additional public services during or after removal activities, including protection from fire, safety, or health hazards, caused by a discharge of oil.

Section 1013 also provides for a claims procedure which involves presentation of the Claim to the party responsible. In the event the party responsible denies responsibility or refuses to settle the claim within 90 days a claimant may present the claim to the fund or commence an action in court against the party responsible.

The Act recognizes the need to respond quickly to oil spills which is key in averting the damage done to the environment. Section 4201 of the Act amended section 311 (c) of the Clean Water

[98] Section 4304, Title III of the US Oil Pollution Act 1990.
[99] Section 311 of the Clean Water Act and *United States vs. New York*, 481 F. Supp. 4 (D.N.Y) 1979.

Act to give authority to the EPA and the Coast Guard President to perform clean-up activities immediately using federal resources, monitor response efforts of the spiller and direct the spiller's clean-up activities. This is unlike section 63 of the Kenyan Petroleum Act that requires the person involved to notify the EPRA within 48 hours of any accident and incident of oil spill.

2.3.3. **Standardsof vessels**

The Act also sets standards on construction of vessels. For instance, under section 4115, the Act establishes a double hull requirement for newly constructed tankers, and tank barges that operate in U.S. waters.[100] Double hulled tankers reduce the likelihood of leaks occurring compared to single-hulled tankers, and their ability to prevent or reduce oil spills. This is also in compliance with the International Convention for the Prevention of Pollution from Ships (MARPOL Convention) that aims at preventing and minimizing pollution from ships.

The Act also requires owners of vessels over 300 tons and using the exclusive economic zone to submit evidence of financial responsibility sufficient to meet the maximum amount of liability to which the responsible party could be subjected. Failure to submit the evidence could lead to revocation of clearance granted to vessels before departure under section 4197 of the Revised Statutes of the United States.

2.3.4. Oil Spills Prevention Control and Countermeasure (SPCC) Regulations[101]

These regulations were enacted pursuant to section 311 of the Clean Water Act with the goal of preventing oil from reaching navigable waters adjoining shorelines and to contain discharges of oil. They are part of EPA's oil spill prevention program. The Regulations provide for prevention, preparedness for and response to oil discharges. Particularly, the regulations require facilities to

[100] See also Regulation 19 - Double hull and double bottom requirements for oil tankers delivered on or after 6 July 1996.
[101] Title 40 of the United States Code of Federal Regulations, part 112

develop and implement the Spill Prevention, Control and Countermeasure plans. Besides the Regulations also establish procedures, methods and equipment required to prevent and respond to oil spills. The plans must be reviewed and certified by a licensed professional engineer who must visit and examine the facility before certifying that the same is adequate for the facility.[102]

In the Plans, owners or operators of facilities are required to discuss the facilities conformance with the requirements, describe physical layout of the facility, mark location and contents of each fixed oil storage containers, the type of oil in each fixed container discharge, discharge prevention measures including procedures for routine handling of products such as loading, unloading and facility transfers amongst others.[103]

The regulations have also set out minimum prevention systems that facilities must use, for example spill diversion ponds, retention ponds, sumps and collection systems. This is unlike part VII of the Petroleum Act 2019 which is not specific as to the preventive and response to oil spill measures to be undertaken by oil facility owners and operators.

As regards personnel, facilities must train their personnel on discharge prevention and procedures. Such trainings in Kenya could help address the skills gap which has been identified in chapter 3 as one of the major gaps in the petroleum sector.

2.4 **Conclusion**

There are views that dispersing regulatory authority in various agencies rather than concentrating it facilitates more efficient regulation as it helps in curbing corruption and fraud. [104] However, in

[102] Part 112.3 of Title 40 of the United States Code of Federal Regulations.
[103] Part 112.7 of Title 40 of the United States Code of Federal Regulations
[104] William Sanour, 'Why Regulatory Agencies Don't Work,' available at<https://www.independentsciencenews.org/health/designed-to-fail-why-regulatory-agencies-dont-work/>accessed on 15th July 2019.

the US this has worked through signing of a Memorandum of Understanding to guide agencies' responsibilities in order to avoid conflict and duplication of roles. Further the establishment of a trust fund to cater for clean-up costs could go a long way in ensuring timely response to oil spills in terms of clean up and compensation to victims of oil spills. Training of personnel working in the petroleum sector on preventions and response to oil spills plays an important role in prevention and response to oil spills and in ensuring the safety of workers during oil spills which could ultimately save lives. Kenyan legislation needs to outline the specific preventive and response measures to be undertaken by oil facilities owners and operators to make it easier to comply and enforce the requirements.

CHAPTER THREE
THE LEGAL AND INSTITUTIONAL FRAMEWORK ON THE ENVIRONMENT AND SAFETY IN THE PETROLEUM SECTOR IN KENYA

3.0 Introduction

The regulation of the Petroleum sector is geared towards the achievement a sustainable, safe and secure framework for the exploitation of petroleum as a resource. As a country governed by a rule of law regime, this objective can only be achieved through the implementation of a robust legal system that is responsive to the unique needs of Kenya as a nation.

In line with this research's objective to study the legal and policy framework on safety and security in the petroleum sector in Kenya, this chapter shall interrogate the laws, regulations, policies and the respective actors in the endeavour to ensure the safety and security of the petroleum resource in Kenya and shall thereby lay a foundational stone towards the discourse in establishing the gaps that exist in the legal and policy framework. The analysis of the existing regulatory framework will ultimately create a basis for a comparative analysis of international best practice on safety and security in the petroleum sector, and culminate in informing context-specific recommendations for Kenya.

As identified in the preliminary chapter of this study, the safety and security play a key role in ensuring the sustainability of the petroleum sector in any oil producing context. It is therefore imperative that a nation's legal and regulatory framework incorporates critical aspects of safety and security including the broad social, economic, political and environmental concerns. Briefly summarized, the current Kenyan legal landscape for environment and safetyin the petroleum sector can be traced in the Constitution of Kenya 2010, the various legislation on the energy ad energy resources (including the Energy Act 2019 and the Petroleum Act 2019) and related

legislation that touch on natural resource use within the national and county governments. While maintaining focus on the theme of this research paper, this chapter shall discuss to the greatest extent applicable, the Kenyan legal and regulatory framework for environment and safety in the petroleum sector as evidenced in the ensuing sections.

Prior to March 2019, the Petroleum (Exploration and Production) Act, Cap 308 was the primary statute regulating the upstream petroleum sector in Kenya. It's long title read as follows: "an Act of Parliament that is enacted to regulate the negotiation and conclusion by the Government of petroleum agreements relating to the exploration for, development, production and transportation of petroleum.[105] This Act empowered the Minister to make regulations for or with respect to the conduct of petroleum operations, conservation of petroleum resources and measures relating to safety, environmental protection and the avoidance of waste, pollution and accidents.[106] In accordance with these provisions, the minister enacted the Petroleum (Exploration and Production) Regulations, 1984.[107] However, these regulations did not substantively provide for environment and safety in the petroleum sector and only focused on the negotiation of petroleum contracts and the model product sharing agreement.

Further, there is no comprehensive policy with strategies and guidelines for implementing safety and security measures in the petroleum sector. This is because the Draft National Energy and Petroleum Policy of Kenya of 2015 has not yet been enacted and implemented. The existing framework does not address ways in which the local communities in oil exploration areas can directly benefit from local ownership of these explorations and operations. There is also no

[105] Preamble, Petroleum (Exploration and Production) Act, CAP 308, laws of Kenya.
[106] S 6 (1) (k), Petroleum (Exploration and Production) Act, CAP 308, laws of Kenya.
[107] Petroleum (Exploration and Production) Regulations, 1984 [L.N. 193/1984]. These Regulations are expected to be repealed pursuant to the Petroleum Act 2019.

continuous monitoring and evaluation of the implementation process which is critical in filling any emerging insecurity gaps and issues. [108]

3.1 Constitution of Kenya, 2010

As the supreme law of the land, the Kenyan Constitution is the most important legal foundation with respect to regulation of any sector, as from it, the other regulative instruments draw their validity. With respect to the petroleum sector, it has been argued that the promulgation of the Constitution of Kenya has been seen to be one of the steps towards the upward development of the sector.[109] Article 260 of the Constitution defines land, and natural resources[110] to include fossil fuels and other sources of energy, making land and natural resources inseparable with respect to the interpretation of the constitutional provisions.[111] Thus, pursuant to this definition and Article 62, natural resources such as petroleum form part of public land which fall under the domain of the national government.[112]

Further, with the advent of devolution in Kenya, Schedule 4 to the Constitution of Kenya provides for the distribution of roles between national and county governments[113], with the national government being responsible for the function of protection of the environment and

[108] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya, 2015, P. 216.
[109] Patey L, "Kenya–An African Oil Upstart in Transition" (2014) 1 Oxford Institute of Advanced Studies https://ora.ox.ac.uk/objects/uuid:5abd035d-5f6a-4d53-8f5b-5adef249c31b/download_file?file_format=pdf&safe_filename=WPM-53.pdf&type_of_work=Working paper.
[110] "natural resources" means the physical non-human factors and components, whether renewable or non-renewable, including— sunlight; surface and groundwater; forests, biodiversity and genetic resources; and rocks, minerals, fossil fuels and other sources of energy.
[111] See C. O. Okidi, Environmental Rights and Duties in the Context of Management of Natural Resources (Nairobi: Constitution of Kenya Review Commission, 2003)
[112] See Constitution of Kenya 2010, Article 62 (1) (f).
[113] Mwenda AK, Economic and Administrative Implications of the Devolution Framework Established by the Constitution of Kenya (Institute of Economic Affairs 2010) p24.

natural resources with a view to establishing a durable andsustainable system of development including energy policy and energy regulation.[114]

Principally, the Kenyan Constitution seeks to ensure 'environmental justice' is observed in the exploitation of petroleum resources. Safety and environmental justice in the Kenyan petroleum sector are born together and therefore die together. While calls for 'environmental justice' have grown recently, very little attention has been paid to exactly what the 'justice' of environmental justice refers to, particularly in the realm of social movement demands.[115] Environmental justice has thus been described as 'both a vocabulary for political opportunity, mobilization and action, and a policy principle to guide public decision making'.[116] Broadly, environmental justice entails the right to access natural resources; not to suffer disproportionately from environmental policies, laws and regulations; and the right to environmental information, participation and involvement in decision-making.[117] Thus, environmental justice serves two purposes. First, it ensures no group of persons bear disproportionate environmental burdens, and secondly, that all have an opportunity to participate democratically in decision-making processes.[118] The foregoing sections discuss the anthropocentric and ecocentric dimensions of the Kenyan Constitution that have a bearing on safety and security and consequently on environmental justice in the petroleum sector.

From the onset, the preamble of the Constitution recognises the need for respect to the environment, which is revered as part of the Kenyan heritage and the additional need to sustain it

[114] Part 1 Paragraph 22 of Schedule 4 of the Constitution of Kenya.
[115] David Schlosberg, "Reconceiving Environmental Justice: Global Movements and Political Theories" (2004) 13 Environmental Politics 3, 517.
[116] J. Agyeman & B. Evans, "Just sustainability': the emerging discourse of environmental justice in Britain?" (2004) 170 Geographical Journal, 155–164.
[117] Kariuki Muigua, Didi Wamukoya & Francis Kariuki, *Natural Resources and Environmental Justice in Kenya* (Glenwood Publishers Ltd, Nairobi, 2015), 56.
[118] Ibid, 57.

for the benefit of future generations.[119] The constitutional provision borrows heavily from the 1972 World Heritage Convention, that prevails upon the member states not to take deliberate measures which could directly or indirectly damage heritage which is 'situated on the territory' of other parties. The preamble of the Constitution therefore denotes even a greater responsibility on the Kenyan government and people to protect the environment and especially where natural resources such as petroleum are involved.

Article 10 of the Constitution further lays down the national values and principles of governance that must be observed by all state organs, state officers, public officers and all persons whenever questions of constitutional interpretation, application, and implementation of public policy decisions arise. With respect to exploitation of natural resources such as petroleum, it is imperative that the principles of public participation, social justice, human rights, non-discrimination and protection of the marginalized, and sustainable development be observed by the relevant actors.[120]

When making decisions on the exploration, licensing and commencing of the commercial exploitation of petroleum, the national and county governments must ensure that the interests of the communities likely to be affected by such decisions are taken into account and their loss of resources and the ensuing disruption to their lives sufficiently compensated. The argument for participatory rights assumes that governments which operate with openness, accountability, and civic participation are more likely to promote environmental justice, to balance the needs of present and future generations in the protection of the environment, to integrate environmental

[119] Constitution of Kenya, 2010, Preamble.
[120] Constitution of Kenya 2010, Article 10.

considerations in governmental decisions, and to implement and enforce existing environmental standards.[121]

It is important that affected citizens access justice when their safety and right to clean and healthy environment are compromised as a result of petroleum activities. Article 23 of the Constitution therefore grants the High Court the authority to hear and determine such violations. Thus, following the expanded standing rights under article 22, persons directly affected, persons acting on their behalf, or in the public interest may bring and sustain claims for violation of safety and security rights in the petroleum sector. To better serve this right, the Kenyan judiciary should fast-track the decentralization of administration of justice by ensuring that courts are made accessible to the marginalized communities who are mostly affected by the exploitation of oil.

Another important aspect of petroleum governance that is likely to affect the environment and safety in the sector is access to information. Usually, the communities directly affected by the decisions on the exploitation of natural resources such as oil are so remotely placed from the major discussions and decision-making such that their views are hardly featured in the process. The negotiation and licensing of a petroleum firm for instance, takes place at the ministerial level in the national government and the communities concerned are usually at the periphery, that is, they only learn of the decisions after the same are made by the national government. Article 35 of the Constitution as well as the Access to Information Act, 2016 seeks to ameliorate this imbalance by ensuring the right to access to information held by the state that may affect the rights of these communities. Where the right to access to information is not upheld by the state,

[121] Patricia Birnie, Alan Boyle& Catherine Redgwell, *International Law and the Environment* (3rd edn, Oxford University Press, 2009), 299.

members of the affected communities may feel short-changed and may consequently pose a security risk to the petroleum installations or the production.

The right to access to information is traced to Principle 10 of the 1992 Rio Declaration on Environment and Development (Rio Declaration) and refers to both the availability of information related to the environment (including that on hazardous materials and activities in communities) as well as the mechanisms by which public authorities provide environmental information. [122] Chapter 23 of Agenda 21, also provides that individuals, groups and organizations should have access to information relevant to the environment and development, held by national authorities, including information on products and activities that have or are likely to have a significant impact on the environment, and information on environmental matters.[123]

Article 42 of the Constitution forms the foundation of environmental rights litigation by enshrining environmental rights in the following terms:

> *Every person has the right to a clean and healthy environment, which includes the right—*
>
> *a) to have the environment protected for the benefit of present and future generations through legislative and other measures, particularly those contemplated in Article 69; and*
>
> *b) to have obligations relating to the environment fulfilled under Article 70.*

[122] UNEP Training Manual on International Environmental Law, 79.
[123] Ibid.

A pollution free environment is a key requirement for the health and safety of individuals therefore this provision is critical. Furthermore, article 69 enshrines the fundamental obligations of the state in respect to the environment that include to:[124]

a) *ensure sustainable exploitation, utilisation, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits;*
b) *work to achieve and maintain a tree cover of at least ten per cent of the land area of Kenya;*
c) *protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities;*
d) *encourage public participation in the management, protection and conservation of the environment;*
e) *protect genetic resources and biological diversity;*
f) *establish systems of environmental impact assessment, environmental audit and monitoring of the environment;*
g) *eliminate processes and activities that are likely to endanger the environment; and*
h) *utilise the environment and natural resources for the benefit of the people of Kenya.*

With the express recognition in the Constitution, affected communities and individuals can directly hold the state accountable for failure to uphold the foregoing obligations. Article 70 on the other hand reinforces the available remedial rights of affected persons in line with Article 23. Cumulatively, Articles 23, 42, 69 and 70 constitute the guidelines for communities and individuals from the petroleum exploration areas in ameliorating their rights to safety and

[124] Constitution of Kenya 2010, Article 69.

security within the constitutional framework. Other pertinent constitutional provisions on safety and security in the petroleum sector include the following:

Article 66 makes provisions with respect regulation of land use and property. This provision operates against the backdrop that land, as a resource, plays an important role in the very existence and development of petroleum. The existence of good land legislation and constitutional provision is a step towards the achievement of petroleum development and direct investment.[125] Of particular interest to this research is the requirement under the Constitution[126] for the state to ensure public safety considerations in the regulation of the use, interest or right over land. In so doing, and in line with other factors that would be put into consideration, the safety of its citizens would be of paramount importance. Under this provision, the obligation to license and issue permits to petroleum operations, thereby fostering control and regulation with respect to safety and security as it relates to land.[127]

Article 71 of the Constitution furthers government control by way of parliamentary approval, the grant of rights to the exploitation of natural resources[128] in that a transaction that involves the grant of a right or concession by or on behalf of any person, including the national government, to another person for the exploitation of any natural resource of Kenya must be subjected to parliamentary approval, in fulfilment of its treaty obligations.[129]

[125] Onorato W., Legislative Frameworks Used to Foster Petroleum Development (World Bank 1995).
[126] Article 66 (1) provides that The State may regulate the use of any land, or any interest in or right over any land, in the interest of defence, public safety, public order, public morality, public health, or land use planning.
[127] Nixon Sifuna, 'Public Regulation of the Use of Private Land: Opportunities and Challenges in Kenya', 5/1 Law, Environment and Development Journal (2009), p. 38, available at http://www.lead-journal.org/content/09038.pdf
[128] Petroleum is a natural resource in land, see C. Juma and J.B. Ojwang, *In Land We Trust: Environment, Private Property and Constitutional Development* 85, 94 (Nairobi and London: Initiative Publishers and Zed Books, 1996).
[129] Angela Mwenda and Thomas N. Kibutu, 'Implications of the New Constitution on Environmental Management in Kenya', 8/1 Law, Environment and Development Journal (2012), p. 76, available at http://www.lead-journal.org/content/12076.pdf.

In summary, the Constitution of Kenya 2010 lays to the broadest extent possible the primary environmental rights that are fully applicable in the context of safety in the petroleum sector. It recognizes the fundamental environmental principles of public participation, access to information, access to justice among others, all of which are essential in natural resource administration.

3.2 Energy Act, No 12 of2006

Whereas this legislation has since been repealed[130] , this research finds it important to review the provisions of this legislation, insofar as petroleum safety and the environment are concerned, to best offer an understanding and appreciation of the development of law, which is an important factor in this sector.[131]

With respect to safety of petroleum, the Act empowered the Energy Regulation Commission (ERC) to formulate, enforce and review safety and quality standards for the energy sector, in coordination with other statutory authorities.[132]The Commission has since been changed to the Energy and Petroleum Regulatory Authority (EPRA) as per the Energy Act, 2019.[133]In order to ensure that the sector is sufficiently regulated, section 80 of the Act provided for mandatory licensing for any dealing with petroleum with particular emphasis on importation, refining, exportation, wholesale, retail, storage or transportation of petroleum, except upon grant of a valid licence.

The Act further provided for a mandatory exporters' license for the exportation of petroleum products, a valid permit for the transportation and a certificate to a driver of a motor vehicle used

[130] Effective 28th March 2019; See Section 224 of Act No 1 of 2019.
[131] A. Mumma, Constitutional Issues relating to Natural Resources (Nairobi: Constitution of Kenya Review Commission, 2003).
[132] Section 6 (c) of the Act No 12 of 2006 (Repealed).
[133] Kenya Energy Act, 2019, s. 9.

for the transportation of petroleum, failure of which such an operator committed an offence[134]. There was need to ensure safety of the petroleum sector by such regulative provisions, and thus justified the requirement for compliance with safety and security laws as a condition for grant of licenses.[135]

Further regulative measures to ensure safety in the petroleum sector were provided for in section 93 that allowed the ERC the right to revoke or suspend a permit or license on the basis of non-compliance with any term or condition.[136] Finally, other safety-ensuring mechanisms in the Act included the ensuring of standards, under section 95 of the Act[137]; the compliance with environmental, health and safety standards[138] and the mandatory requirement for local authorities to allocate designated parking places reserved exclusively for petroleum tankers and vehicles.[139]

3.3 Energy Act, 2019, No 1 of 2019

The Energy Act 2019 replaces the Energy Act, 2006, the Kenya Nuclear Electricity Board Order No. 131 of 2012 and the Geothermal Resources Act.[140] The 2019 Energy Act was enacted to consolidate the laws relating to energy, to provide for national and county government functions in relation to energy, to provide for the establishment, powers and functions of the energy sector entities; promotion of renewable energy; exploration, recovery and commercial utilization of

[134] Subsection (5): A person who contravenes this section commits an offence and shall, on conviction, be liable to a fine not exceeding one million shillings, or to a maximum term of imprisonment of one year, or to both.
[135] Compliance with the Environmental Management and Co-ordination Act, 1999 (No. 8 of 1999) and in particular, the report of the Environmental (Impact Assessment and Audit) Regulations, 2003, the Physical Planning Act, 1996 (No. 6 of 1996), the Local Government Act (Cap. 265) and any other relevant legislation.
[136] See Section 93 of Act 12 of 2006 that provided that the Commission may, by notice in the Gazette, suspend or revoke a construction permit if any term or condition thereof has not been complied with within the prescribed period.
[137] S95 provided that Petroleum imported or produced locally for use in Kenya, petroleum products, equipment, facilities and installations shall conform to the relevant Kenya Standard.
[138] Section 98 of the Act No 12 of 2012 (Repealed).
[139] Section 99 of Act No 12 of 2012 (Repealed).
[140] Kenya Energy Act, 2019, s. 224.

geothermal energy; regulation of midstream and downstream petroleum and coal activities; regulation, production, supply and use of electricity.[141]

In the context discussion, the Act creates the new Energy and Petroleum Regulatory Authority[142] with an expanded mandate that includes among other roles, working with the relevant statutory authorities to formulate, enforce and review environmental, health, safety and quality standards for the upstream petroleum sector.[143] The Act also introduces a new regime for liability for safety of persons by licensees in the energy sector.

The Act defines petroleum as "*petroleum all natural organic substances composed of carbon and hydrogen and includes oil and natural gas and all other mineral substances, products, by products and derivatives that are found in conjunction with such substances*." EPRA has an expanded mandate that includes among other roles, working with the relevant statutory authorities to formulate, enforce and review environmental, health, safety and quality standards for the upstream petroleum sector.[144] The Act also introduces a new regime for liability for safety of persons by licensees in the energy sector.

Specifically, the Act offers a far-reaching definition of pollution in the following terms:[145]

> "pollution" means any direct or indirect alteration of the physical, thermal, chemical, biological or radioactive properties of any part of the environment by discharging, emitting or depositing wastes or emitting noise so as to affect any beneficial use adversely, to cause a condition which is hazardous or potentially hazardous to *public*

[141] Long Title to the Act.
[142] Kenya Energy Act, 2019, s. 9.
[143] Kenya Energy Act, 2019, s. 10.

[144] Kenya Energy Act, 2019, s. 10.
[145] Kenya Energy Act, 2019, s. 2.

health, safety or welfare or to animals, birds, wildlife, fish or aquatic life, land and water sources or to plants or to cause a contravention of any condition, limitation or restriction which is subject to a license under this Act."

On the face of it, the definition seeks to address all sources of pollution that may result from the exploration and exploitation of natural energy resources including petroleum and the dangers to human life and all flora and fauna from certain ultrahazardous activities. As will be discussed at length in the next chapter, the Kenyan laws pertaining to pollution have not been adequately covered.

Under section 10 of the Act, the EPRA is mandated to inter alia, 'work with the relevant statutory authorities to *formulate, enforce and review* environmental, health, safety and quality standards for the upstream petroleum sector.'[146]The scope of EPRA as captured under the three key words, '*formulate, enforce* and *review*' is arguably sufficiently broad to cover all aspects of safety and security regulation in the petroleum sector in Kenya. The Act goes further to specifically require that EPRA takes the enforcement action on safety and security matters agreed in the petroleum agreement or any environmental protection regulations. This latter provision may however cause conflicting mandates with other environmental protection agencies such as NEMA.

The Energy Act 2019 additionally requires the EPRA to 'protect consumer, investor and other stakeholder interests.'[147] This provision without doubt encompasses the need for EPRA to take into account the safety interests of the stakeholders in the Kenyan petroleum sector.

[146] Kenya Energy Act 2019, sec. 10 (q).
[147] Kenya Energy Act 2019, sec. 10 (hh)

Other than the direct mandate to ensure compliance with safety measures in the Kenyan petroleum sector, section 96 of the Act empowers the EPRA to impose special conditions on licences that include the requirement to comply with the environmental, health, safety, planning and related laws. In similar measure, while reviewing licence applications, the EPRA is required to assess the compliance with Occupational Safety and Health Act or other safety and health standards laid down.[148] By extension, section 122 of the Act imposes mandatory conditions in licences that include the requirement that the licensee shall comply with all applicable environmental, health and safety laws.[149]

In summary, the Energy Act 2019 complements the provisions of the Petroleum Act 2019 on safety and security and reemphasizes the duty of the sector regulators to ensure safety and security in the upstream petroleum sector in Kenya. As with the Petroleum Act 2019, this paper will assess the Energy Act 2019 to ascertain how effectively addresses safety and security risks in the upstream petroleum sector which include, seismic and drilling- related risks, facility operations risks, maintenance and construction risks, and road transport related security and safety concerns.

3.4 Petroleum Act, No. 2 of 2019

ThePetroleum Act, 2019was enacted and assented to recently.[150] Its main objectives were to provide a framework for the contracting, exploration, development and production of petroleum; cessation of upstream petroleum operations; to give effect to relevant articles of the Constitution

[148] Kenya Energy Act 2019, sec. 98.
[149] Kenya Energy Act 2019, sec. 122 (2) (a).
[150] Assented to on 12th March 2019

in so far as they apply to upstream petroleum operations, regulation of midstream and downstream petroleum operations.[151]

The long title of the Act reads as follows, *"an Act of Parliament to provide a framework for the contracting, exploration, development and production of petroleum; cessation of upstream petroleum operations; to give effect to relevant articles of the Constitution in so far as they apply to upstream petroleum operations, regulation of midstream and downstream petroleum operations; and for connected purposes."* On the face of its title, the Act provides a more comprehensive regulatory framework for not only the upstream but also the midstream and downstream petroleum operations in Kenya.

Unlike its antecedent, the 2019 Act dedicates an entire 15 sections under Part VIII to the environment, health and safety. While this is a significant step in delineating the safety and security in the petroleum sector, this paper will interrogate the adequacy of the provisions in addressing the safety and security concerns that face the upstream petroleum sector in Kenya.

The 2019 Act also underscores the applicability of the Occupational Safety and Health Act No. 15 of 2007 and the Environmental Management and Coordination Act No. 8 of 1999 to upstream petroleum operations. Of key relevance in this paper is section 65 of the new Act that provides as follows:

> "Upstream petroleum operations shall be conducted in such a manner as to enable a high level of safety to be maintained and further developed in accordance with technological advancement, best petroleum industry practices, the Occupational Health and Safety Act, 2007, and any other applicable laws."

[151] Long title of the Act No 2 of 2019

Additionally, the Act recognizes inter-agency input to the question of safety in petroleum operations by clearly anticipating the role of the Kenya Bureau of Standards in standardizing petroleum apparatus and materials used by the oil producing companies.

In terms of safety in the Kenyan petroleum sector, the Petroleum Act 2019 represents a major milestone. The Act dedicates an entire Chapter to deal with safety issues that have plagued the Kenyan petroleum sector.

The cabinet secretary is empowered under section 10 of the Petroleum Act to order the cessation of any operations and withdrawal of all persons from any structure or building, machinery or infrastructure being used in connection to upstream petroleum operations on safety grounds.[152]

As noted, the entire Part VIII of the Act deals with Environment, Health and Safety in the petroleum sector and requires that contractors in the sector comply with the applicable environment, health, safety and maritime laws and best petroleum industry practices.[153]The foregoing provision of the Act introduces the concept of 'best petroleum industry practices' that mean practices, methods, standards and procedures generally accepted and followed internationally by prudent, diligent, skilled and experienced operator in upstream petroleum operations, including practices, methods, standards and procedures intended to conserve petroleum by maximizing recovery of petroleum in a technically and economically sustainable manner, promote operational safety and prevention of accidents; and protect the environment by minimizing the impact of upstream petroleum operations.[154]

[152] Kenya Petroleum Act, 2019, section 10 (m).
[153] Kenya Petroleum Act, 2019, section 59 (1).
[154] Section 2 of the Act No 2 of 2019

The regulative mechanism that ensures safety in the sector is therefore the best practices and the licensing and permitting of the energy sector. The Act further requires a contractor to deploy the best available technology to assure quality, environment, health and safety requirements are met.[155] Waste management is critical in ensuring the safety of the petroleum sector since improper waste management may cause environmental damages which will ultimately lead to environmental displacement. Section 60 of the Act therefore provides for a safety mechanism on waste management whereby a contractor is required to ensure that the management of production, transportation, storage, treatment and disposal of waste arising out of upstream petroleum operations is carried out in accordance with all the applicable environmental, health, safety and maritime laws and best petroleum industry practices. This goes in line with the postulation that waste management has been the cause of unsafe petroleum in the globally.[156]

The Act recommends to contractors the option to contract a separate entity to manage the transportation, storage, treatment, spillage or disposal of waste arising out of upstream petroleum operations. This goes a long way in facilitating the best practice that the Act and other laws have endeavoured to support, yet the contractor would still be required to take control of the waste management process, and the possible engagement of only licensed environmental waste management practitioners.[157]

The Act, in ensuring safety in the petroleum sector, makes clear provisions on property management, where the contractor is obliged to maintain the equipment utilized in good conditionthat goes in line with the industrial best practice.[158]This ensures that there is smooth

[155] Section 59 of the Act
[156] Christine Batruch, 'Lundin Petroleum AB's experience in East Africa: the role of the private sector in conflict-prone Countries', The Economics of Peace and Security Journal, Vol. 5, No. 2,2010, 7
[157] See Section 60 (4) and (5) of the Act No 2 of 2019
[158] Dedobbeleer, N., Beland, F., 1991. A safety climate measure for construction sites. Journal of Safety

running of the equipment which is important in avoiding environmental disasters such as spills and other emergencies.

Section 61 of the Act thereby requires a contractor to maintain in good condition and repair, all structures, facilities, equipment and other property in the area subject to the petroleum agreement and used in connection with the operations in which the contractor is engaged; remove from that area all structures, facilities, equipment and other property that are not either being used or intended to be used in connection with those operations; and take reasonable steps to warn persons within the vicinity of any such structure, facilities, equipment or other property of the presence of the structure, equipment or other property and the possible hazards resulting there from, without which the contractor would be liable for high volume punitive fines.[159]

These go in line with the industrial best practice, as the maintenance of the property conditions, is a factor that plays out greatly in the quest for occupational safety, that would ensure that petroleum safety and security is ensured[160]and the regulative mechanisms are meant to ensure compliance in not only the petroleum, but also other technical sites in the world over.[161]The attitude towards accident prevention is further an indication that the Kenyan law, as is, is geared towards the ensuring of international best practice, with respect to ensuring safety and security in the petroleum industry.[162]

Further, as an environmental safety plan, the Act prohibits the venting and flaring of natural gas in the course of the conduct of upstream petroleum operations except with the prior authorization

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Research 22, 97 &103
[159] Section 62 (3) of Act No 2 of 2019
[160] Cohen, A., 1979. Factors in successful occupational safety programs. Journal of Safety Research 9 (4), 168
[161] A., Williamson, A. (Eds.), *Occupational Injury: Risk, Prevention and Intervention*, Taylor & Francis, London
[162] Flin, R., Mearns, K., Fleming, M., Gordon, R, Risk Perception and Safety in the Offshore Oil and Gas Industry (1996 OTH 94454). HSE Books, London.

of the Energy and Petroleum Regulatory Authority.[163] This, as indicated in the Act determines the grant of the consent and conditions attached thereto, with respect to the practice of oil and gas operations, and informs the measures that have from time to time been taken in the management of offshore operations.[164]Emergency circumstances are nonetheless exempt from this requirement, especially where there is need to avert a disaster.[165]

In the event there is need for flaring of natural gas, with approval of the Authority, the Act further provides for guidelinesthat would further foster the safety and security thereof. The Contractor under the Act is required to ensure that the gas venting or flaring is kept at the lowest possible level and in any event inform the Authority of the carrying out of such venting or flaring and the circumstances requiring such action; and submit to the Authority such information as the Authority may require with respect to such venting or flaring.[166]

Further, in the event a person is desirous of making the application to the Authority, such an application should contain for the proposed flaring of oil or natural gas should include an evaluation of reasonable alternatives to flaring that have been considered along with information on the amount and quality of oil or natural gas involved and the duration of the requested flaring. In considering the application, the Act further provides that the Authority should be satisfied that flaring is necessary to safeguard the health and safety of persons in the contract area or to prevent damage to the property of any person.[167] As had been appreciated by authors in the field

[163] Section 62 (1) of the Act.
[164] Flin, R., Slaven, G., 1993. Managing offshore installations. Petroleum Review Feb, 68-71.
[165] Section 62 (3) of the Act No 2 of 2019.
[166] Section 62 (4) of the Act No 2 of 2019.
[167] Section 63 (5) and (6) of the Act No 2 of 2019.

of extractives, oil and gas safety, that flaring, as an activity poses health and environmental risks[168] and therefore the need for its prevention, reduction and avoidance.[169]

The Act as cited above takes a pro-active approach towards ensuring safety in the petroleum sub-sector. In the event that the hazardous or risky event has been occasioned to the environment, property or to any person, the Act requires that the same be reported promptly, and the same be investigated by the authority. This is to prevent further damage occasioned to the environment or to human beings as well.

Section 63 of the Act requires a person engaged in any undertaking or activity pursuant to a petroleum agreement or permit issued under the Act to notify the Authority within forty eight hours in writing, in the form and manner prescribed by the Authority, of any accident or incident causing loss of life, personal injury, explosion, oil spill, fire or any other accident or incident causing harm or damage to the environment or property which has arisen in Kenya or within Kenya's Exclusive Economic Zone or Outer Continental Shelf. Reporting accidental oil spills or fire, or other incidences has been appreciated in the world over and qualifies to be a canon of international best practice [170] and the Act thereby requires the Authority to pursue robust investigations.[171]

[168] Ajugwo, A.O. Negative effects of gas flaring: The Nigerian experience. J. Environ. Pollut. Hum. Health 2013, 1, 6–8.
[169] Ovuakporaye, S.I.; Aloamaka, C.P.; Ojieh, A.E.; Ejebe, E.; Mordi, J.C. Effect of Gas Flaring on Lung Function among Residents in Gas Flaring Community in Delta State, Nigeria. Res. J. Environ. Earth Sci. 2012, 4, 525–528.
[170] Aguilera, F.; Méndez, J.; Pásaroa, E.; Laffon, B. Review on the effects of exposure to spilled oils on human health. J. Appl. Toxicol. 2010, 30, 291–301.
[171] See Subsection (2) of the Section -The Authority may direct an investigation to be carried out into any accident or incident under subsection (1) and take such action as it deems necessary.

Other safety measures afforded by the legislation include standardization[172], high level safety maintenance [173] , the taking of safety precautions by a contractor [174] , emergency preparedness [175] and the initiation and maintenance of emergency preparedness measures to prevent and mitigate against any hazards occurring within facilities and shall at all times have contingency plans to deal with such emergencies.[176]

The Act further provides for safety zones surrounding every facility carrying out upstream petroleum operations.[177]Therefore, it is compulsory for every petroleum plant to have a safety zone, as the authorities, or the Cabinet Secretary would rarely exempt this application but would often extend them.[178]Safety zones are important in curbing extensive damage to people and property in case environmental emergencies or spills occur.

The Act also provides for the issue of liability for any damage that may be occasioned due to pollution. In such events, the contractor shall be liable without regard to fault from whichever source related to the upstream petroleum operations of the contractor when the damage occurs in Kenya or within its territorial waters.[179]Similar regulative provisions are made with respect to midstream and downstream petroleum.[180]

[172] Section 64 of Act No 2 of 2019
[173] See Section 65: Upstream petroleum operations shall be conducted in such a manner as to enable a high level of safety to be maintained and further developed in accordance with technological advancement, best petroleum industry practices, the Occupational Health and Safety Act, 2007, and any other applicable laws.
[174] Section 66
[175] Section 67
[176] Section 68 Act No 2 of 2019
[177] Section 70 of the Act No 2 of 2019
[178] The Cabinet Secretary may upon advice by the Authority, in cases of accidents and emergencies establish or extend the safety zones.
[179] Section 72 of the Act 2 of 2019.
[180] Part 9 of the Act 2 of 2019

In addition of liability in instances where damage occurs, the affected persons have a right to be compensated in full. But as will be discussed in the next chapter, legislation to this effect has not been enacted.

The Petroleum Act No 2 of 2019 is a pragmatic approach towards the achievement of petroleum sub sector safety; with its provisions closely comparable to the South African legislation, the Mineral and Petroleum Resources Royalty Act. [181]

As highlighted in the detailed analysis of the Petroleum Act 2019 and the Energy Act 2019, the framework for safety is now much expanded though the adequacy remain to be tested through application. The damage or harm caused by the slow legislative response is already substantial as the integral safety and security concerns of the local communities in Turkana have not been addressed and are not likely to be redressed retroactively. Nevertheless, it remains to be seen what these two newest statutes will achieve given the new institutions created and anticipated regulations on safety and security in the Kenyan petroleum sector.

3.5 Environmental Gaps in the Petroleum Sector in Kenya

There is little discussion that exists on the environmental and human safety of the petroleum sector. Furthermore, there is limited discussion on how the state is prepared to adequately respond and efficiently manage these likely occurrences.[182] Generally, the Constitution covers safety and security issues in the sector albeit without much detail. The relevant Acts however cover a wide range of safety and security measures in detail as has been discussed in the previous chapter. Despite this, there are a number of gaps that exist in this sector.

[181] Cawood F, "The South African Mineral and Petroleum Resources Royalty Act—Background and Fundamental Principles" (2010) 35 Resources Policy 199.
[182]Oppong, Seth, "Common health, safety and environmental concerns in upstream oil and gas sector: Implications for HSE management in Ghana" *Academicus International Scientific Journal* 09 (2014): 93-106. p. 93.

A number of environmental impacts associated with various technical activities of the entire lifecycle of the oil and gas industry which are exploration, drilling and extraction, transport, refining and combustion or use have been identified.[183] They range from oil spills, air pollution, acid rain, environmental degradation and climate change.

It is expected that laws and regulations in this sector should provide for principles that will eradicate or diminish such environmental impacts. These include minimizing ecological damage, avoidance of waste to petroleum and its production to the environment, preventing pollution and waste to land and structures, freshwater resources, crops, marine and animal life, emergency clean up obligations and procedures and restoration of the environment at the conclusion of petroleum operations.[184]

The Kenyan laws in the petroleum sector discussed above do not adequately cover all these principles. Article 69(1) (g) of the Constitution for example, broadly provides that the State has an obligation to eliminate processes and activities that are likely to endanger the environment. It however does not explicitly explain how this is to be achieved nor the procedures to be taken to eliminate such processes. A critical omission in the primary legislation is the absence of specific provisions on emergency shutdown (ESD) and process shutdown (PSD) systems that should take action when the oil production process goes into a malfunction or dangerous state.

Neither the Energy Act nor the Petroleum Act provides for emergency clean up procedures in situations where there are environmental emergencies, disasters and spills. These can be as a result of human error or natural phenomena. They could also be unpredictable in their occurrence and vary in their scale and frequency and their effects can be occasioned to the environment,

[183] Epstein P R and Selber J "Oil: A Life Cycle Analysis of its Health and Environmental Impacts," The Centre for Health and the Global Environment, Harvard University (2012).
[184] Onorato W, Legislative Frameworks Used to Foster Petroleum Development (World Bank 1995).

people or to property. When such emergencies occur, a rapid and effective response should be made by the relevant stakeholders to ensure that environmental degradation and human impacts are quickly mitigated, rectified and eventually eradicated.

In this regard, section 63 of the Petroleum Act only requires such emergencies to be reported promptly, investigations as to the accident or incident carried out and action taken as is necessary. Section 67(1) on the other hand provides that a contractor should at all times maintain efficient measures for emergency preparedness when environmental emergencies occur. However, these sections fail to explain the procedures and measures that should be taken once such emergencies and spills occur.

The measures to be taken include prevention of vessels or people from entering the spill area, zoning off the area, eradicating the hazardous substances, pollutants and contaminants and correcting the environmental damages in a bid to restore the environment.[185]

Additionally, there lacks specific legislations and guidelines on disposal of upstream oil field waste management from drilling activities, oil wells and offshore wastes and gas flaring. Such guidelines need development especially with regard to waste manifesting and tracking, standards of oil field waste management facilities, waste storage and transfer, biodegradation, thermal treatment, use of oil by-products, management of oilfield landfills, importation and exportation of oilfield wastes.[186]

All the gaps discussed with regard to the environment should be integrated in the relevant laws to ensure effective management of environmental impacts occasioned by the petroleum sector in

[185] Saurabhb Tewari and Abhinav Sirvaiya, "Oil Spill Remediation and its Regulation," *International Journal of Research in Science and Engineering* (2015).
[186] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya, P 182.

Kenya. Additionally, with the increasing relevance of new technology in the natural resources sectors globally, more attention should be paid to e-Field or digital oilfield (DOF), that is, specifically encouraging the use for newsolutions and technologies for operation, work processes and methods thatare being made possible by adopting innovations in information technology.

3.6 Access to Information

Article 35 of the Constitution provides that individuals have the right to access information held by the State or by another person. Further, article 69 mandates the Government to encourage public participation in the management, protection and conservation of the environment. Additionally, access to information and public participation are regarded as national values as per article 10 of the Constitution. The Constitution however does not elaborate on the nature of public participation nor the balance between access to information and the right to privacy of private actors.

International best practice on community engagement however, requires meaningful interaction and good faith in dialogue with interested parties having an ability to influence the management of social issues. It is contingent upon transparent, accessible and meaningful information. However, the engagement of the government and companies with the local community does not meet these standards.

Leaders from Turkana County as well as residents in the county have complained numerously about receiving inadequate information and guidance on the redress mechanisms and procedures in human rights violations, compensation of environmental damages and their shares in the revenue of the oil products.[187] Additionally, majority of the members of the community were

[187] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya, P. 109.

not involved when oil companies first made entry into the community. They consequently lacked information about the activities of the companies.[188]

For instance, the negotiation and licensing of a petroleum firm takes place at the ministerial level in the national government and the communities concerned usually learn of the decisions after the same are made by the national government. There has also been a lack of transparency surrounding transactions made by the government and companies, a situation which leaves in doubt the probability of the increase of a wide range of improvements in Turkana as a result of the revenue generated from the oil.

It is therefore important to uphold the right to access information to ensure that members of the affected communities do not feel short changed. Transparent community engagement and consent plays a huge role in benefitting the local community. Additionally, it will also ensure that security risks to the petroleum installations or the production do not occur.

Effective avenues for public participation should also be established in such regions. This could be through regular barazas at the local level. Engagement of all the relevant sectors should ensure that respect for communal values is adhered to at all times. Most importantly, the agreed outcomes of the participatory dialogue processes should result in legislation. This will ensure that the wishes of the members of the community are taken into consideration and adhered to.

It is also critical to promote democracy by providing for the participatory right of communities in decision making processes related to the petroleum sector.[189] This democratic culture does not

[188] Institute for Human Rights and Business, "Human Rights in Kenya's Extractive Sector: Exploring the Terrain," (2016) available at www.ihrb.org/focus-areas/commodities/human-rights-in-kenyas-extractive-sector-exploring-the-terrain.

[189] Olufunmilola Ayotunde, 'Legal and Institutional Framework for Multi-Stakeholder Participation in Oil and Gas Management in Nigeria: Perspectives on the Multi-Stakeholder Dialogue Approach' (LL.M Thesis, University of Saskatchewan Saskatoon, 2016), P. 102

only involve the ability of people to participate in decision making but also includes the people's power to hold their leaders accountable.[190] This can be easily enhanced by electing representatives that will be accountable to members of the community thereby reducing the undemocratic nature of their leadership.

Information should also be relayed in a manner that is understandable to the community, for example, by breaking down how the contracts relate to the use of land and water and how the infrastructure could impact the free movement of pastoral communities and their animals. The information can also be relayed in their local dialect to ensure that there is complete understanding of activities undertaken in the region.

Engagement between investors, government, local leaders and employees should be continuous and undertaken at regular intervals to ensure smooth operation of activities and faster development of the sector. Transparency and responsiveness to requests for information and concerns from the local community and environmental civil society groups will be key in combating misinformation.[191]

Another gap in this regard is the absence of imperativelegislative edict on the use of specific information management system (IMS) in the Kenyan petroleum sector. An IMS can be used to provideinformation about the operation and production of the facility, including volumes, economic estimates and costs, which data should be shared with the key stakeholders in the sector. This will critically inform decisions of the national and county governments as well as the local community on the revenue entitlements besides improving the overall transparency of the process.

[190] Ibid at P. 102.
[191] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya at P. 213

IMS will also improve safety and security in the Kenyan oil sector by providing for the oil production reporting, safety management, maintenance and operator support and the overall integration of systems. While good industry practice would ordinarily require the observance of such standards, elevating such standards to legislative edict would definitely lead to realization of sustainable petroleum exploitation and management.

3.7 Conclusion

Like most of the sectoral laws on natural resources in Kenya, the Energy Act 2019 and the Petroleum Act 2019 that form the primary legislation on the Kenyan petroleum sector, incorporate the already discussed principles of environmental justice. These are applicable in almost uniform patterns in the management of petroleum resources as may be the case in forests, wildlife, water and other natural resources.

On a foundational basis, the Constitution of Kenya 2010 enshrines important principles to address environmental injustice that is mostly reflected in the uneven access to benefits from petroleum resources and uneven distribution of environmental burdens among the different societal segments in Kenya. While the residents in the areas of exploitation of petroleum such as Turkana are at a greater risk than the larger Kenyan society from unregulated growth, ineffective regulation of toxins, and public policy decisions authorizing exploitation of petroleum, it is vital that relevant stakeholders make environmentally sound decisions to avoid the 'resource curse' that may inevitably arise if the safety and security factors are not properly addressed. In the meantime, it remains to be seen whether the regulatory framework discussed above will be implemented to cater for the highlighted safety and security concerns.

CHAPTER FOUR
THE LEGAL AND INSTITUTIONAL FRAMEWORK ON SECURITY IN THE PETROLEUM SECTOR IN KENYA

4.0 Introduction

The previous chapter of this study interrogated the laws, regulations and policies in the petroleum sector in Kenya and their importance in ensuring the safety in the petroleum sectorin Kenya. This ranged from the Constitution, to the Energy Act, 2016 which has since been repealed, the new Energy Act, 2019 and the Petroleum Act of 2019. Generally, this interrogation confirmed the fact that there are a number of safety and environmentalmechanisms established by the various legal instruments and policy frameworks discussed.

This chapter will discuss the security situation in the Kenyan petroleum sector by interrogating the socio-economic, political, environmental and human elements. This is in line with the research objective of this study which is to establish the gaps existing in the legal and policy framework on safety and security in the petroleum sector in Kenya. The discussion will be supported with scholarly materials from other jurisdictions since not much has been published with regard to safety and security in the upstream Kenyan petroleum sector.

4.1 The Constitution of Kenya 2010

From the onset, the Constitution recognizes the sanctity of land rights which are at the core of the security discussion in oil producing areas. Article 60 of the Constitution provides that, ‘land in Kenya shall be held, used and managed in a manner that is equitable, efficient, productive and sustainable, and in accordance with the following principles……(b)*security of land rights.*[192]

[192] Constitution of Kenya 2010, Article 60 (1) (b).

The exploitation of oil in Turkana county necessarily involves alienation of massive tracts of land from the locals in order to set up the drilling and operational bases of the oil companies. With the ensuing displacement, the local communities the national and county governments must ensure that the interests of the communities are taken into account and their loss of resources and the ensuing disruption to their lives sufficiently compensated. This will be discussed in detail below.

Further, Article 239 of the Constitution establishes the National Security Organs (the Kenya Defence Forces;the National Intelligence Service; andthe National Police Service) whose primary mandate is to promote and guarantee national security in accordance with the principles mentioned in Article 238(2).[193]It remains debatable whether this mandate has been adequately met in Turkana, where insecurity still rages due to cattle rustling, border disputes and disputes over natural resources such as watering points for livestock.

4.2 The National Police Service Act No. 11A of 2011

This Act, in addition to establishing the National Police Service, creates the County Policing Authority in respect of each county.[194]The County Policing Authority is critical in ensuring local security as can be seen from its mandate. Key among itsfunctions include to develop proposals on priorities, for police performance in the county, provide a platform through which the public participates on the all aspects relating to county policing; ensure policing accountability to the public; and to receive reports from Community Policing Forums and Committees.[195]

In order to foster greater security at the grassroot levels, the Act empowers police officers,in consultation with stakeholders, to facilitate the establishment of area community policing

[193] Constitution of Kenya 2010, Article 239.
[194] The National Police Service Act No. 11A of 2011, section 41.
[195] The National Police Service Act No. 11A of 2011, section 41 (9).

committees and other administrative structures.[196] This should be contrasted with theNational Committee on Implementation of Citizen Participation in Security popularly known as Nyumba Kumi, which was initiated by President Uhuru Kenyattaon October 10, 2013 to encourage citizens to take charge of their own security and increase vigilance. Finally, the Act establishes the National Police Reserve which has been critical in providing security in marginalized areas such as Turkana.[197]

Other than the national security provisions discussed above, the Energy Act, 2019 empowers the cabinet secretary to develop regulations providing for securing the safety of the publicfrom danger, personal injury or damage toproperty arising from the generation, transmission,distribution, retail or use of electrical energy.[198]The Petroleum Act, 2019 only provides for the contractor to develop and submit to the cabinet secretary proposal for ensuring the safety, health, securityand welfare of persons and facilities in or about the proposedupstream petroleum operations.[199]

4.3 Human related Gaps in Security in the Petroleum Sector in Kenya

There are a number of human related gaps with regard to security in the petroleum sector in Kenya. They include sharing of revenue, compensation of environmental damages and displacement, access to information and accidents arising from exploration of petroleum. This section will discuss all these gaps in depth.

[196] The National Police Service Act No. 11A of 2011, section 98.
[197]The National Police Service Act No. 11A of 2011, section 110.
[198] Energy Act, 2019, section 167.
[199]Petroleum Act, 2019, section 10.

4.3.1 Share in the Revenue of Oil

The laws, policies and regulations of the petroleum sector do not address ways in which the local communities in oil exploration areas in Kenya are to benefit from local ownership of the explorations and operations. The current sharing formula in the Petroleum Act indicates that the national government will receive 75 per cent of the profits derived from upstream petroleum operations, the county government will get 20 percent while the community will get 5 per cent.[200] These percentages are to be reviewed by Parliament within ten years.

This formula however did not augur well with the local community. Many of them claimed that they were not consulted when this formula was agreed upon by the President, his deputy and leaders from Turkana led by the Governor.[201] They instead preferred that the country stuck to the earlier version of the Petroleum (Exploration, Development & Production) Bill that apportioned the sharing of oil revenue at the ration of 70, 20 and 10 percent by the national government, county government and the community respectively.[202] This initial formula was preferred as it ensured that the people of Turkana had more say with regard to their resources. This could subsequently eradicate marginalization in the region.

The current formula was reached after the national government agreed to eliminate a cap on the revenue due to the county government that was present in the Petroleum (Exploration, Development & Production) Bill. Some leaders had advocated for the cap on annual allocation from oil exports to Turkana, arguing that the local economy could not absorb a sudden influx of revenue from the production of oil.

[200] Section 58 of the Petroleum Act No 2 of 2019.
[201] Voices from the Grassroots, "Give Turkana its Fair Share of Oil Revenues," Institute for Law and Environmental Governance No. 2 of 2018.
[202] Ibid

The existing legal framework does not also address ways in which the local communities in oil exploration areas can directly benefit from local ownership of these explorations and operations. There have been demands for more benefits from the oil industry from the local community. These demands are as a result of overblown expectations from the locals and as a result of witnessing the damage occasioned to the environment by the oil companies.[203] As a result, some of the regions in the area have witnessed demonstrations by local residents over the lack of employment and business opportunities.

The Natural Resources(Benefit Sharing) Bill, 2018 was introduced before the Senate House in the last quarterof 2018 and is currently under review by the Senate committee on Land, Environment and NaturalResources. The Bill makes ambitious recommendations regarding sharing of natural resource benefits that has perhaps been the reason for the delay in its enactment.

First, the Bill expands the functions of the Commission on Revenue Allocation under Article 216 (1) of the Constitution and section 10 (1) (d) ofthe Commission on Revenue Allocation Act, 2011to include the implementation of the Natural Resources(Benefit Sharing) Bill. The scope of functions listed under section 4 of the Bill include among others: to co-ordinate the preparation of benefit sharingagreements between an affected county and anaffected entity; to review, and where appropriate, determine theroyalties payable by an affected entity engaged innatural resource exploitation; and to oversee the administration of funds set aside forcommunity projects to be implemented under abenefit sharing agreement.

[203] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya, P 123.

The Bill also makes proposals for the Kenya Revenue Authority to collect the royalties and pay them into the sovereign wealth fund. On the proportion of sharing revenue, the Bill proposes that twenty per cent of the revenue collected to paid into a sovereign wealth fund while of the eighty per cent remaining,be shared between theNational Government and respective countygovernments in the ratio of sixty per cent to theNational Government and forty per cent to thecounty governments.[204]

To ensure further use of the funds locally, the Bill proposes that at least forty per cent of the revenue assigned tocounty governments should beutilised to implement local community projects and sixtyper cent of that revenue shall be utilised for the benefit ofthe entire county.

further, each county with a natural resource is required to establish a County BenefitSharing Committee which is mandated to enhance public participation in the negotiation of benefit sharing and management of the natural resources.[205]

The Bill further requires that every benefit sharing agreement shall beapproved by the respective county assembly prior to theexecution of the agreement by the respective countygovernment before being deposited with the Commission of Revenue Allocation within 30 days of execution and the Senate. The local communities are also represented in the entire process through a Local Benefit Sharing Forumcomprising of fivepersons elected by the residents of thelocal community and who play a critical role in identifying and monitoring the implementation of local projects.[206]

4.3.2 Compensation for Environmental Displacement and Damages

Article 40 of the Constitution provides that individuals should be promptly compensated in full whenever their land is expropriated. However, this has not been the case in Turkana where

[204] Section 8 of the Natural Resources (Benefit Sharing) Bill, 2018.
[205]Section 11 of the Natural Resources (Benefit Sharing) Bill, 2018.
[206]Section 13 of the Natural Resources (Benefit Sharing) Bill, 2018.

compensation has dragged on. The payment of compensation has led to friction between Tullow Oil and the people of Turkana.[207] The intensified animosity between the two culminated into violent attacks on investors sites forcing them to suspend operations in some occasions.[208]

Furthermore, concerns over compensation have tended to encourage attempts and threats by the communities in Turkana to attack the exploration sites and interfere with oil operations in attempts of expressing their displeasure. This was epitomized by the blockage of the oil tankers from Lokichar to Mombasa by the local Turkana residents on grounds that the project was only benefiting non-Turkana county residents.[209]

The Draft Energy and Petroleum Policy calls for a Resettlement Action Plan (RAP) framework that will address issues of livelihood restoration following physical displacement of communities.[210] Such a framework that builds on human rights norms and international standards could provide important protection for local communities while at the same time providing more certainty for companies as well as local governments on the procedures to be followed.[211] However, the draft policy has not yet been enacted and implemented.

There is therefore a need for the relevant laws and regulations to provide for specific provisions that adequately cover compensation of environmental displacement. The payment should also be prompt as is required by the Constitution. These are prerequisites for security in the oil producing areas such as Turkana.

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[207] Johannes, Eliza M, Leo C Zulu and Ezekiel Kalipeni, "Oil Discovery in Turkana County, Kenya: A Source of Conflict or Development?" African Geographical Review (2015)
[208] Kennedy Mkutu and Gerard Wandera, "Conflict, Security and the Extractive Industries in Turkana, Kenya," USIU-Africa/Kenya School of Government (2015).
[209] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya, P. 104
[210] Ministry of Energy and Petroleum, Draft National Energy and Petroleum Policy, June 16, 2015.
[211] Institute for Human Rights and Business, "Human Rights in Kenya's Extractive Sector: Exploring the Terrain," (2016) available at www.ihrb.org/focus-areas/commodities/human-rights-in-kenyas-extractive-sector-exploring-the-terrain.

Provisions on liability and compensation arising from oil pollution incidents are not adequate on the various legislations governing the petroleum sector in Kenya, especially those arising from offshore activities and trans-boundary related oil pollution incidents. The penalties in place are the imposition of up to 100,000 dollars or a jail term of 15 years for sabotage.

However, there are lower levels of penalties set out by administrative legislation and non-existence of punishment in the context of criminal law for damages caused by transboundary pollution. These are challenges also faced in Azerbaijan which is one of the oldest oil-producing countries in the world.[212]

The relevant laws of the petroleum sector should therefore incorporate these provisions, providing for strict administrative and criminal punishments to ensure efficient liability and compensation of environmental damages.

4.3.3 General insecurity in Turkana area

A number of security incidents have also occurred in the oil producing area of the country. A number of demonstrations, road blockages and attacks occurred in Lokichar. This led to the deployment of National Police Reservists (NPRs) and the Administration Police to exploration sites, bases and as escorts for survey teams for which they are paid an added allowance.[213]

However, some members of the local communities living in oil exploration areas felt that the NPRs unit has prioritized protection of oil exploration installations at the expense of protecting them from criminals like cattle rustlers, bandits and militia from neighbouring communities or

[212] Ramil Gasimov, "Challenges to the legal framework governing liability and compensation for oil pollution in the Caspian Sea: the case of the Republic of Azerbaijan" (2018) World Maritime University Dissertations, 665.
[213] Kennedy Mkutu and Gerard Wandera, "Conflict, Security and the Extractive Industries in Turkana, Kenya," USIU-Africa/Kenya School of Government (2015).

countries.[214] As such, the communities in Turkana are left vulnerable to attacks. For instance, there have been several reports from Turkana citing that the residents are often forced to converge on the oil rig sites in an attempt to gain protection during inter-community raids.[215] Furthermore, there is a general lack of control over NPRs especially in terms of mandate and firearms regulation.

This justifies and illustrates the need for establishment of a comprehensive policy and strategic plans in ensuring the security of both the local communities and upstream installations.[216] The draft energy policy requires the government to institute appropriate and innovative ways of enhancing security and surveillance of energy and petroleum infrastructure.[217] The draft policy also mandates the government to classify strategic energy installations such as oil and gas fields, coal mines, refineries, jetties, pipeline systems, petroleum, storage facilities as protected areas and provide security during construction and operation.[218]

Additionally, the draft policy provides that the government should enhance its security strategy to ensure adequate security personnel and resources are assigned to both local communities and oil and gas installations, for sustainability of the petroleum sector.[219] As had been stated earlier, this draft policy has not yet been enacted and implemented.

Historical conflicts and differences between the Pokot and Turkana over scarce resources have threatened to resurface with the discovery of oil in Turkana.[220] The militarization of these ethnic

[214] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya, P. 108.
[215] Ibid.
[216] Ibid.
[217] Ministry of Energy and Petroleum, Draft National Energy and Petroleum Policy, June 16, 2015.
[218] Ibid at P. 41.
[219] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya, P. 209.
[220] Ibid at P. 123.

conflicts and cattle raids due to easy access to illicit firearms have escalated cattle raiding and the intensity of associated violence which have caused significant insecurity in the area.

The relevant laws should therefore include provisions that will prevent insecurity in the area especially between these two communities. This will ensure that community safety audits are carried out and focus is not only on oil security but includes the wider Turkana communities. This could therefore address and eradicate the current fear of external attacks and conflicts.[221]

4.3.4 Skills Gap in the Petroleum Sector in Kenya

The major gap in the petroleum sector in Kenya is the lack of skilled workers and capacity to work in the oil industry. The number of skilled workers therefore does not match the sector' needs. The size of the skill gap is however unknown since a comprehensive study has not been done to determine the size.

The limited amount of skilled workers may lead to tension between the national and county governments as other Kenyan companies and non-Turkana labour move into the region and take up jobs meant for the local community.[222] This can lead to uneven distribution of jobs in the country which can ultimately lead to hostilities between the local community and employees from other regions of the country. There is therefore need for training of the members of the local community in Turkana to be conversant with the petroleum sector.

Furthermore, even the most basic skill level, also known as unskilled labour, requires an individual to have some minimum skills such as relevant language comprehension, literacy and

[221] Kennedy Mkutu and Gerard Wandera, "Conflict, Security and the Extractive Industries in Turkana, Kenya," USIU-Africa/Kenya School of Government (2015).
[222] Ibid

numeracy skills and health and safety conscious workforce behaviours as prerequisites.[223] This skill set is still quite low in Turkana.

Conversely, some of the skill sets present do not match with the skills required in the petroleum sector or are inadequate.[224] This situation might therefore lead to the surge of skilled workers from regions in Kenya outside of Turkana. This situation may then ultimately lead to disagreements and conflicts from the two groups which will ultimately lead to insecurity in the region.

To address this challenge, more specialized training centers should be established especially in Turkana. Onsite and offsite training and even simulations especially on safety and security should be done regularly and documented. The government should also collaborate with private sector players to implement the capacity building initiatives to support the petroleum sector. This should also be reflected in the various legal instruments covering this sector.

4.3.5 Political Gaps in the Petroleum Sector in Kenya

Any business activity involving the petroleum sector of any society is inherently political. Studies have shown that countries with large oil industries are prone to protracted internal conflicts. This is because oil disrupts economies owing to a cycle of 'booms' and 'busts' that then leads to political instability.[225] This is more so very true in Kenya where the discovery of oil in Turkana has been a highly political affair in the region and nationally as well. There have been numerous discussions for example, on revenue allocation and sharing among the national

[223] Hudson Mtegha and Pietro Toigo, "Leveraging Extractive Industries for Skills Development to Maximize Sustainable Growth and Employment," (Flagship Report Paper Series 2015)
[224] Ibid at 19.
[225] Ross M, 'What do we know about Natural Resource Curse? A literature review, Working Paper 268, Institute of Development Studies, University of Sussex.

government, the local government and the community which led to the delay of oil exploration in the region.

Turkana has had a long history of poor relations with the Kenyan state since colonial times. The region has been highly marginalized and deprived of resources in comparison with other counties in the country. As such, the people in the area do not strongly identify themselves with the Kenyan state. If the government then appears to favour the interests of the investor over that of the local communities, there could be a strong resistance against the state and potentially to the uniting of the various ethnic communities in the region.

Deep rooted inequalities in the Turkana region permeate to political participation and to the provision of justice. These inequalities pose a challenge to the development of the area. There is also regional political risk from un-demarcated and porous international borders between Kenya and its neighbours. Also, there have been several discoveries of oil and gas in the East African region which could trigger territorial disputes Somalia and Kenya are in dispute over maritime border claims of some offshore concessions. Such disputes may arise onshore if oil exploration in Turkana reaches the disputed Ilemi Triangle between Kenya, South Sudan and Ethiopia.[226] The area covers a 10,300 square kilometre area whose boundary was not clearly demarcated.

The relevant laws should therefore provide for provisions that will govern political and border disputes arising from oil production and exploration. This will ensure security over the region is established.

[226] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya, 2016, at 121.

4.3.6 **Inadequate Funding of Regulatory Agencies**

Inadequate funding of regulatory agencies of the petroleum sector is a common factor in oil producing countries in Africa. It is a problem experienced in Nigeria which leads to poor enforcement.[227] The Government should allocate enough resources to the relevant stakeholders to ensure that there is effective clean up procedures. This is through availing of more equipment and responders for oil spill preparedness especially in areas outside Nairobi and Mombasa such as Turkana. Retaining costs of trained emergency respondents are usually not met and during emergencies, logistics enhance delays of their availability resulting to heavy losses.[228] Proper co-ordination and collaboration of the various agencies as well as clear chain of commands in oil spill response are therefore provisions lacking in the petroleum laws.[229]

Additionally, laboratories for alternative testing and probing are not situated near operating points. The Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector indicates that the closest accredited water testing facility to Lokichar by Water Resources Management Authority is located in Kakamega, a town that is more than 200 kilometres from Lokichar by road.

The inadequate human and financial resources by the regulatory agencies will in most cases affect the coordination of responses to safety and security measures in the oil producing areas. The National Police Service has in the past cited inadequate personnel in the Turkana area as a factor inhibiting effective response to insecurity. With a critical resource such as oil, the need to

[227] Ambisisi Ambituuni, Jaime Amezaga, Engoboh Emeseh, Analysis of Safety and Environmental Regulations for Downstream Petroleum Industry Operations in Nigeria: Problems and Prospects, Environmental Development (2013) available at http://dx.doi.org/10.1016/j.envdev.2013.12.002.
[228] Draft Report for the Strategic Environmental and Social Assessment for the Petroleum Sector in Kenya, P. 139.
[229] StellaMaris Muthike, 'Assessment of Kenya's Capacity to Effectively Prepare for and Respond to Oil Spill Incidents,' (Dissertation, World Maritime University, 2018).

ensure that the enforcement agencies such as the National Police Service are capable of ensuring security in the area is paramount.

4.3.7 Conclusion

This chapter has established that there are a number of security gaps in the petroleum sector in Kenya. These range from inexistent effective avenues for public participation, respect for communal values, provision of schemes for compensation of host and impacted communities, legalization of the outcome of dialogue processes and the safety and security of workers in oil rigs due to attacks by criminal gangs due to inadequate security measures. The chapter has also recommended reforms to be made in the existing petroleum laws to ensure that the gaps discussed are addressed. As already noted, an integrated approach to petroleum exploration and management is necessary. This therefore calls for the collaboration between stakeholders local communities to ensure security in the area.The chapter also notes the need to enhance the capacity of the security forces to respond to security threats in the oil procuring areas.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS ON SAFETY AND SECURITY IN THE PETROLEUM SECTOR IN KENYA

The first four chapters of this paper have endeavoured to discuss in sufficient detail the safety and security in Kenya's petroleum sector. The discussions trace their background in the discovery and commencement of commercial exploitation of petroleum in Turkana, Kenya.

Kenya's primordial oil exploration therefore calls for careful considerations of human safety and security which as the paper notes, encompasses the broad environmental, socio-cultural, economic and political considerations as well as an interplay with the legal framework.

As this paper notes in Chapter One, the Kenyan government retains access to the machineries regulatory and physical machinery that affect safety and security in the petroleum sector. The chapter also notes that the petroleum sector is a critical component in the Kenyan economy, with massive potential to impact on the standards of living and national security for not only the local residents of Turkana, but the nation as a whole. Despite the economic potential of petroleum, safety and security concerns need to be integrated in the legal and policy framework to lay down guidelines andobligations for the government and stakeholders in the petroleum industry. Chapter One of the paper also identified the main objectives of this paper as first, to study the legal and policy framework on safety and security in the petroleum sector in Kenya; secondly, to identify the gaps that exist in the legal and policy framework on safety and security in the petroleum sector in Kenya; and finally to analyse the international best practice on safety and security in the petroleum sector. The paper has discussed each of the key objectives in chapters two, three and four respectively.

As regards international best practice for safety and security in the oil sector, Chapter Two presents perspectives from the Nigeria, Russia and USA and highlights lessons for Kenya from each jurisdiction. For instance, in the US, environmental agencies performing almost similar roles have entered into a Memorandum of Understanding that sets out the responsibilities of each agency in order to avoid conflict of roles and interest. This has not been witnessed among the Kenyan competent agencies. The US experience also highlights that there are laws for various kinds of environmental damage with different liability regimes. Examples include the Clean Air

Act of 1963, the Clean Water Act of 1972, the Oil Pollution Act of 1990, the Federal Water Pollution Control Act of 1948, and the Outer Continental Shelf Lands Act of 1953.

Further, some US regulations have set minimum prevention systems that facilities must use, for example spill diversion ponds, retention ponds, sumps and collection systems, unlikePart VII of the Petroleum Act 2019 of Kenya which is not specific as to the preventive and response to oil spill measures to be undertaken by oil facility owners and operators.

The choice of Nigeria as Africa's leading oil exporter has further enriched Chapter Two and this paper. Nigeria boasts of an elaborate oil safety and security regime compared to Kenya and as such, provides a better comparative benchmark. The common challenges for Nigeria that Kenya could potentially face include vandalism of oil products, pipeline ruptures and accidents, pipeline damage and sabotage, illegal oil bunkering, oil terrorism and weak enforcement of laws. Like the US, Nigeria's legislative scope is much expanded and employs heftier criminal sanctions alongside civil penalties on violators of oil safety and security.

Finally, Chapter Two discusses Russia's experience that introduces the dimension of safety and security in the Arctic. Although not directly relatable to Kenya, Russia's legal framework with respect to safety of workers, environmental impact assessment and collaboration in protection of the petroleum environment hold some important lessons for Kenya. For instance, the penalty regime in Russia for violation of emission obligations are quite high and this could be one of the factors making regulatory regime efficient. Kenya can, in addition to enhancing penalties for environmental pollution in the petroleum sector, increase the monitoring of compliance and strict enforcement of the legal requirements.

Chapter Three of the paper has explored in detail the regulation of the Kenyan petroleum sector and discussed how the same is tailored towards the achievement a sustainable, safe and secure framework for the exploitation of petroleum as a resource. The chapter's analysis of the existing regulatory framework lay the foundation forenvironmental protection and safety in the petroleum sector.

The Chapter discusses key provisions on safety and security under the Kenyan 2010 Constitution and various legislation on the energy and energy resources (including the Energy Act 2019 and the Petroleum Act 2019) and related legislation that touch on natural resource use within the national and county governments. Broad concepts of 'environmental justice', and 'access to information' among others have thus been discussed within the context of the Kenyan constitution and statutes. The deliberation in Chapter Three highlights the prevailing legislative provisions as far as safety and security of the Kenyan petroleum sector is concerned and identifies the key changes brought about by the latest statutes; the Energy Act 2019 and the Petroleum Act 2019.

Like most of the sectoral laws on natural resources in Kenya, the Energy Act 2019 and the Petroleum Act 2019 that form the primary legislation on the Kenyan petroleum sector, incorporate the already discussed principles of environmental justice. These are applicable in almost uniform patterns in the management of petroleum resources as may be the case in forests, wildlife, water and other natural resources.

In conclusion, Chapter Three notes that ultimately, the residents in the areas of exploitation of petroleum such as Turkana face a greater risk than the larger Kenyan society from unregulated growth, ineffective regulation of toxins, and public policy decisions authorizing exploitation of petroleum. Consequently, the Chapter reiterates the need for stakeholders to make

environmentally sound decisions to avoid the ‘resource curse’ that may inevitably arise if the safety and security factors are not properly addressed. This can be achieved mostly by involving the local communities in the management of the oil resource.

Chapter Four on the other hand confirms that despitethe security mechanisms established by the various legal instruments and policy frameworks, little attention has been paid to the security dimensions in the Kenyan petroleum sector. From this proposition, Chapter Four proceeds to identify and discuss some of the key security gaps in the Kenyan petroleum sector from socio-economic, political, environmental and human spheres.

Importantly, Chapter Four identifies variousenvironmental impacts associated with technical activities of the entire lifecycle of the oil and gas industry which are exploration, drilling and extraction, transport, refining and combustion or use, and makes environmental and resource-friendly recommendations on how to address these. Additionally, the Chapter exposes the fundamental legislative gap in the safety and security regulation in Kenya as can be seen from the absence of emergency shutdown or clean-up systems in case of disruptive occurrences.

Another critical dimension with immense impact on safety and security is the question of revenue sharing. As Chapter Four notes, the debate on the revenue shares to the national, county governments and local communities is far from over. Some gaps still exist in the legal framework from the failure to address how local communities in oil exploration areas can directly benefit from local ownership of these explorations and operations. The dissatisfaction by local communities has for instance been seen from demonstrations against the oil operations or the attacks on oil infrastructure.

The compensation regime for harm caused by oil pollution or accidents is also not sufficiently captured in the Kenyan legal framework. Other gaps identified in Chapter Four include. Chapter Four concludes by recommending an integrated approach to petroleum exploration and management through the collaboration between stakeholders and data, information, and knowledge sharing.

In summary, this paper concludes by restating the need for Kenya's legal framework to make context-specific adjustments to incorporate some of the practices from oil-producing nations such as Nigeria. Apart from wide statutory coverage, this paper recommends strong enforcement and improved collaboration among the Kenyan environmental protection agencies and institutions on issues to do with safety and security in the petroleum sector. However, none of these will be meaningful if the primary concerns of the affected local communities are not addressed. Consequently, there is urgent need to integrate the local communities in the management of the oil resource from the exploration stage through training, employment and improvement if amenities- all through to the revenue-sharing phase where local communities are allocated meaningful revenues to compensate their exposure to environmental harm.

Additionally, the benefit sharing regime for Kenya needs to be set out in a legal framework and clear guidelines for implementation laid out. The Natural Resources (Benefit Sharing) Bill 2018 has been pending enactment since 2014. Despite this, the exploitation of oil in Turkana continues without any clear framework of implementing the revenue quotas proposed under the Petroleum Act 2019.

There is further need for harmony of the natural resources' legislation in Kenya. The recent draft Kenya Sovereign Wealth Fund Bill, 2019 should for instance, follow the fund management

structure recommended under the Natural Resources (Benefit Sharing) Bill 2018. Otherwise, several institutions (such as the Kenya Revenue Authority, the Commission on Revenue Authority and the Central Bank of Kenya) could be responsible for management of the sovereign wealth fund, further complicating the coordination for the benefit of local communities. To this end, the draft National Energy and Petroleum Policy 2015 should also be finalized and adopted to give clear policy direction to the responsible ministries.

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