

**THE NATIONAL ENVIRONMENTAL MANAGEMENT AUTHORITY'S
CAPACITY TO MANAGE AND CONTROL THE POTENTIAL
ENVIRONMENTAL IMPACT OF THE EMERGING OIL AND GAS SECTOR.**

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Degree**

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DISSERTATION DECLARATION FORM

I hereby certify that this dissertation is my original work. It has not been submitted for a degree in any other institution.

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This dissertation has been presented for examination with my approval as the University Supervisor.

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ABSTRACT

The purpose of this dissertation is to examine the capacity of Kenya's National Environmental Management Authority (NEMA) to manage the demands of the country's emerging upstream oil and gas industry. The need to analyze NEMA's capacity is a result of recently introduced legislation that now requires oversight of Integrated Environmental Impact Assessment (IEIA) over extractive projects by NEMA. This paper thus seeks to examine NEMA's capacity to comply with this change and comparatively analyzes the authority's managerial scope with that of Norway's Petroleum Safety Authority (NPSA) and its Petroleum Directorate (NPD), which is considered to be one of the world's leading institutions in the management of socio-environmental impacts stemming from extractive projects.

This paper uses research methodology based on comparative research, policy transfer and material from conducting interviews. The aspects scrutinized are the laws and policies required to ensure success in the Kenyan oil and gas industry as a result of prudent management of resources, emergency preparedness and proper safeguarding the external environment.

LIST OF ABBREVIATIONS

EA – Environmental Audit.

EIA – Environmental Impact Assessment.

EMCA – Environmental Management and Coordination Act.

EMS – Environmental Management Systems.

GDP – Gross Domestic Product.

HSE – Health Safety and Environment.

ICC – International Commercial Court.

IEIA – Integrated Environmental Management Systems.

IOC – International Oil Companies.

KEPTAP – Kenya Petroleum Technical Assistance Project.

NCS – Norwegian Continental Shelf.

NEMA – National Environmental Management Authority.

NOC – National Oil Companies.

NPD – Norwegian Petroleum Directorate.

NPSA – Norwegian Petroleum Safety Authority

SESA – Strategic Environmental and Social Assessment

UNCED – United Nation Conference Environment and Development

UNEP – United Nations Environmental Program

CHAPTER ONE: INTRODUCTION

1.1 Background

The economies of developing countries with valuable natural resources depend highly on their effective management in order to benefit the population as a whole and aim at achieving sustainable development.¹ However, resource-rich developing economies face various challenges, which inevitably impose obstacles that impede realisation and optimisation of revenues.² Extractive resource revenue management requires transparency and accountability in the entire value chain if benefits are to be utilised for sustainable development.³

Recently, there have been discoveries in Kenya of abundant and largely untapped non-renewable natural resource wealth which are expected to play a major role for development in the country.⁴ However, most of these discoveries are regarded to be in remote or marginalised areas (such as titanium and rare earths in Kwale, oil in Turkana and Lamu, among others). Collectively, they are expected to contribute substantially to the country's GDP. Oil specifically has been at the fore-front of these discoveries, and will form the main subject of analysis in this paper.⁵

The management of the environment when dealing with these natural resources is crucial. If environmental governance and laws are not well implemented, the state runs the risk of greatly increasing vulnerability to the people around the resource areas which already are prone to high risk.⁶

¹ Archine, A. K, 'Fiscal opportunities and challenges derived from the management of extractive resources revenues' *ECDPM Discussion Paper 151* (2013), VI.

² Archine, A. K, 'Fiscal opportunities and challenges derived from the management of extractive resources revenues' VI.

³ Archine, A. K, 'Fiscal opportunities and challenges derived from the management of extractive resources revenues' VI.

⁴ <http://ices.or.ke/sectors/oil-gas/> on 22 February 2014.

⁵ <http://ices.or.ke/sectors/oil-gas/> on 22 February 2014.

⁶ Swedish Environmental Protection Agency, 'The Role of Governance for Improved Environmental Outcomes Improved Environmental Outcomes' (2012), 11.

The exploration and production of oil and gas has potential to greatly impact the environment.⁷ The exploration of these commodities every so often threatens to not only destroy habitats but cause biodiversity loss and produce harmful air emissions.⁸ Various incidents and oil spills can affect the soil surface and result to groundwater contamination as well as marine and freshwater discharges.⁹

The safety of the environment is highly incorporated with that of the nature of societal health especially because the local population where the exploration takes place, normally is involved in agricultural practices.¹⁰ Therefore, so as to significantly reduce the negative effects of exploration operations on society, the environment and humanity itself, oil and gas stakeholders need to improve their practices and objectives to incorporate all of the costs associated with the environmental risks.¹¹

The Constitution of Kenya, 2010 in dealing with environmental and natural resources, states in Article 69(1) that it shall ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources and ensure the equitable sharing of the accruing benefits.¹² Further, it is the state's duty to establish systems of environmental impact assessment, environmental audit and monitoring of the environment whilst eliminating processes and activities that are likely to endanger the environment.¹³ The state has also the mandate to utilize the environment and natural resources for the benefit of the people of Kenya.¹⁴ These obligations can only be fulfilled through state organs.¹⁵

The National Environment Management Authority (NEMA) is a state organ established under the Environmental Management and Co-ordination Act, 1999 (EMCA).¹⁶ It is the Government's principal instrument for the implementation of all policies relating to

⁷ UNEP Technical Publication & E&P Forum, 'Environmental Management in Oil and Gas Exploration and Production; Overview of Issues' *Industry and Environment* [1997], 11.

⁸ Chevron Corporate Sustainability Report (2014).

⁹ Conner H, 'Managing Environmental Risk in the Oil and Gas Industry' 2015 (Thesis) Claremont Mckenna College, 2.

¹⁰ Conner H, 'Managing Environmental Risk in the Oil and Gas Industry', 2.

¹¹ Conner H, 'Managing Environmental Risk in the Oil and Gas Industry', 2.

¹² Article 69(1) (a) *Constitution of Kenya*, 2010.

¹³ Article 69(1) (f) (g) *Constitution of Kenya*, 2010.

¹⁴ Article 69(1) (g) *Constitution of Kenya*, 2010.

¹⁵ Article 69(2) *Constitution of Kenya*, 2010.

¹⁶ Section 7(1) *The Environmental Management and Co-Ordination Act(EMCA)*, 1999 no 8 Of 1999

environment.¹⁷ The authority regulates a vast area ranging from water, land, air, noise pollution to that of wetlands and waste management regulations.¹⁸ The Act of Parliament which came into force in 2000 establishes both a legal and institutional framework for the management of the Environment.¹⁹

1.2 Statement of the problem

The National Environmental Management Authority's lack of capacity to facilitate the management of the upstream oil and gas industry.

1.3 Justification of the study

The impact of exploration and production of oil and gas is highly dependent on the effectiveness of planning, pollution prevention as well as mitigation and control techniques.²⁰ These potential impacts can be minimized with the proactive involvement and the development of management systems.²¹ Further, it is vital that the host government fully understands what operations will be carried out and how they affect the environment in order to carry out these procedures with minimum adverse environmental impact.²²

With the recently amended legislative framework²³ NEMA has a role to not only transparently and objectively but to also expeditiously review the submitted IEIA reports as well as grant approval licenses.

This study aims to assist the Kenyan government and the management of NEMA address the latter's capacity and the country's preparedness in dealing with the environmental impact of

¹⁷ Section 9(1) *Environmental Management and Co-Ordination Act*, 1999 no 8 Of 1999.

¹⁸ <http://www.nema.go.ke/index.php/about-us/functions#> on 12 November 2015.

¹⁹ Section 42 (4) *Environmental Management and Co-Ordination Act*, 1999 no 8 of 1999.

²⁰ UNEP Technical Publication & E&P Forum, *Environmental Management in Oil and Gas Exploration and Production*, (1997) 11.

²¹ UNEP Technical Publication & E&P Forum, *Environmental Management in Oil and Gas Exploration and Production*, (1997) 11.

²² UNEP Technical Publication & E&P Forum, *Environmental Management in Oil and Gas Exploration and Production*, (1997) 27.

²³ The Environmental Management and Coordination (amendment) Act states that: The heading to Part VI of the principal Act is amended by deleting the words "Environmental Impact Assessment" and substituting therefore the words "Integrated Environmental Impact Assessment".

the upstream oil and gas sector. Additionally, policy makers seek to benefit from this research paper as they can obtain guidance when making policies relevant in this field.

1.4 Objectives of the study

The objective of the study is to analyze the National Environmental Management Authority's capacity to manage, control and oversee the potential environmental impact of the emerging oil and gas sector as well as examine various means of supplementing its role.

1.5 Literature Review

Dan Farber²⁴ brings into perspective the idea that various environmental laws and policies are incapable of anticipating and responding to catastrophic events.²⁵ A legal system ought to play a vital role in disaster prevention and response as well as management.²⁶ A system that encompasses disaster law would greatly benefit a state that is at risk of catastrophe. Therefore, disaster laws should be able to greatly benefit from environmental studies and scholarship as environmental law principles encompass determining seriousness and how much a state should invest in reducing those risks.²⁷ An excellent example Farber cites is that of the BP oil Spill which occurred in 2010. He concurs that;

*"The accident resulted from clear mistakes made in the first instance by BP, Halliburton, and Transocean, and by government officials who, relying too much on industry's assertions of the safety of their operations, failed to create and apply a program of regulatory oversight that would have properly minimized the risks of deep-water drilling."*²⁸

²⁴Jon Farber is a Professor of Law and chair of the Energy and Resources Group at University of California, Berkeley. He is cited as one of the most productive scholars of Environmental Law and Policy. See <http://www.thefacultylounge.org/2011/02/most-productive-environmental-law-scholars.html> on 20 January 2016.

²⁵ Daniel Farber, 'Navigating the Intersection of Environmental Law and Disaster Law', *Berkley Law Review* (2011), 1786.

²⁶ Daniel Farber, 'Navigating the Intersection of Environmental Law and Disaster Law', 1786.

²⁷ Daniel Farber, 'Navigating the Intersection of Environmental Law and Disaster Law', 1792.

²⁸ http://www.nytimes.com/2011/01/06/science/earth/06spill.html?_r=0 on 20 January 2016.

This research paper greatly envisions Faber's views especially in addressing potential failure of environmental regulation as well as negligence of private firms. The government should be in a position to efficiently serve as an oversight especially through mandated regulatory bodies. Environmental disasters destroy important amenities that can prove quite costly in a state and more often than not harm human interests. The essential role here is improving society's ability to cope with risk.²⁹

Additionally, Frank B. Friedman³⁰ argues that environmental management systems should not constitute guidelines but procedures which tend to ensure water-tight programs.³¹ Further, when the government is the only party to fully impose these systems, cost-effectiveness as well as integration may not be achieved.³² Management authorities ought to have facilities that are cable of ensuring compliance. Prioritizing resources must be encouraged as compliance is the natural endpoint of the way work is performed.³³ This paper does not delve into the procedures that have been adopted by NEMA but it does analyze Friedman's contribution of prioritizing resources to ensure full compliance by International Oil Companies (IOC's) and all relevant stake holders in the oil and gas sector.

Karg Karma discusses how the interface between the extractive industries and local communities is of growing academic interest.³⁴ The devastating impacts of oil and gas exploitation on indigenous livelihoods are widely recognized but the ways in which the interaction between the local communities and other stakeholders is mutually understood and governed, have gained much less scholarly attention.³⁵ Further, Frynas J.G states how petroleum companies have begun to advance instruments so as to manage their community relations with a view to secure access to oil-reserves, to manage risks that arise from local

²⁹ Daniel Farber, 'Navigating the Intersection of Environmental Law and Disaster Law', 1814.

³⁰ Frank Friedman is an environmental, health and safety professional with a breadth of experience of nearly 45 years. He is an internationally recognized expert in developing and rapidly implementing leading edge EHS programs. He authored the book '*Practical Guide to Environmental Management*'.

³¹ Friedman B.F, '*Practical Guide to Environmental Management*' Environmental Law Institute, 10th Edition (2006) 216.

³² Friedman B.F, '*Practical Guide to Environmental Management*', 214.

³³ Friedman B.F, '*Practical Guide to Environmental Management*', 217.

³⁴ Karma K, 'Spaces of Indigeneity within the West Siberian Oil Industry: The Case of Salyem Petroleum Development', *University of Oxford Centre for the Environment* pg. 5

³⁵ Karma K, 'Spaces of Indigeneity within the West Siberian Oil Industry: The Case of Salyem Petroleum Development', 5.

opposition and to make their ethical conduct visible to the international community.³⁶ These point of views are critical as a basis of the discussion of IEIA's. The consideration of local communities' rights as well as maintaining constructive relationships with IOC's is quite principal in enhancing compliance of environmental procedures.

1.6 Scope of the study

The research paper will discuss the vital need to expand NEMA's capacity as a management authority in light of the expected environmental challenges of the oil and gas sector. The paper will also analyze Norway as a best practice country by examining Norway's Petroleum Safety Authority (NPS) and its Petroleum Directorate (NPD). Finally, the study will assess various means in which the Kenyan government can aid in supplementing NEMA's mandate so as to ensure that potential environmental impacts are minimized. The study took approximately three months in total.

1.7 Research Methodology

1. Library Research

The research shall constitute material accessed in both private and public libraries. Analysis will be done by acquires case law books, textbooks, statutes, journals, articles, reports and any relevant material acquired.

2. Electronic Sources

Internet will be intensely employed by visiting various websites as well as the online libraries that will constitute relevant petroleum management materials as well as online articles, journals and reports.

3. Field Research

Field research will be conducted using interviews.

- Interviews.

³⁶ Frynas, J. G. 'The False Developmental Promise of Corporate Social Responsibility: Evidence from Multinational Oil Companies,' *International Affairs*, (2005) 581–598.

The research paper contains material that was gathered through conducting interviews with various NEMA officials. The method will entail using both structured and unstructured interviews. The structured interviews are based on the schedule based on the viewpoints of NEMA on the implementation of the new laws requiring them to carry out integrated environmental impact assessment and their capacity to actually carry out that mandate.

4. Comparative Research

The research paper will analyze, though limitedly, some aspects of the Norway's Petroleum Safety Authority (NPSA) and its Petroleum Directorate (NPD). The scope of analysis will be based on the managerial scope of these two institutions.

1.8 Limitations

This study faced the following limitations;

- (i) Time constraints due to the limited period this research was carried out.
- (ii) Accessing adequate financial data and legal documents from NEMA.
- (iii) Accessing local material on IEIA's.
- (iv) Accessing material on the Norwegian Model.

1.9 Chapter Breakdown

- (i) The chapters of the research paper are summarily as follows;
- (ii) Chapter two analyses the theoretical framework that this the back bone of the study as well as the research methodology used to carry out the research.
- (iii) Chapter three illustrates the legal framework of Kenya with regard to environmental management on oil and gas.
- (iv) Chapter four explores the Norwegian structure on environmental management in the oil and gas sector.
- (v) Chapter five concludes this research whilst giving recommendations.

CHAPTER TWO: THEORETICAL FRAMEWORK

2.1 Introduction

This chapter expounds on the theoretical framework of the dissertation. The objective is to study and analyze the utilitarian theory and conceptualize environmental management of oil and gas with reference to managerial bodies. This section will also briefly examine calamities that have occurred in the petroleum exploitation as a result of poor environmental management techniques.

2.2 Utilitarian Theory

The ethical underpinning that surrounds the above referenced theory asserts that the rightness of an act depends entirely on the maximization of overall wellbeing.³⁷ This theory ascribes to form of consequentialism, that is, the consequence produced will determine the right action.³⁸ One of the pillars of a utilitarian definition is maximization. This is the view that the value of state of affairs ought to be made to be as great as possible.³⁹ Jeremy Bentham in '*An Introduction to the Principles of Morals and Legislation*'⁴⁰ attempted to formulate his principle more specifically by stating;

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

³⁷ Eggleston B, '*Utilitarianism*' *Encyclopedia of Applied Ethics*, Second Edition, (2012), Vol. 4, 452-458.

³⁸ Stanford Encyclopedia of Philosophy. <http://plato.stanford.edu/entries/utilitarianism-history/> on 20 January 2016.

³⁹ Eggleston B, '*Utilitarianism*', 452-458.

⁴⁰ Burns H.J, 'Happiness and Utility: Jeremy Bentham's Equation', *Cambridge University Press* Vol. 17, No. 1, (2005) 48.

Jeremy Bentham further invoked what he described as a ‘fundamental axiom ‘*of the greatest good for the greatest number*’, a statement that is frequently associated with this theory.⁴¹ Additionally, actions that are right in proportion tend to promote happiness which is the presence of intended pleasure and the absence of pain.⁴² Although constantly criticized for his rejection of natural law and subjective values, his profound thoughts on law reform and social welfare provided a directive to the law makers on the welfare of society.⁴³

This study seeks to mirror in on research based on this fundamental legal theory. In analyzing the different legislations put out by the state and affecting oil and gas environmental management, it is paramount to assess the impact (or lack thereof) that policies have on the people directly and indirectly affected by it. In addition, the state is primarily responsible for asserting the utility principle. Bentham does indeed posit that the proper mode of government (which would create the greatness happiness of all) is one that ascribes to declaration of good will and peace to all men.⁴⁴

The government plays a considerable role in not only setting but enforcing regulations with the aim of minimizing the potential petroleum environmental impact.⁴⁵ It is of utmost importance that the government, through its regulatory powers, dispense with the old modes of regulation of command and control tactics but on the contrary initiate innovative and environmental management effectiveness.⁴⁶ The expectation being that the resolve taken will align to the greatest good for the greatest number principle.

2.3 Environmental Management

The concept of the environment is narrowly understood to mean only the flora and fauna.⁴⁷ The environmental model is however quite expansive. It refers to all interactions that link different all these components including tangible resources as well as issues that result from

⁴¹ Burns H.J, ‘Happiness and Utility: Jeremy Bentham’s Equation, 46.

⁴² Mill S.J, *Utilitarianism*, Batoche Books ,2001, 12.

⁴³ Freeman M., *Introduction to Jurisprudence’ Ninth Edition*, Thomson Reuters Publishers, 2014, 197.

⁴⁴ Burns H.J, ‘Happiness and Utility: Jeremy Bentham’s Equation, 53.

⁴⁵ UNEP Technical Publication & E&P Forum, ‘*Environmental Management in Oil and Gas Exploration and Production*, 1.

⁴⁶ UNEP Technical Publication & E&P Forum, ‘*Environmental Management in Oil and Gas Exploration and Production*, 1.

⁴⁷UNEP, ‘*A Guide to Afghanistan’s 2007 Environmental law*’ (2007) 4.

mismanagement of the same.⁴⁸ Conservation of the environment and its protection is mostly based on grounds of cultural, spiritual, economic, social but also scientific benefits.⁴⁹

The term environmental management is defined as the process in which organizations or the government applies various techniques, whether publicly or privately, to ensure maintenance or enhancement of environmental quality.⁵⁰ Further, for the purposes of this study, the definition extends to the responsibilities, processes and resources of an organization that aid in implementing, catering for and maintaining environmental management.⁵¹

Alternatively, earlier in the seventeenth century, the common law courts adopted a Latin maxim *sic utere tuo ut alienum non laedas* meaning that every man must use his own and not cause harm to another.⁵² Any action that foreseeably or actually causes harm to the commons is a public nuisance.⁵³ It is at this point that a state steps in to ensure compliance.

Environmental matters require international cooperation as no one country can single-handedly protect the environment.⁵⁴ When it comes to the exploitation of natural resources, the context of environmental problems ought to go beyond strict environmental management systems and link matters of individual responsibility and historical patterns.⁵⁵ When approaching an environmental management study it's imperative to ascribe to the various aspects of an organization from its intelligible form that basically entails organizing and disseminating information to the complexities that may surround its regulatory scope.⁵⁶ Additionally, all aspects such as training, managing risks as well as emergency planning must be all constituted in the environmental management.⁵⁷

⁴⁸ UNEP, 'A Guide to Afghanistan's 2007 Environmental Law' (2007) 4.

⁴⁹ Bell S., Pedersen O., McGillivray D., 'Environmental Law,' Oxford University Press, 8th Edition, 2013, 718.

⁵⁰ Lovei M. and Weiss C. Environmental Management and Institutions in OECD Countries. *World Bank Technical paper no. 391* (1998) section 3.1.

⁵¹ Washington State Department of Ecology, 'Environmental Management System (EMS) Alternative to Pollution Prevention Planning' *Washington State Department of Ecology Hazardous Waste and Toxics Reduction Program* (1997) 5.

⁵² Percival R. and Schroeder C, 'Environmental Law; Statutory and Case Supplement with Internet Guide' *Aspen Publishers* (2005) xi.

⁵³ Percival R. and Schroeder C, 'Environmental Law; Statutory and Case Supplement with Internet Guide' *Aspen Publishers* (2005) xi.

⁵⁴ Cullet P, 'Differential Treatment in International Environmental Law' *Ashgate Publishers* (2003) 5.

⁵⁵ Banuri Tariq, *Setting the Stage: Climate change and Sustainable Development* *Climate Change 2001-Mitigation 73 Cambridge University Press.*

⁵⁶ Walters S., 'Environmental Management Systems' *Pollution Prevention Institute* (1998) 2.

⁵⁷ Walters S., 'Environmental Management Systems', *Pollution Prevention Institute* (1998) 2.

One of the most effective ways of integrating environmental concerns is through establishing a well constituted environmental management system (EMS).⁵⁸ This system is intended to identify the impacts that result from carrying out business activities and to improve its environmental performance.⁵⁹ Unfortunately, organizations that have the mandate to carry out the implementation processes may not always have resources so as to successfully carry out respective projects.⁶⁰

The 'Earth Summit', a conference held by the United Nations Conference on Environment and Development (UNCED) in 1992, prioritized the world's attention to the interconnection between the environment and socio-economic development.⁶¹ Through Agenda 21⁶² the various environmental issues faced by exploration and production of oil have significantly been addressed both in the international and local sphere.⁶³

2.4 A focus on the Oil and Gas Industry

Energy is essential in expanding the global economy as it serves as a vital commodity on earth.⁶⁴ Consequently, as a result of global population growth there is a large energy demand which evident comes with high risks and costs for both the society and the environment.⁶⁵ Various number of operations across the world are oil and gas linked.⁶⁶ It not only represents one of the major energy sources but also serves as feedstock for several consumer goods.⁶⁷

⁵⁸ Rendell E., 'Environmental Management Systems', *A Guidebook for Improving Energy and Environmental Performance in Local Government* (2004) 12.

⁵⁹ Australian Government, 'Environmental Management System Tool' *Department of the Environment, Water, heritage and the Arts* 5.

⁶⁰ Rendell E., 'Environmental Management Systems'.

⁶¹ UNEP Technical Publication & E&P Forum, '*Environmental Management in Oil and Gas Exploration and Production: An Overview of Issues*' (2007) 2.

⁶² Sustainable Development Knowledge Platform

<https://sustainabledevelopment.un.org/outcomedocuments/agenda21> on 20 February 2016).

⁶³ UNEP Technical Publication & E&P Forum, '*Environmental Management in Oil and Gas Exploration and Production: An Overview of Issues*' (2007) 3.

⁶⁴ Kharaka YK and Dorsey NS, 'Environmental Issues of Petroleum Exploration and Production: Introduction' *Environmental Geosciences* 61(2005) 61.

⁶⁵ Conner H, 'Managing Environmental Risk in the Oil and Gas Industry' 1.

⁶⁶ Conner H, 'Managing Environmental Risk in the Oil and Gas' 1.

⁶⁷ Mariano JB and La Rovere EL, 'Environmental Impacts of the Oil Industry' *Encyclopaedia of Life Support Systems* 1.

The exploration and production of petroleum is however detrimental to the ecosystem.⁶⁸ Exploration of oil and gas reserves will almost always have ecological side effects.⁶⁹ Its potential for hazards, majorly through pollution, impacts various environmental echelons ranging from air, water, soil to biodiversity loss and ecosystem destruction.⁷⁰ Oil refineries, for example, are prime polluters. They consume significant amounts of energy and water and subsequently produce large quantities of wastewaters and solid waste.⁷¹

The 1992 Rio Declaration does not particularly address natural resources but Principle 8 does state the need to reduce and eliminate unsustainable patterns of production and consumption.⁷² In order to understand the potential impacts that may arise in the oil and gas sector, it's paramount that this study briefly outlines the major processes that occur in oil development.⁷³

2.4 1 Exploration & Drilling

When hydrocarbons that comprise oil and natural gas liquids occur concentrated beneath the earth's surface, the process of the kind of production is termed as onshore. If it is situated or occurring under the ocean surface, the production then becomes offshore.⁷⁴ The first stage of the process is exploration. This entails searching for hydrocarbon-bearing rock formations.⁷⁵ Various engineering models such as 3D seismic data collection, magnetic method and gravimetric method are used in the assessing and planning of the extraction.⁷⁶

Once a potential geological structure has been identified, the only way to confirm the presence of oil as well as the internal pressure is through a drilling process.⁷⁷ The exploration drilling

⁶⁸ Kharaka YK and Dorsey NS, 'Environmental Issues of Petroleum Exploration and Production: Introduction' *Environmental Geosciences* 61(2005) 61.

⁶⁹ UNEP Technical Publication & E&P Forum, 'Environmental Management in Oil and Gas Exploration and Production', 1.

⁷⁰ Mariano JB and La Rovere EL, 'Environmental Impacts of the Oil Industry' 2.

⁷¹ Mariano JB and La Rovere EL, 'Environmental Impacts of the Oil Industry' 2.

⁷² Articles 2, 6, 8 and 10, *1992 Biological Diversity of Convention*.

See also Boyle A, Birnie P. 'International Law & the Environment' Third Edition, Oxford University Press, 2009, 191.

⁷³ Mariano JB and La Rovere EL, 'Environmental Impacts of the Oil Industry' 2.

⁷⁴ British Geological Survey, 'Onshore Oil and Gas', *Natural Environment Research Council* (2011) 1.

⁷⁵ Devold H, 'Oil and Gas Production Handbook' *ATPA Oil and Gas* (2006) 21.

⁷⁶ Devold H, 'Oil and Gas Production Handbook', 21.

⁷⁷ UNEP Technical Publication & E&P Forum, 'Environmental Management in Oil and Gas Exploration and Production', 4.

involves the cutting of the earth's surface with the intention of bringing up a core sample of that portion of earth.⁷⁸

2.4.2 Development and Production

When the size of the oil field is established the subsequent wells drilled are termed as the⁷⁹ development or production wells. Permanent structures and production developments are necessary to facilitate this process. At this stage, the oil extracted is additionally separated from inert matter or impurities.⁸⁰ Routine operations on safety and security are frequently carried out in this stage as the fields are at this point susceptible to potential danger.⁸¹ A major difference in this part of the process is that the temporary stuff in the exploration process is now replaced with permanent employment.⁸²

2.4.3 Decommissioning

At this stage, the commercial life of onshore production comes to an end. In many instances, most exploration wells will be unsuccessful.⁸³ It's integral to plan this from the onset as decommissioning is quite an expensive process.⁸⁴

2.5 Major Potential Environmental Impacts

Prior to any environmental impact as a consequence of oil and gas extraction, the activities associated with exploration phase will inevitably also have an environmental effect.⁸⁵ These impacts are as listed below.

⁷⁸ British Geological Survey, 'Onshore Oil and Gas', *Natural Environment Research Council* (2011) 11.

⁷⁹ UNEP Technical Publication & E&P Forum, '*Environmental Management in Oil and Gas Exploration and Production*', 9.

⁸⁰ <https://data.oecd.org/energy/crude-oil-production.htm> 25 January 2016.

⁸¹ UNEP Technical Publication & E&P Forum, '*Environmental Management in Oil and Gas Exploration and Production*', 9.

⁸² UNEP Technical Publication & E&P Forum, '*Environmental Management in Oil and Gas Exploration and Production*', 10.

⁸³ UNEP Technical Publication & E&P Forum, '*Environmental Management in Oil and Gas Exploration and Production*', 9.

⁸⁴ <http://oilandgasuk.co.uk/decommissioning.cfm> on 25 January 2016).

⁸⁵ Gordon G, Paterson J, Usenmez E, '*Oil and Gas Law; Current Practice and Emerging Trends*', Dundee University Press, 2nd Edition, 2011, 251.

1. Water contamination as a result of discharge of water effluents resulting in saline pollution as well as soil, surface and groundwater contamination resulting from the chemical industry processes.⁸⁶
2. Loss of wildlife habitat as vegetative and topsoil as interfered with. Further, there is a reduction in plant diversity and potential for increased erosion.⁸⁷
3. Terrestrial impacts such as the physical disturbance as a result of construction as in addition to the contamination from spillage and leakage of solid waste disposal.⁸⁸
4. Oil spills, leaks, fires and explosion of plants in addition to emission of sulfur and nitrogen oxides⁸⁹

These are only but a few of the potential impacts. The significance of the impacts are dependent on various factors such a size of wells, the amount of land allocated to drilling and the field's location with respect to other resources.⁹⁰

2.6 Environmental Oil & Gas disasters

The analysis above is not simply theoretical or for environmental skeptics, mere conjecture. There have been past disasters in the sector that have had an adverse impact on the environment. These catastrophes have varied from oil spills, accidents and fires, pollution as well as damaged land. This section will discuss two major calamities, that is, the Lago Agrio Oil field accident in Latin America (onshore) and the Deep water Horizon Oil spill (offshore) in the Gulf of Mexico.

2.6.1 The Lago Agrio Oil Field

The Lago Agrio oil field is an oil rich area in Ecuador. In 1964, Texaco Petroleum Company began exploring for oil in the area which was then inhabited only by indigenous people. Over

⁸⁶ Mariano JB and La Rovere EL, 'Environmental Impacts of the Oil Industry', 2.

⁸⁷ <http://teeic.indianaffairs.gov/er/oilgas/impact/drilldev/index.htm> on 25 January 2016).

⁸⁸ UNEP Technical Publication & E&P Forum, 'Environmental Management in Oil and Gas Exploration and Production', 14.

⁸⁹ Mariano JB and La Rovere EL, 'Environmental Impacts of the Oil Industry' 4.

⁹⁰ <http://teeic.indianaffairs.gov/er/oilgas/impact/> on 25 January 2016).

a period of 20 years, the Lago Agrio field produced 1.7 billion barrels of oil with a profit of \$25 billion.⁹¹

As the oil boom came to an end, it was discovered that there remained as many as 16 million gallons of spilled crude oil and an approximate 18 billion gallons of produced water had been diverted into open pits. This water contained polycyclic aromatic hydrocarbons at immensely high levels.⁹² Various environmental activists blame these pollutants for present-day contamination of the water supply and an increase in cancer cases in the region.⁹³ The oil pollution in Ecuador was characterized as “one of the largest environmental disasters in history” by Rainforest Action Network, 10 May 2010.⁹⁴

These discoveries led to various court battles with the litigation process against Texaco by the people of Lago Agrio first commencing in 1993, when Maria Aguinda Salazar and others filed a putative class action lawsuit but which was later dismissed.⁹⁵ The centerpiece of the Lago Agrio litigation is an \$18.2 billion judgment issued on February 14, 2011, against Chevron by the Provincial Court of Justice of Sucumbíos in Ecuador.⁹⁶

During litigation, Texaco agreed to clean a number of waste and in exchange, the Ecuadorian government released Texaco from further liability.⁹⁷ This has been Texaco’s primary defence ongoing legal claims. The plaintiffs have sought the recognition and enforcement of this judgment in at least three jurisdictions outside of Ecuador resulting in a complex litigation suit.⁹⁸

⁹¹ <http://southamericaoilgas.com/lago-agrio-oil-field/> on 20 February 2016.

⁹² http://www.worldlibrary.org/articles/lago_agrio_oil_field on 20 February 2016.

⁹³ http://www.worldlibrary.org/articles/lago_agrio_oil_field on 20 February 2016.

⁹⁴ http://www.ran.org/top_oil_industry_analysts_say_it_s_time_for_chevron_to_settle_in_ecuador on 20 February 2016.

⁹⁵ *Aguinda v. Texaco Inc.*, 303 F.3d 470 (2d Cir. 2002).

⁹⁶ Manuel A. Gómez, ‘The Global Chase: Seeking the Recognition and Enforcement of the Lago Agrio Judgment Outside of Ecuador’, *Stanford Journal on Complex Litigation*. 1 (2013) 459.

⁹⁷ http://www.worldlibrary.org/articles/lago_agrio_oil_field on 20 February 2016,

⁹⁸ Manuel A. Gómez, ‘The Global Chase: Seeking the Recognition and Enforcement of the Lago Agrio Judgment Outside of Ecuador’, 430.

2.6.2 Deep water Horizon Oil Spill

In April 2010, there was uncontrolled flow of water, oil mud, oil, gas, and other materials which came out of the drilling riser of positioned drilling vessel named Deepwater Horizon. It was owned by Transocean and had been contracted by BP to drill the Macondo well, northern Gulf of Mexico offshore the coast of Louisiana.⁹⁹ During the time of the accident, the Deepwater Horizon (DWH) crew had finished drilling and was completing temporary abandonment of the well so that a production facility could return later to extract oil and gas from the well.¹⁰⁰

Subsequently, various explosions occurred and a huge fire followed persistently for two days. During the next 83 days, attempts were made to catch, contain, disperse, and stop the reservoir fluids from reaching the Gulf of Mexico. Unfortunately, all of plans and preparations for controlling, monitoring and mitigating the blowout repeatedly failed or were ineffective.¹⁰¹ Huge amounts of toxic fluids and gases from the Macondo well escaped into the open waters of the Gulf of Mexico. This disaster resulted in unprecedented occurrences in the history of offshore oil and gas.¹⁰²

One major failure was the fact that there were no effective safeguards in place that would enable minimization or elimination. The barriers that had been intended to prevent such a disaster had not been tested or properly maintained.¹⁰³ The consequence of this fatality was various critical injuries with the Deepwater Horizon rig sinking on April 22, 2010. It is estimated that 5 million barrels were spilled into the Gulf of Mexico.¹⁰⁴

The long term effects of ocean oil spills is quite uncertain and not even scientists understand the effects of the slow release of hydrocarbons over a period of years but effects are immensely

⁹⁹ DHSG, 'Final Report on the Investigation of the Macondo Well Blowout' *Center for Catastrophic Risk Management (CCRM)* (2010) 6.

¹⁰⁰ US Chemical Safety and Hazard Investigation Board 'Macondo-Specific Incident events: Relevant Background on Deepwater drilling and temporary abandonment,' *Investigation Report Volume 1.*(2014)

¹⁰¹ DHSG, 'Final Report on the Investigation of the Macondo Well Blowout' *Center for Catastrophic Risk* 8.

¹⁰² DHSG, 'Final Report on the Investigation of the Macondo Well Blowout' *Centre for Catastrophic Risk* 8.

¹⁰³ US Chemical Safety and Hazard Investigation Board 'Macondo-Specific Incident events: Relevant Background on Deepwater drilling and temporary abandonment,' *Investigation Report Volume 1.*(2014) 8

¹⁰⁴ US Chemical Safety and Hazard Investigation Board 'Macondo-Specific Incident events: Relevant Background on Deepwater drilling and temporary abandonment,' *Investigation Report Volume 1.* (2014) 31.

tragic.¹⁰⁵In sum, this paper posits that to avert these and other risks, which in turn have devastating effects on the environment, an oil-exploiting country must ensure proper regulatory oversight in all processes of exploration as well as standard guidelines for all stakeholders in the project.

¹⁰⁵ Guruswamy L, Palmer G., Weston B., *International Environmental Law and World Order* West Publishing Company 1994 585-586.

CHAPTER THREE: ANALYSING KENYA'S LEGAL FRAMEWORK ON ENVIRONMENTAL MANAGEMENT

3.1 Introduction

The enactment of the Constitution of Kenya, 2010 has received enormous praise as it signals a model of environmental progress.¹⁰⁶ The affirmation of a legal and institutional mechanism in a state is a critical basic tool to enforce environmental management.¹⁰⁷ As earlier illustrated, the recent exploration of oil and gas in Kenya brews a lot of concern for adverse environmental complications. To effectively enforce environmental management all stakeholders, more so the state, have to encompass various strategic tools. This chapter will assess the Kenyan legal framework on environment as well as delve into environmental management tools when dealing with the potential environmental hazards that arise in the oil and gas sector.

3.2 Kenya's Legal Framework.

The legal framework governing the oil and gas sector is spread in various statutes including the Constitution of Kenya, the Environmental Management and Coordination Act and the Petroleum (Exploration and Production) Act. Institutional mechanisms provided for in a state are basic conceptual tools for environmental management.¹⁰⁸ The legal framework is crucial in establishing a number of issues more so the approach to environmental management and determining the scope ascribed to NEMA.

¹⁰⁶ Mvenda A. and Kibutu T. N. 'Implications of the New Constitution on Environmental Management in Kenya' *Law, Environment and Development Journal* (2012) 78.

Available at <http://www.lead-journal.org/content/12076.pdf> on 20 February 2016).

¹⁰⁷ Mvenda A. and Kibutu T. N. 'Implications of the New Constitution on Environmental Management in Kenya' *Law, Environment and Development Journal* (2012) 79.

¹⁰⁸ Okidi, C.O., 'Environmental Rights and Duties in the Context of Management of Natural Resources,' *Nairobi Constitution of Kenya Review Commission*. (2003).

3.2.1 *The Constitution of Kenya 2010.*

The Constitution of Kenya prescribes public land to include mineral oils.¹⁰⁹ The Constitution further articulates the state's mandate with respect to the environment as well as the enforcement of environmental rights.¹¹⁰ A key feature in the Articles is the state's directive to ensure not only sustainable exploitation but the management of the environment.¹¹¹ Additionally, the state must establish systems of environmental impact assessment, audit as well as environmental monitoring.¹¹² Lastly, the Constitution gives power to parliament to enact any subsequent legislation to give full effect to all the mentioned provisions.¹¹³

3.2.2 *The Environmental Management and Coordination Act 1999 (EMCA)*

The establishment of the National Environment Management Authority (NEMA) is provided for in the Environmental Management and Coordination Act (EMCA).¹¹⁴ NEMA is a body corporate with perpetual succession and the power to enter contracts, sue, purchase.¹¹⁵ The Act, in section 9, elucidates various functions of the Authority. The primary purpose of the Authority is to exercise general supervision, coordinate environmental matters as well as serve as the principal instrument of the government in the implementation of all policies relating to the environment.¹¹⁶

This paper focuses on three main functions of the Authority encapsulated by EMCA. That is;

Section 7(2) (a)

*(a) Co-ordinate the various **environmental management activities** being undertaken by the lead agencies and promote the integration of environmental considerations into development policies, plans, programs and projects with a view to **ensuring the proper management** and rational utilization of environmental resources on a*

¹⁰⁹ Article 62 (e) *Constitution of Kenya* (2010).

See also Lumumba P.L.O and Franceschi L., *The Constitution of Kenya, 2010; An Introductory Commentary* Strathmore University Press 275-276.

¹¹⁰ Article 69 and 70 *Constitution of Kenya* (2010).

¹¹¹ Article 69 (1) (a) *Constitution of Kenya* (2010).

¹¹² Article 69 (1) (f) *Constitution of Kenya* (2010).

¹¹³ Article 72, *Constitution of Kenya* (2010).

¹¹⁴ Section 7(1), *The Environmental Management and Coordination Act* 2012.

¹¹⁵ Section 7(1), *The Environmental Management and Coordination Act* 2012.

¹¹⁶ Section 9(1), *The Environmental Management and Coordination Act* 2012

sustainable yield basis for the improvement of the quality of human life in Kenya.

[emphasis mine]

Section 7(2) (e)

(e) Carry out surveys which will assist in the proper management and conservation of the environment; [emphasis mine]

Section 7(2) 9f)

(f) Advise the Government on legislative and other measures for the management of the environment or the implementation of relevant international conventions, treaties and agreements in the field of environment, as the case may be. [Emphasis mine]

3.2.3 National Land Commission Act 2012.

The Constitution of Kenya prescribes that public land is to be managed by the National Land Commission. One of the primary functions of the National Land Commission is to manage public land on behalf of the national and county governments.¹¹⁷ As alluded earlier, mineral oils constitute public land. This creates overlapping responsibilities with specific regard to mineral oil management - a situation that can be potentially hazardous – given the potential environmental effects of the oil and gas sector.

3.3 Integrated Environmental Impact Assessment (IEIA)

The emergence of sustainable development whose three main pillars are social, economic and environment has resulted in practitioners responding through the introduction of IEIA during analysis.¹¹⁸ IEIA acknowledges the environment, human interactions as well as the impact they have on each other.¹¹⁹ It basically incorporates environmental assessment into the whole process of policy planning as well as developing the appropriate measure to assess existing

¹¹⁷ Section 5(1) *National Land Commission Act*.

¹¹⁸ Ambala C. and Ocholla W, 'Training Manual on Integrated Environmental Assessment and Reporting in Africa, *Africa Environment Outlook* (2006) 2.

¹¹⁹ Ambala C. and Ocholla W, 'Training Manual on Integrated Environmental Assessment and Reporting in Africa, *Africa Environment Outlook* (2006) 3.

and changing pressures and opportunities in the environment with the prime goal of progressive movement towards sustainable development.¹²⁰

Various developing countries with transitioning economies are attempting to strengthen and consolidate their Environmental Impact Assessment systems.¹²¹ These reforms are orchestrated due to a number of reasons. The current global trend of trade and capital investments leads to economic growth hence increasing environmental degradation and demonstrating the need for EIA.¹²² Principle 17 of the Rio Declaration on Environment and Development (1992) defines EIA as a national instrument which;

“...shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment”

Kenya has not been left behind. NEMA, with its various mandates illuminated above, will be carrying out a Strategic Environmental and Social Assessment commencing February 2016.¹²³ EMCA had its legislative framework amended from the term Environmental Impact Assessment (EIA) to currently Integrated Environmental Impact Assessment (IEIA).¹²⁴ The new provision raises quite a number of concerns for the investors as well as the communities especially considering that it's the investor mandate to carry out the IEIA.¹²⁵

Sustainable development, especially after the Rio Declaration¹²⁶, has become an accepted goal for many states.¹²⁷ Moreover, the primary goal of any environmental management is to maintain the quantity and improve the quality of natural resources with the aim of

¹²⁰ Ambala C. and Ocholla W, 'Training Manual on Integrated Environmental Assessment and Reporting in Africa, Africa Environment Outlook (2006) 3.

¹²¹ Lee, N. and George, C. Environmental Assessment in Developing and Transitional Countries. John Wiley, Chichester, UK. (2000).

¹²² UNEP, *Environmental Impact Assessment and Strategic Environmental Assessment: Towards and Integrated Approach* (2004) 11.

¹²³ World Bank. 2014. Kenya - Petroleum Technical Assistance Project: terms of reference for strategic environmental and social assessment for the oil and gas sector.

See also <http://documents.worldbank.org/curated/en/2014/07/19942264/kenya-petroleum-technical-assistance-project-terms-reference-strategic-environmental-social-assessment-oil-gas-sector> on 1 January 2016.

¹²⁴ The heading of Part IV of the principal Act is amended by the deletion of the words 'Environmental Impact Assessment' and replacing it with 'Integrated Environmental Impact Assessment (IEIA).

¹²⁵ Section 57 (a) (3) *The Environmental Management and Coordination (amendment) Act 2012*

¹²⁶ <http://www.unep.org/documents.multilingual/default.asp?documentid=78&articleid=1163> on 2 February 2016.

¹²⁷ Noorbakhsh F, 'Integrating Environmental Impact Assessment and Economic Appraisal in Project Planning,' *Department of Economics of the University of Glasgow 2.*

sustainability.¹²⁸ In order to enhance its mandate, environmental management authorities ought to evaluate the effects likely to arise from a major project.¹²⁹ The key objective is for the EIA process to traverse to sustainability.¹³⁰

Further, integration is an essential characteristic of impact assessment which entails the use of an inter-disciplinary approach to inform decision-making.¹³¹ An integrated approach is always considered a good hallmark of EIA practice.¹³²

3.4 Conducting Integrated Environmental Impact Assessment in the Oil and Gas Industry.

Despite the fact that the oil industry plays a vast role in today's society, it holds a major potential for hazards for the environment. The most widespread of the danger is pollution as it is virtually associated as a consequence in almost all stages of oil and gas production.¹³³

IEIAs are an important tool in enshrining standards especially within the context of land use planning.¹³⁴ In this particular sector, the IEIA process ought to be undertaken during the early stages of pre-project planning and continue throughout project feasibility and operations. This procedure, normally applicable through environmental legislation, requires adequate funding and thoroughly motivated enforcement authorities.¹³⁵ Further, there is need for suitable sanctions.

It's quite essential to note that this process should not be terminated before the whole project is completed. Therefore, in addition to the IEIA that is carried out prior to the commencement

¹²⁸ Noorbakhsh F, 'Integrating Environmental Impact Assessment and Economic Appraisal in Project Planning,' *Department of Economics of the University of Glasgow* 3.

¹²⁹ Noorbakhsh F, 'Integrating Environmental Impact Assessment and Economic Appraisal in Project Planning,' *Department of Economics of the University of Glasgow* 5.

¹³⁰ Noorbakhsh F, 'Integrating Environmental Impact Assessment and Economic Appraisal in Project Planning', 5.

¹³¹ UNEP, *Environmental Impact Assessment and Strategic Environmental Assessment: Towards and Integrated Approach* (2004) 11.

¹³² UNEP, *Environmental Impact Assessment and Strategic Environmental Assessment: Towards and Integrated Approach* (2004) 11.

¹³³ Barboza M.J, 'Environmental Impacts of The Oil Industry' *National Petroleum Agency of Brazil* 2.

¹³⁴ UNEP Technical Publication & E&P Forum, 'Environmental Management in Oil and Gas Exploration and Production', 25.

¹³⁵ UNEP Technical Publication & E&P Forum, 'Environmental Management in Oil and Gas Exploration and Production', 22.

of a project, there is need for monitoring regimes in the environmental management systems to carry out assessments through their life span.

Ideally, a state that hosts the oil and gas industry majorly faces these risks. Pollution, waste, non-compliance, monitoring expertise as well as need for an effective emergency response.¹³⁶ One major issue is that of water. When extracting either oil or gas, there is generally a high water usage and demand.¹³⁷ Competing needs often arise as agricultural needs as well industrial requirements increase the pressure on scarce regional water sources not to mention demands by pastoralist communities for water for their animals and basic human needs in remote regions such as Turkana where oil discoveries abound. Additionally, air emissions are a product of oil and gas production facilities focused on drilling and resource extraction.¹³⁸ Lastly, major effect on oil and gas activities is land use issues. Various number of land use-related activities and criticisms of production operations result from surface disturbance due to drilling, operations impacting on wildlife due to disturbance, and drill-waste treatment.¹³⁹ Through the IEIA, many of these risks can be averted therefore paving way for fiscal development instead of directing costs to cater for environmental disasters.

Nevertheless, despite potential threats to the environment, the oil industry has immense social benefits to local communities such as employment creation and the generation of significant volume of tax revenues to the state. By adopting proactive measures to curb environmental disasters the oil companies will likely make more profits.¹⁴⁰

Alternatively, having monitoring bodies helps meet compliance policies through audit.¹⁴¹ The International Chamber of Commerce (ICC)¹⁴² defines environmental audit (EA) as;

¹³⁶ UNEP Technical Publication & E&P Forum, 'Environmental Management in Oil and Gas Exploration and Production', 33.

¹³⁷ Sector Strategies, 'An assessment of the Environmental Implications of Oil and Gas production; *United States Environmental Protection* (2008) 2-13.

¹³⁸ Sector Strategies, 'An assessment of the Environmental Implications of Oil and Gas production; *United States Environmental Protection* (2008) 3-1.

¹³⁹ Sector Strategies, 'An assessment of the Environmental Implications of Oil and Gas production; *United States Environmental Protection* (2008) 2-18.

¹⁴⁰ Barboza M.J, 'Environmental Impacts of The Oil Industry' *National Petroleum Agency of Brazil* 2.

¹⁴¹ UNEP Technical Publication & E&P Forum, 'Environmental Management in Oil and Gas Exploration and Production an Overview of Issues and' [1997] *Industry and Environment* 34.

¹⁴² International Chamber of Commerce Paris, *Environmental Auditing* (1989).

' A management tool comprising systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of helping to safeguard the environment by facilitating management control of practices and assessing compliance with company policies, which would include meeting regulatory requirements. '

Although both EA and IEIA serve as environmental management tools, they are not one and the same thing. IEIA is *ex-ante*, that is, it takes place before an action is carried out while EA is *ex-post* meaning it is carried out when a project is already in place.¹⁴³ Therefore, IEIA is anticipatory which attempts to predict the impact of a future action on the environment whereas EA assesses what is currently happening when a project is being developed.

Prior to undertaking any project that is likely to impact the environment, a proponent of the same ought to undertake an IEIA, prepare a report and submit to NEMA.¹⁴⁴ The Authorities goal is to ensure that decisions on proposed projects are environmentally and economically sustainable.¹⁴⁵ NEMA then will consequently conduct an environmental audit which entails documentation, periodic as well as objective evaluation of activities that are going to be carried out by the project. The purpose is simply to ensure that the programs are aligned to the environmental management plan.¹⁴⁶

The World Bank Group found the Kenyan government unprepared to protect the environment in the emerging oil sector.¹⁴⁷ For example, leaders in Turkana are constantly raising concerns that the water supply in the area is quite limited and there is a high risk investors will channel the little that is left to oil production.¹⁴⁸ A key explanation is that the National Environmental

¹⁴³ http://www.soas.ac.uk/cedep-demos/000_P508_EAEMS_K3736-Demo/unit1/page_14.htm on 02 March 2016).

¹⁴⁴ <http://www.nema.go.ke/index.php/laws-and-guidelines/gazetted-regulations/environmental-regulations-eia-ea> on 02 February 2016.

¹⁴⁵ <http://www.nema.go.ke/index.php/laws-and-guidelines/gazetted-regulations/environmental-regulations-eia-ea> on 02 February 2016.

¹⁴⁶ <http://www.nema.go.ke/index.php/laws-and-guidelines/gazetted-regulations/environmental-regulations-eia-ea> on 02 February 2016.

¹⁴⁷ <http://landquest.internewskenya.org/environmental-impact-of-oil-drilling-a-mystery-to-citizens-and-civil-society/> on 02 February 2016.

¹⁴⁸ <http://landquest.internewskenya.org/environmental-impact-of-oil-drilling-a-mystery-to-citizens-and-civil-society/>

Authority is in dire need of more resources and training to amply carry out environmental oversight.

In addition to that, it is particularly germane that IEIA reports and grant approval licenses are reviewed in an objective, transparent and expeditious manner. Long bureaucratic delays and lack of transparency may discourage investors in the local oil and gas sector. This can be a huge blow to the economy as the oil and gas industry is very rewarding both to the government and its citizens.

CHAPTER FOUR: THE NORWEGIAN EXPERIENCE

4.1 Introduction

Exploration and production of petroleum occurs within a multifaceted regulatory program that ranges from fiscal, legal, and contractual systems, among others. These regimes not only control and directly manage the sector but also take responsibility in its development. Access to energy is integral to the development of the global economy as it is closely connected to national development and affluence.¹⁴⁹ Oil is one of most imperative commodities in international trade if measured by value.¹⁵⁰

This chapter analyses the history of petroleum exploration in Norway, the governing and regulatory bodies Norway encapsulates in its oil and gas sector. Oil and gas production in Norway has established high levels of competence,¹⁵¹ HSE and Industrial Policy and is regarded on of the best when it comes to transparency and accountability in hydrocarbons.¹⁵² It therefore carries key lessons.

4.2 Brief History of Petroleum in Norway

Only about fifty (50) years have passed since the discovery of petroleum deposits in Norway.¹⁵³ Its development and its management of natural resources are considered exemplary by the World Bank.¹⁵⁴ Prior to the discovery of oil, Norway had a strong economic growth and was therefore in no hurry to develop its petroleum resources.¹⁵⁵ This comfortable economic situation enabled Norway to have a strong bargaining position in relation to the international oil industry. They consequently could easily develop rational petroleum policies

¹⁴⁹ Storting White Paper 28, 'An industry for the future – Norway's petroleum activities', *unofficial translation of Chapter 1* (2010 – 2011) 7.

¹⁵⁰ Anders B. Høvik, 'Issues of Corporate Governance in the Relationship between the Norwegian Oil Companies and their Governmental Owner' *Master of Science Thesis ; Aarhus School of Business, Denmark* (2004) 6.

¹⁵¹ <https://www.norskoljeoggass.no/en/Publica/Guidelines/> on 25th February 2016.

¹⁵² George Wachira, <http://www.businessdailyafrica.com/Opinion-and-Analysis/Key-lessons-from-Norway-in-managing-oil-and-gas-resources/-/539548/1858954/-/a9cir5/-/index.html> on 25 February 2016.

¹⁵³ Storting White Paper 28, 'An industry for the future – Norway's petroleum activities'.

¹⁵⁴ OECD, *Economic Survey: Norway* (2005) 11.

¹⁵⁵ Hunter T, 'Review of the Australian Upstream Petroleum Sector' *Australian Productivity Position* (2009) 6.

that would meet the needs of all stakeholders including its citizenry and international investors.¹⁵⁶ Due to the importance of oil in international trade, the Norwegian State considered the domestic petroleum industry to be key in facilitating further economic growth and development of its society.¹⁵⁷

The Norwegian state acquired the right to explore and exploit petroleum deposits after stating its dominance over the continental shelf. In 1965, Norway, the United Kingdom and Denmark mutually agreed to apply the “median line principle”¹⁵⁸ to create maritime boundaries.¹⁵⁹

After the Ekofisk discovery in 1969, production in that field commenced that same year.¹⁶⁰ Exploration concentrated on the North Sea but eventually expanded North-wards. The areas that were most promising were explored first and huge fields subsequently dominated the petroleum industry.¹⁶¹ Foreign companies initially operated the petroleum activities but as the oil and gas fields developed, the Norwegian authority’s involvement increased with Statoil being established.¹⁶² In 1971, the Norwegian Parliament prepared a paper titled ‘*Exploration for and exploitation of subsea natural resources on the Norwegian Continental Shelf*’ which later came to be known as the “10 Oil Commandments”. These commandments summarily bring out the necessity of comprehensive petroleum policy as well as the importance of national management and control.¹⁶³ The petroleum resources of Norway belong to the Norwegian people and are to be used to benefit the Norwegian society in its entirety.¹⁶⁴

Today, there are over 50 Norwegian and Foreign companies active on the shelf.¹⁶⁵ The key goals of the Norwegian Oil and Gas Sector since these discoveries half a century ago have

¹⁵⁶ Hunter T, ‘Review of the Australian Upstream Petroleum Sector’ *Australian Productivity Position* (2009) 6.

¹⁵⁷ Anders B. Høvik, ‘Issues of Corporate Governance in the Relationship between the Norwegian Oil Companies and their Governmental Owner’ *Master of Science Thesis ;Aarhus School of Business, Denmark* (2004) 6.

¹⁵⁸ See Nugzar D., ‘Delimitation of maritime boundaries between adjacent States,’ *United Nations – Nippon Foundation Fellow* (2006-2007) 16.

¹⁵⁹ Meld. S, ‘An industry for the future – Norway’s petroleum activities’ *Norwegian Ministry of Petroleum and Energy* (2010-2011) 5.

¹⁶⁰ Borten M. O., Facts 2013: The Norwegian Petroleum Sector, ‘*Ministry of Petroleum and Energy* (2013) 12.

¹⁶¹ Borten M. O., Facts 2013: The Norwegian Petroleum Sector, 12.

¹⁶² Borten M. O., Facts 2013: The Norwegian Petroleum Sector, 12.

¹⁶³ Meld. S, ‘An industry for the future – Norway’s petroleum activities’ *Norwegian Ministry of Petroleum and Energy* (2010-2011) 5.

¹⁶⁴ Meld. S, ‘An industry for the future – Norway’s petroleum activities’ 5.

¹⁶⁵ Borten M. O., Facts 2013: The Norwegian Petroleum Sector, ‘*Ministry of Petroleum and Energy* (2013) 12.

been national management and control as well as establishing a national oil community.¹⁶⁶ As is the case here in Kenya¹⁶⁷, natural resources in Norway are owned by the state. The Norwegian government is therefore the only body that is authorized to grant licenses.¹⁶⁸ The Ministry of Petroleum and Energy controls the licensing system.¹⁶⁹ Oil companies receive concessions or licenses from the state which are normally subject to terms and conditions.¹⁷⁰ Additionally, Norway administers its petroleum resources using three distinct government bodies. The national oil company (NOC) engaged in commercial hydrocarbon operations, a government ministry to help set policy and a regulatory body to provide oversight and technical expertise.¹⁷¹

Environmental and climate considerations have been an essential part of the Norwegian petroleum sector. There is a comprehensive policy instrument that safeguards the environmental considerations through all the processes of petroleum activities and its phases.¹⁷² That is, from exploration to operation and cessation. Since its early days of discovery, Norway has separated policy, regulatory, and commercial functions in the government's administration in the petroleum sector. This approach has inspired various countries as the undoubted model of good bureaucratic design for a hydrocarbons sector.¹⁷³

4.3 The 10 Oil Commandments

The Norwegian Parliament in 1971 established principles that have subsequently guided the Norwegian Petroleum policy to date. They represented an ideal of what was needed to ensure

¹⁶⁶ Hylleberg Tine, 'Overview of the Norwegian Oil and Gas Industry' *Offshore Centre Denmark* (2009) 14.

¹⁶⁷ Article 62 (1) (f) Constitution of Kenya 2010.

¹⁶⁸ <https://www.regjeringen.no/globalassets/upload/kilde/oed/bro/2004/0006/ddd/pdfv/204702-factsog0104.pdf> on 08 February 2016.

¹⁶⁹ Hunter T, 'Review of the Australian Upstream Petroleum Sector' *Australian Productivity Position* (2009) 6.

¹⁷⁰ Hunter T, 'Review of the Australian Upstream Petroleum Sector' 6.

¹⁷¹ Thurber M., Hults D, and Heller P., *The Limits of Institutional Design in Oil Sector Governance: Exporting the "Norwegian Model"* *ISA Annual Convention* (2010) 4.

¹⁷² Borten M. O., *Facts 2013: The Norwegian Petroleum Sector*, *Ministry of Petroleum and Energy* (2013) 52.

¹⁷³ Thurber M., Hults D, and Heller P., *The Limits of Institutional Design in Oil Sector Governance: Exporting the "Norwegian Model"* *ISA Annual Convention* (2010) 6.

that oil and gas activities would benefit the entire nation. These principles have consequently been dubbed the 10 Oil Commandments. The declarations are as follows¹⁷⁴;

1. National supervision and control must be ensured for all activity on the Norwegian Continental Shelf (NCS).
2. The petroleum discoveries must be exploited in a manner designed to ensure maximum independence for Norway in terms of reliance on others for supply of crude oil.
3. New industry or business activity must be developed, based on petroleum.
4. The development of an oil industry must take place with necessary consideration for existing commercial activity, as well as protection of nature and the environment.
5. The flaring of exploitable gas on the Norwegian Continental Shelf (NCS) must only be allowed in limited test periods.
6. Petroleum from the Norwegian Continental Shelf must, as a main rule, be landed in Norway, with the exception of special cases in which socio-political considerations dictate a different solution.
7. The State involves itself at all reasonable levels, contributes to coordinating Norwegian interests within the Norwegian petroleum industry, and to developing an integrated Norwegian oil community with both national and international objectives.
8. A state-owned oil company be established to safeguard the State's commercial interests, and to pursue expedient cooperation with domestic and foreign oil stakeholders.

¹⁷⁴ Storting White Paper 28, 'An industry for the future – Norway's petroleum activities', 7. See also, <http://www.npd.no/en/Publications/Norwegian-Continental-Shelf/No2-2010/10-commanding-achievements/> 15 February 2016).

9. An activity plan must be adopted for the area north of the 62nd parallel which satisfies the unique socio-political factors associated with that part of the country.

10. Norwegian petroleum discoveries could present new tasks to Norway's foreign policy.

These commandments were as a result of Norwegian governing authorities appreciating the importance of a national oil policy as a blue print towards sustainability of the industry. The national management and control, the build-up of a Norwegian oil community and state participation were vital elements in the country's oil policy. The astute choices made at initial stages enlighten various countries and explain why Norway ranks today as one of the world leaders in many areas of the oil industry.¹⁷⁵

4.4 Petroleum Safety Authority, Norway

The Petroleum Safety Authority (PSA) of Norway has the mandate to enforce and develop regulations that will govern the environment and safety of the Norwegian oil and gas industry.¹⁷⁶ It is responsible for technical and operational safety.¹⁷⁷ The authority is an independent government regulator who major responsibility is not only safety but emergency preparedness in the Norwegian petroleum industry working environment.¹⁷⁸ The PSA generates regulations to maintain prudent health, environmental and safety standards and are used as a good tool for supervision.¹⁷⁹

Initially, the PSA had responsibilities as part of the National Petroleum Directorate (NPD). The Norwegian government resolved in 2002 that the NPD would be separated by allocating

¹⁷⁵ <https://www.norskoljeoggass.no/en/Facts/Petroleum-history/> 20 February 2016.

¹⁷⁶ International Association of Oil and Gas producers, 'OGP; Regulators use of standards' *Oil and Gas Publications* (2010) 33.

See also <http://www.ptil.no/?lang=en> US 15 February 2016.

¹⁷⁷ Borten M. O., Facts 2013: The Norwegian Petroleum Sector, *Ministry of Petroleum and Energy* (2013) 16.

¹⁷⁸ <https://www.norskoljeoggass.no/en/Facts/Petroleum-history/> on 15 February 2016.

¹⁷⁹ International Association of Oil and Gas producers, 'OGP; Regulators use of standards' *Oil and Gas Publications* (2010) 33.

responsibility for supervising safety to a different regulator, now the PSA.¹⁸⁰ The main functions of the NPD are now assigning resource management regulations and measurement of petroleum.¹⁸¹ The NPD is subordinate to the Ministry of Petroleum and Energy. It plays a key advisory role to the ministry of matters relating to resource management.¹⁸²

4.4.1 Duties of the PSA¹⁸³

The government summarily allocates the following duties to the PSA.

1. Ensure intelligible supervision of that the petroleum industry through independent audits as well as cooperation with other health, safety and environmental (HSE) regulators.
2. Supply credible information and advice to the industry stakeholders so as to establish appropriate collaboration with other HSE regulators both nationally and internationally.
3. Convey knowledge about HSE to society in general.
4. Provide input and support to the supervising ministry on matters that the ministry deals with as well as assist with issues on request.

The HSE regulations for petroleum activities emphasize on developing unified regulations that re enforced by the PSA, the Norwegian Pollution Control as well as the Directorate for health and social affairs.¹⁸⁴ Norway also encapsulates a framework regulation that all companies venturing into petroleum activities have to work systematically with.¹⁸⁵

The PSA is subordinate to the Ministry of Labor and Social Affairs.¹⁸⁶ On the contrary NEMA is established under EMCA No. 8 of 1999 as the principal instrument of Government for the implementation of all policies relating to environment.¹⁸⁷ NEMA is therefore directly

¹⁸⁰ <http://www.psa.no/role-and-area-of-responsibility/category916.html> on 15 February 2016.

¹⁸¹ International Association of Oil and Gas producers, 'OGP; Regulators use of standards' Oil and Gas Publications (2010) 36.

¹⁸² Hylleberg Tine, 'Overview of the Norwegian Oil and Gas Industry' *Offshore Centre Denmark* (2009) 26.

¹⁸³ <http://www.psa.no/role-and-area-of-responsibility/category916.html> on 15 February 2016.

¹⁸⁴ Hylleberg Tine, 'Overview of the Norwegian Oil and Gas Industry' 49.

¹⁸⁵ Hylleberg Tine, 'Overview of the Norwegian Oil and Gas Industry' 49.

¹⁸⁶ <http://www.psa.no/role-and-area-of-responsibility/category916.html> (accessed on 15/02/2016).

¹⁸⁷ <http://www.nema.go.ke/index.php/about-us/establishment> on 15 February 2016

subordinate to the Ministry of Environment.¹⁸⁸ Further, the National Environment Council (NEC) is also established by EMCA.¹⁸⁹ All committees are chaired by the Cabinet Secretary responsible for of Environment matters. The Director General of NEMA acts as the secretary to this committee.¹⁹⁰

¹⁸⁸ <http://www.environment.go.ke/?cat=28> on 15 February 2016.

¹⁸⁹ Section 4(1), *Environmental Management and Coordination Act no. 8 of 1999*.

¹⁹⁰ <http://www.environment.go.ke/?cat=28> on 15 February 2016.

4.5 The Norwegian Petroleum Development Hierarchy ¹⁹¹

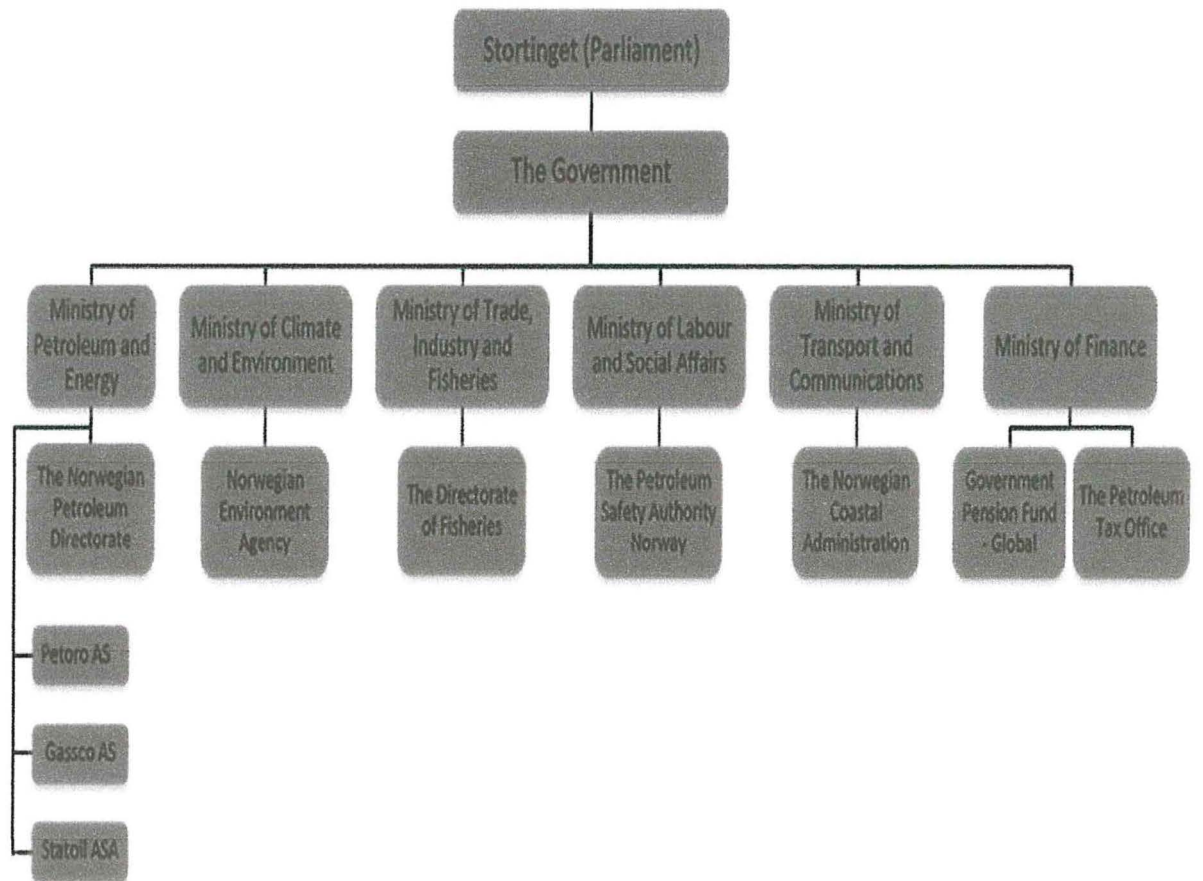


Table 1

¹⁹¹ Borten M. O., Facts 2013: The Norwegian Petroleum Sector, 'Ministry of Petroleum and Energy (2013).

4.6 Conclusion

It is necessary that Kenyan policy makers learn a great deal from the Norwegian experience. The key lesson is the interdependence of government ministries with its environmental authorities. Having unified HSE regulations that include both governmental and non-governmental institutions, as has been attained by the PSA, also serve as an important directive. Learning from the Norwegian experience will be further expounded on in chapter five.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction.

This chapter discusses suggested solutions that NEMA could embrace in light of the emerging upstream oil and gas sector. It begins by denoting NEMA's capacity (or lack thereof) in maintaining regulatory oversight and concludes by giving robust recommendations for improvement based on the findings in chapter four of Norway's management system.

5.2 Findings on NEMA's Capacity

- a) *NEMA has the legislative capacity to sufficiently conserve and protect the environment*

As discussed earlier in chapter three, the establishment of NEMA is provided for in the Environmental Management and Coordination Act (EMCA).¹⁹² It has been give the power to act as a body corporate with perpetual succession and the power to enter contracts, sue and purchase property.¹⁹³ The principal purpose of the Authority is to exercise general supervision, coordinate environmental matters in addition to serving as the principal instrument of the government in the implementation of all policies relating to the environment.¹⁹⁴

The Constitution of Kenya, 2010 spells out the state's mandate to ensure sustainable exploitation and the management of the environment.¹⁹⁵ Furthermore, the state must establish systems of environmental impact assessment, audit as well as environmental monitoring.¹⁹⁶ Parliament is also given the power to enact any subsequent legislation to give full effect to all

¹⁹² Section 7(1), *The Environmental Management and Coordination Act 2012*.

¹⁹³ Section 7(1), *The Environmental Management and Coordination Act 2012*.

¹⁹⁴ Section 9(1), *The Environmental Management and Coordination Act 2012*

¹⁹⁵ Article 69 (1) (a) *Constitution of Kenya* (2010).

¹⁹⁶ Article 69 (1) (f) *Constitution of Kenya* (2010).

the mentioned provisions.¹⁹⁷ Some of this subsidiary legislation includes water quality, controlled substances, biodiversity, wetland and waste management.

Despite this legislative capacity, there is often not enough mechanisms at NEMA to implement and enforce the existing laws. Further there is often improper communication and support between the ministries of the Government of Kenya.¹⁹⁸

b) NEMA carries out a broad range of environmental management activities.

As per the NEMA service charter, the authority carries out a wide range of activities. This summarily includes the registration of environmental experts, environmental licensing, environmental auditing, environmental inspection, environmental education and awareness. Additionally, NEMA conducts environmental reporting, environmental planning and research, endorsement of proposals on get small grants, development of curriculum for training of environmental impact assessment/audit experts and domestication of multilateral environmental agreements.¹⁹⁹

NEMA also handles the implementation of laws spelled out in subsidiary legislations. This gives them a wide task as they ought to manage issues that come about waste management to controlling water and air quality. The environmental licenses that NEMA grants ranges from noise licenses²⁰⁰ to granting and reviewing licenses to proponents who plan to change land-use.²⁰¹ In spite of the power to compel any authority or government ministry to comply with existing environmental regulations, not enough effort is seen from the ministries in trying to avert some of the duties to themselves.

¹⁹⁷ Article 72, *Constitution of Kenya* (2010).

¹⁹⁸ Centre of Sustainable Urban Development, 'How well do Environmental Regulations Work in Kenya: A Case Study on the Thika Super Highway,' (2013) 5.

¹⁹⁹ Director General, 'National Environment Management Authority Service Charter,' (2012-2014) 3.

²⁰⁰ The Environment Management and Co-Ordination (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009.

²⁰¹ Center of Sustainable Urban Development, 'How well do Environmental Regulations Work in Kenya: A Case Study on the Thika Super Highway,' (2013) 5.

- c) *NEMA does not have enough capacity to handle the potential impact of the upstream oil and gas industry.*

As has been demonstrated throughout this research paper, the potential effects of the oil and gas industry can prove fatal. The need for sufficient preparedness cannot be overlooked. More importantly, it's essential that the states with an emerging oil and gas sector establish an enforceable legislative framework with mechanisms which serve as preventative measures rightly in place.

Unfortunately, as things currently stand, although fully empowered by the Constitution and EMCA, NEMA is yet to fully utilize its mandate on enforcement especially when dealing with the oil and gas sector. Unlike environmental managerial systems in other oil and gas exploiting countries such as Norway, NEMA lacks capability as a result of the following:

(i) Lack of financial capacity

A huge bulk of the money that NEMA obtains comes from licensing fees which are granted to either individuals or institutions. The remainder of their financial resources comes from designated funding from the Government of Kenya.²⁰² In the financial year of July 2014 to June 2015, NEMA received 685million in licensing fees, 435 million from government grants, 11.6 million from donor funds and other funds at 1.5 million.²⁰³ The total being approximately 1,331.1 billion. The fees received from EIA's varies depending on the project cost. As it currently stands, NEMA receives 0.1% of the project cost.²⁰⁴ The total expenditure on the other hand is 1.24 billion.²⁰⁵ With such minimal profits, it is nearly impossible to implement new projects that could benefit NEMA's capacity. The risk of ultimately running on losses is quite substantial.

²⁰² Centre of Sustainable Urban Development, 'How well do Environmental Regulations Work in Kenya: A Case Study on the Thika Super Highway,' (2013) 5.

²⁰³ NEMA's Financial Statement explained by the finance office during an interview with NEMA's senior accountant, Mr. Benedict Musyoki.

²⁰⁴ NEMA's Financial Statement explained by the finance office during an interview with NEMA's senior accountant, Mr. Benedict Musyoki.

²⁰⁵ NEMA's Financial Statement explained by the finance office during an interview with NEMA's senior accountant, Mr. Benedict Musyoki.

Nevertheless, an excellent project which the government undertook is that of the Kenya Petroleum Technical Assistance Project (KEPTAP). This project came about as a result of the Kenyan government requesting a credit from the World Bank to support the development of its petroleum sector in 2013.²⁰⁶ The main aim of the project was to strengthen the capacity of the Kenyan government to manage its petroleum sector and wealth for sustainable development impact.²⁰⁷ With the help of the World Bank on this project, Kenya could then begin to efficiently streamline its petroleum industry given that the country received US\$50 million for the project.²⁰⁸ However, the project is slated to only run until 2021.

Research shows that the allocated funds that have been allotted would greatly assisted in undertaking a Strategic Environmental and Social Assessment (SESA) for the oil and natural gas sector, an exercise that was scheduled to end on December 31, 2015.²⁰⁹ The lapse in funds leaves a huge monetary gap for the authority such that it constantly has to rely on licensing fees, which provide less than 60% of its financial needs.

To be aptly prepared for the potential impacts of this sector there must be a continuous flow of funds. This funds would mostly go into generating preventive measures and fund routine checks so as to avoid disasters such as that of the '*Deepwater Horizon*' which did not have monitoring measures.

(ii) Lack of expertise

NEMA currently operates without a fully functioning department catered only for matters dedicated to the oil and gas sector. It is thus impossible to develop experts in the field or build

²⁰⁶ The World Bank, <http://www.worldbank.org/en/news/press-release/2014/07/24/kenya-new-world-bank-project-will-support-country-efforts-to-better-manage-oil-and-gas-developments-and-revenues-to-invest-in-lasting-growth-and-development> on 20 February 2016.

²⁰⁷ The World Bank, <http://www.worldbank.org/en/news/press-release/2014/07/24/kenya-new-world-bank-project-will-support-country-efforts-to-better-manage-oil-and-gas-developments-and-revenues-to-invest-in-lasting-growth-and-development> on 20 February 2016.

²⁰⁸ Kenya Petroleum Technical Assistance Project (KEPTAP) Introduction to the Project See <http://bcckenya.org/assets/documents/KEPTAP%20Presentation%20-%20Sept%202015.pdf> on 20 February 2016.

²⁰⁹ The World Bank, 'Consultancy Services for Strategic Environmental and Social Assessment for Petroleum Sector in Kenya'. Ref No: P145234/CS-6

See <http://www.worldbank.org/projects/procurement/noticeoverview?id=OP00031991&lang=en&print=Y> on 20 February 2016.

technological know-how that would enable the institution to conduct its mandate. Oil and gas issues are very technical in nature. NEMA has neither the necessary expertise to review EIS reports nor enough money to hire external or international experts to do the work.²¹⁰ Experts are not only needed for the EIS process but through the monitoring aspect of it. Technology continues to play a major role in transforming the oil and gas industry.²¹¹ It is through new developments that science has been able to curb the negative impacts of pollution caused by exploring oil and gas. Through technology, various reduction of emissions techniques have been utilized by other oil and gas producing countries more so in drilling and production.²¹² Expertise in this field will need NEMA to constantly keep abreast with new technology. This of course requires proper financial aid from various sources especially the government.

(iii) Inability to sufficiently conduct Integrated Environmental Impact Assessment

As earlier described, IEIA provides a larger scope of consideration than an EIA. The due diligence undertaken focuses not only on environmental concern but the social aspects of it.²¹³ This is in order to ensure both local and international compliance. Unfortunately, NEMA lacks the physical infrastructure to view all exploration sites – more often than not, they simply rely on the reports filed by companies. There is not an adequately structured independent means of verification. Thus the IEIA, while well intentioned and looks good on paper- becomes a lame duck – it has no teeth or practical enforcement mechanisms.

In order to sufficiently carry out an IEIA the necessity for public participation cannot be disregarded. It's crucial to note that to fully recognize environmental human rights, we should put a human face on it.²¹⁴ With public participation comes social concern especially for whom might have their rights (e.g. Land rights, Environmental rights) infringed upon. These processes have to sufficiently cater for human rights. An example of this is the human rights

²¹⁰ All Africa, <http://allafrica.com/stories/201510122473.html> (accessed on 20/02/2016).

²¹¹ http://www.rigzone.com/news/oil_gas/a/136449/Oil_Gas_Technology_Trends_to_Look_For_in_2015 (accessed on 20/02/2016).

²¹² Emission Reduction Techniques for Oil and Gas Activities U.S. Forest Service (2011) 1.

²¹³ Ruwange M, 'Briefing: Integrated Environmental Impact Assessment (IEIA)' *Strathmore Extractives Industries Center* (2015) 2.

²¹⁴ Martin P, Bigdeli S, Kennedy A, 'The Search for Environmental Justice' IUCN Academy of Environmental Law (2015) 92.

violation case in Nigeria that was a result of oil development led to the African Commission recommending a full assessment, compensation and clean-up of areas contaminated by oil operators. Such application put a human face to these environmental human rights.²¹⁵

However, dealing with local individuals brings about a myriad of issues. Although a process that aims to integrate all issues arising from exploration, this matters can prolong the assessment process and in the long run discouraging investors from the state. This approach will commence February 2016. Although fully supported by the World Bank through its Kenya Petroleum Sector Technical Assistance Program (KEPTAP), the subtle effects may not understood until much later into the project. The main concern however remains uneasiness by both investors and communities inhabiting areas that will be socially and environmentally affected by the proposed oil and gas projects especially due to previous complaints that arose out of NEMA's dealings in approving IEIAs.²¹⁶

5.3 Embrace the Norwegian System?

The Petroleum Safety Authority (PSA) of Norway has the directive to enforce and develop regulations that will govern the environment and safety of the Norwegian oil and gas industry whilst ensuring technical and operational safety.²¹⁷ Initially, the PSA formed part of the National Petroleum Directorate (NPD) but was later dissolved to form an independent entity. Such a directive to NEMA would mean creating an institution solely involved in petroleum matters. That institution would then be subordinate to the Ministry of Energy as is the case with the NPD. Remarkably, there are other bodies that work hand in hand with the PSA such as the Norwegian Pollution Control as well as the Directorate for health and social affairs.

As opposed to creating entirely new institutions, Kenya can learn from Norway's best-practice of interdependence between the government ministries and other boards. NEMA ought not to entirely be directly subordinate to the Ministry of Environment but should be fully participant in affairs of the Ministry of Health, Ministry of Transport and Infrastructure, Ministry of Land,

²¹⁵ Hunter D., Salzman J., Zaelke D., *International Environmental Law and Policy* Foundation Press, Fifth edition, 1998, 1342.

²¹⁶ Ruwange M, 'Briefing: Integrated Environmental Impact Assessment (IEIA)' *Strathmore Extractives Industries Center* (2015)

²¹⁷ Borten M. O., Facts 2013: The Norwegian Petroleum Sector, *Ministry of Petroleum and Energy* (2013) 16.

Housing and Development, Ministry of Labor, Ministry of Agriculture as well as Ministry of Energy and Petroleum. Summarily, any ministry that may involve itself in activities that are environmentally concerned or may be reflected in matters concerning IEIA such as community land rights ought to directly be subject to NEMA guidelines. There ought to be unified HSE regulations that cut across both government and non-governmental institutions as has been attained by the PSA.

An approach that the PSA uses explains the fact that any oil company venturing into petroleum activity must directly work systematically with the PSA. Despite the fact that the EMCA law mandates NEMA to regulate environmental matters, the Petroleum Exploration Production) Act gives powers to the Cabinet Secretary responsible for petroleum to make regulations for measures relating to environmental protection.²¹⁸ This creates a conflict with respect to NEMA's mandate to fully regulate environmental matters.²¹⁹ Such a conflict is prone to creating inadequacies and loopholes therefore reducing inefficiency and discouraging investors.

Other than encouraging coordination between different ministerial spheres, a huge learning point we can derive from Norway's system is the total dedication of an institution to the petroleum sector. This comes with the realization of the huge impact that the exploration of oil and gas carries. In Kenya, the cabinet ministry regulates both energy as a general field and petroleum.²²⁰ NEMA on the other hand, as earlier described, deals with a wide scope of affairs. The lack of a particular body to specifically dedicate itself to affairs of the petroleum industry is wanting. More so one that in its entirety deals with environmental safeguards that are needed in the upstream oil and gas industry. Lastly, we cannot overlook the importance of constantly conveying knowledge to society more so when dealing with resources that greatly affect them. A duty that the PSA greatly does.

²¹⁸ Section 6(1) (k) *Environmental Management and Coordination Act*.

²¹⁹ Sivi-Njonjo K., Odari E, Ataka V., Wasunna M., 'Local Communities in Kenya's Extractive Sector: From Paternalism to Partnership' *Norwegian Church Aid* (2015) 98.

²²⁰ <http://www.information.go.ke/?p=591> (accessed on 20/02/2016)

5.4 Recommendations

As a result of carrying out this research and analyzing the variety of information stated throughout the study. The summary of recommendations is as follows;

- a) Cultivation of additional funding plans for NEMA to enable it acquire adequate resources so as to efficiently carry its mandate as directed by legislation.
- b) Encourage coordination between different government ministries to help in implementing NEMA's mandate especially in matters pertaining to their respective ministries. Further, clarify existing overlaps especially with the National Land Commission that have to do with the management of mineral oils.
- c) Encourage public participation and enforcement of Article 35 of the Constitution of Kenya by making available to the general public environmental assessment documents and monitoring reports conducted by NEMA freely accessible to the public more so those affected by the ongoing activities.
- d) Establish an able institution within NEMA that is directly involved with the Ministry of Energy and Petroleum and is only involved on environmental matters concerned solely with the petroleum industry. Any oil company that ventures into Kenya must directly work with the institution.
- e) Include the institution and its mandate in Section 86 of the Petroleum (Exploration, Development and Production) Bill 2015 as well as in Section 9 of the EMCA Act 1999.
- f) Conduct various training programs that will enable NEMA to keep up with the latest technology developments especially those that aid in preventing or mitigating environmental catastrophes. This should also enable the state breed a set of experts in the field.

5.5 Conclusion

The Constitution has aided in addressing various shortcomings that existed in Kenya's environmental regime. As illustrated earlier, the key purpose of this research paper seeks is preparing for and preventing environmental catastrophes. The oil and gas sector is not new to this risks and lack of safety guidelines and a well-functioning regulatory authority could prove disastrous. These risks ought to be well understood and solutions analyzed in order to prevent imminent calamities so as to fully maximize on the benefits of the petroleum sector.

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9. Interviews

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