

Risk management in Tullow Oil Company in Uganda: A Legal and Policy Perspective.

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BY
Victoria Gakii Maingi
LLM/35795/113/DF

SUPERVISOR; MR TAJUDEEN SANNI

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DECLARATION

"This Thesis proposal is my original work and has not been presented for a degree or any other academic award in any university or institution of learning".

Victoria Gakisi Mairi 


Name and Signature of Candidate

Date

12/11/2014

APPROVAL

I confirm that the work reported in this thesis was conducted by the candidate
under my supervision

Tajudeen Sanji 
Name and signature of the supervisor

7-11-14
Date

DEDICATION

I wish to dedicate this work to my Father Mr. Joseph Maingi Mugwika for his tireless efforts in financing my research work and enabling me through this course.

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First and foremost I wish to appreciate God Almighty, my rock who has taken me through this course and helped me in the writing of the project.(2 Timothy 1:7) For He has not given us a spirit of fear, but of power and of love and of a sound mind.

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TABLE OF CONTENTS

| | |
|---|----------|
| DECLARATION | i |
| APPROVAL | ii |
| DEDICATION | iii |
| ACKNOWLEDGEMENT | iv |
| TABLE OF CONTENTS | v |
| LIST OF CASES | ix |
| LIST OF STATUTES | x |
| LIST OF ABBREVIATIONS | xi |
| ABSTRACT | xii |
| | |
| CHAPTER ONE | 1 |
| THE PROBLEM AND ITS SCOPE | 1 |
| 1.0 Introduction | 1 |
| 1.1 Background to the Study | 3 |
| 1.2 Statement of the Problem | 6 |
| 1.3 Purpose of the Study | 8 |
| 1.4 Research objectives | 8 |
| 1.5 Specific Objectives: | 8 |
| 1.6 Research Questions | 9 |
| 1.7 Hypothesis | 9 |
| 1.8 Scope | 9 |
| 1.9 Significance of the Study | 10 |
| 1.10 Operational Definitions of Key Terms | 10 |
| 1.11 Review of Related Literature | 11 |
| 1.12 Theoretical Perspectives | 15 |
| 1.13 Related Studies | 22 |
| 1.14 Methodology | 26 |

| | |
|--------------------------------------|----|
| 1.15 Research Design | 26 |
| 1.16 Research Population | 26 |
| 1.17 Research Instrument..... | 26 |
| 1.17.1 Limitations of the Study..... | 27 |
| 1.18 Conclusion..... | 27 |

CHAPTER TWO 29

THE RISKS INVOLVED BY INTERNATIONAL OIL COMPANIES IN UGANDA ... 29

| | |
|---|----|
| 2.0 Introduction | 29 |
| 2.1 safety health and environmental risks | 29 |
| 2.2 Political risks | 32 |
| 2.3 Operational risks..... | 33 |
| 2.4 Market and credit risks..... | 36 |
| 2.5 Geological risks..... | 38 |
| 2.6.1 Legal principles governing risk management in the select international oil companies in uganda..... | 39 |
| 2.6.2 Upstream laws..... | 39 |
| 2.6.3 Environmental laws involved in the upstream sector | 40 |
| 2.6.4 Operational laws in the upstream sector..... | 43 |
| 2.6.5 Political risks in the upstream sector | 43 |
| 2.6.6 Confidentiality clause | 52 |
| 2.6.7 Security laws in the upstream sector | 56 |
| 2.6.8 Midstream laws..... | 57 |
| 2.6.9 Downstream law | 58 |
| 2.6.10 Oil price laws in downstream sector | 58 |
| 2.7. Conclusion | 59 |

| | |
|---|---------------|
| CHAPTER THREE | 60 |
| CLASSICAL AND LIBERAL APPROACH TO RISK MANAGEMENT | 60 |
| 3.0 Introduction | 60 |
| 3.1 Classical risk assessment framework..... | 63 |
| 3.2 Conclusion | 66 |
| CHAPTER FOUR | 67 |
| COMPARATIVE ANALYSIS OF RISK MANAGEMENT BY INTERNATIONAL OIL COMPANIES IN UGANDA. | 67 |
| 4.0 Introduction | 67 |
| 4.1 The China National Offshore Oil Corporation | 68 |
| 4. 2 Total SA..... | 69 |
| 4. 3 Tullow Oil PLC..... | 71 |
| 4.4 Conclusion | 73 |
| CHAPTER FIVE..... | 74 |
| PRESENTATION, FINDINGS ANALYSIS AND INTERPRETATION | 74 |
| 5.0 Introduction | 74 |
| 5.1 The Strategies ensured to the Risk Management | 74 |
| 5.2 The Significance of Risk Management control by International Oil Companies currently operating in Uganda and compliance with relevant Regulatory Paradigm; Case of Tullow | 85 |
| 5.3 Roles played by Ugandan government in creation of Legal framework for Risk Management by International Oil Companies. | 87 |
| 5.4 Challenges and possible reforms in management of risk..... | 90 |
| 5.4.0 Waste Management | 92 |
| 5.4.1 Inadequacy of existing Law | 94 |
| 5.4.2 Corruption | 94 |
| 5.4.3 Technical know-how and standard equipments..... | 95 |

| | |
|---|-----------|
| 5.5 Conclusion | 96 |
| CHAPTER SIX | 97 |
| CONCLUSION AND RECCOMENDATIONS..... | 97 |
| 6.0 Introduction | 97 |
| 6.1 Conclusion | 97 |
| 6.2 Recommendations | 98 |
| 6.2.1 Recommendations for the government/IOC IN Risk management..... | 98 |
| 6.3 Recommendations for operational risk management | 99 |
| 6.4 Other Recommendations on Risk Management in Uganda include; | 100 |
| BIBLIOGRAPHY | 102 |
| OTHER PUBLICATIONS..... | 104 |
| JOURNALS , NEWSPAPER ARTICLES AND REPORTS | 105 |
| ELECTRONIC SOURCES | 106 |
| APPENDIX I | 107 |
| INTERVIEW GUIDE | 107 |

LIST OF CASES

CARGES LLC V. ENERVEST OPERATING LLC, ET AL., CASE NO. 2012 CV 03 0215,

DAILY MONITOR VS AG LADY JUSTICE FAITH MWHONDA(CASE NO.10 OT 300(C.P.2011)

FARMING LTD. V. ENVIRONMENTAL PROCESSING SYSTEMS, L.C., 305 S.W.3D 739, 744-745 (TEX.APP.-BEAUMONT).

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TULLOW OPERATIONAL PTY LTD VS UGANDA REVENUE AUTHORITY TAX APPLICATION NO. 407 2011

LIST OF STATUTES

ANTI -TERRORISM ACT OF UGANDA 2002

NEA - NATIONAL ENVIRONMENTAL ACT CAP

NFA - NATIONAL FORESTRY AND TREE PLANTING ACT 8/2003

NATIONAL OIL AND GAS POLICY OF UGANDA 2008

OCCUPATIONAL HEALTH AND SAFETY ACT OF 2006

PETROLEUM AND SUPPLIES ACT OF 2003

THE PETROLEUM (EXPLORATION, DEVELOPMENT AND PRODUCTION) ACT, 2013

THE PETROLEUM (REFINING, GAS PROCESSING AND CONVERSION,
TRANSPORTATION AND STORAGE ACT 2013

THE PETROLEUM (EXPLORATION AND PRODUCTION) (CONDUCT OF EXPLORATION
OPERATIONS) REGULATIONS, 1993. STATUTORY INSTRUMENTS

UWA- UGANDA WILDLIFE ACT CAP 200 LAWS OF UGANDA

UGANDA OIL BOARD ACT CAP 328 LAWS OF UGANDA

1995 CONSTITUTION OF THE REPUBLIC OF UGANDA

LIST OF ABBREVIATIONS

| | |
|------|---|
| CM | Crisis Management |
| CSCO | Civil Society Coalition for Oil and Gas in Uganda |
| EHS | Environment, Health and Safety |
| EITI | Extractive Industry Transparency Initiative |
| ER | Emergency Response |
| EP | Emergency Plan |
| EWT | Extended Well Testing |
| IMS | Integrated Management System |
| IOC | International Oil Company |
| MWE | Ministry of Water and Environment |
| MIGA | Multilateral Investment Guarantee Agency |
| NOC | National Oil Company |
| OSCP | Oil Spill Contingency Plan |
| SEA | Strategic Environment Assessment |

ABSTRACT

The major purpose of the study was examining risk management in the Oil and gas companies facing a myriad of risks in today's global marketplace especially in Uganda using Tullow oil as a case. The risks range from volatile commodity prices, which are less linked to basic supply and demand but more to global socio-economic factors, to increased health, safety and environmental pressures. These are just few examples of the serious risks and threats that can impact oil and gas companies. Technology can help mitigate these risks. Despite the negative impacts that can arise from new-found oil wealth in developing countries like Uganda, the resource curse is by no means inevitable. A number of countries – including Botswana and Norway– have managed to avoid the problem. Combating the resource curse and minimizing conflict risks associated with oil is an important part of international development agendas and there are numerous institutions and resources for governments to turn to for advice on how to do just this. Efforts have also been made to promote higher levels of oil company performance in understanding and mitigating the impacts of their own operations and investments on conflict dynamics.

CHAPTER ONE

THE PROBLEM AND ITS SCOPE

1.0 Introduction

Oil has been discovered in Uganda, but no commercial oil is flowing yet and no substantial oil revenues are expected soon, though incomes related to taxes have been trickling in, no commercial production yet, but an extensive Extended Well Testing (EWT) Programme is being undertaken as part of the appraisal process. The Government has received applications for production licenses over Kingfisher, Nzizi and Mputa fields and these are being reviewed to ensure optimum recovery. Oil Companies are due to submit Filed Development plans for fields in EA2 and EA1. Exploration Area 1 and 1A (Operated by TOTAL whereby seven discoveries ; Jobi, Rii, Mpyo, Ngiri Gunya, Lyec and Jobi-East are under appraisal and 3-D Seismic Survey is ongoing. Exploration Area 2 (Operated by Tullow) whereby seven Discoveries; Kasamene, Waraga, Ngege, Nsoga, Kigogole, Wahrindi and Ngara are Under appraisal. Kingfisher Discovery Area (operated by CNOOC) Hoima whereby kingfisher oil field due for issuance of a production License.¹

Risk Management is vital to the economic consequences of the huge investment the international oil and gas industry. Today, most of the oil producing countries in the world are associated with a number of uncertainties and problems that are peculiar to that area such as middle east (Iraq-terrorism); far East (East Timor-boundary disputes); latin America (Venezuela –nationalization); US (Gulf of Mexico environmental

¹ N.T Earnest ,Commissioner Petroleum Exploration and Production Department presentation on: Developments in Uganda's Oil and Gas Sector at Oil and Gas seminar Organized by ICPAU Friday 12th April 2013.

,hurricanes); and the UK (North sea residual liability from mature fields and harsh operating conditions.²

This scenario necessitates adoption of a formal type of risk management strategy by the oil and gas companies operating in these areas, with legal responses to the above. What the strategy will look like will largely be influenced by the type of risks they face during their operations.³

Examples of such risks are Environmental risks on Lake Albert region containing 39% of Africa's mammals, and 51% of its birds therefore, loss of biodiversity could lead to loss of tourism disoriented elephants are migrating through villages and damage crops. Water pollution or oil spill could become trapped in Lake Albert since there are no clear emergency response plans for oil spill or other disaster all this could be said to be "Environmental Trap". There could also be "The Community Trap which include; Corruption existing in distribution of oil revenue and in land sales.

At the national level the "positive" expectations of the discovery of oil in Uganda include those of increased national prosperity as the Government invests in roads, power plants, education and health services and other socio-economic infrastructure. The general public also expects to see the "end of donor dependence and conditionality" and the regaining of economic sovereignty. There is hope that oil exploitation will improve their quality of life. However, there is also considerable apprehension .It is important to note that many resource-rich African countries seem to have been affected negatively by oil wealth, with increasing corruption in public affairs, political instability, environmental degradation, and increasing inequality.⁴

² K & Spalding, An Introduction to Upstream Government Petroleum Contract; Their Evolution and current use January 2005 pg 46

³ Donor Engagement in Uganda's Oil Gas Sector; An Agenda Fraction a briefing by global witness october2010

⁴ Managing oil revenues in Uganda a policy note March 2009 OREA knowledge series :No.12 pg 4

These oil discoveries have led the government of Uganda into signing contracts with international companies to exploit the oil. PARIS - (Market Watch) - French oil-and-gas major Total SA TOT-2.09% confirmed the finalization of its farm-in with Tullow Oil PLC for an interest of 33.33%, covering EA-1 and EA-2 licenses, the new Kanywabata license and the Kingfisher production license in Uganda's Lake Albert region. Tullow will operate EA-2 and CNOOC Ltd. CEO-2.68% will operate the Kanywataba license and the Kingfisher production licenses, from the former EA-3A block.⁵

1.1 Background to the Study

The hunt for oil in Uganda dates back to the early 1920's when significant oil exploration was done by E.J. way land, a government geologist who documented substantial amounts of hydrocarbons in the Albertine Graben. The Albertine Graben in which oil has been discovered in Uganda is located in the western part of the country, mainly in Masindi, Kibale and Hoima district around lake Albert which forms the northern foremost part of the western arm of the East African Rift valley. It is situated at the Ugandan and Congo border further stretching to the border with Sudan.⁶

In 2006, Uganda made its first commercially viable petroleum discovery. Since 2006, oil companies have drilled approximately 39 exploratory wells in western Uganda, only three of which were reportedly dry.⁷ Today, Uganda has an estimated reserve capacity of over two billion barrels and a potential flow rate of up to 350,000 barrels-a-day (over a 25 year period). These statistics place the country in the company of Equatoria Guinea, Gabon, and the Republic of Congo (although not in the company of Nigeria and Angola—the reigning titans of African oil)⁸.

Alongside the anticipation of the wealth generated by oil, the experience of other oil producing countries tells us that oil also creates new risks and challenges for the

⁵ Ibid pg 5

⁶ Donors Engagement in Uganda's Oil & Gas sector; An agenda Fraction a briefing by global Witness October 2011.

⁷ Speech of the Minister of Energy and Mineral Development, Hon. Engineer Hilary.O, to the Parliamentary Symposium on Oil and Gas Development, delivered on 18 June 2010

⁸ Ibid

country. No country in sub-Saharan Africa has managed to achieve sustainable growth and stable development from oil alone. The example of Nigeria shows that oil production has the potential to inflict environmental degradation and insecurity, while failing to lift a majority of a country's poor out of the grip of poverty. To prevent this, Uganda needs effective, transparent, and accountable state structures to ensure that oil production translates into economic development and prosperity⁹.

Oil companies whether national or international can be considered as providing the central driving force in the oil industry right across the supply chain from exploration to production through processing and transportation, to final marketing, sales and distribution. Terror threats, kidnappings, natural disasters and civil war-all recognized dangers to the world's oil producing nations¹⁰. All these are before considering more commonly associated risks, including fluctuations, equipment failure and pollution. The main issue is how the international oil and gas firms protect themselves and mitigate against the hazards¹¹

Tullow has been successfully operating in Africa since 1986. In recent years the Group has had significant exploration success in Uganda and Ghana where two new hydrocarbon provinces have been established and major developments have commenced. The success from these two basins and geological play types has led Tullow to expand its acreage positions in an effort to replicate the transformation success Ghana and Uganda has brought to the business. In West Africa and across the Atlantic in South America, Tullow has made further Jubille-like deepwater discoveries and a high-impact exploration campaign continues. In East Africa, Tullow acquired significant acreage positions in Kenya and Ethiopia with the first well in Kenya, in 2012, making an important discovery at Ngamia-1¹².

Tullow Oil is one of the largest independent oil and gas exploration and production companies in Europe. Its in the next phase of transformational growth with a major

⁹ Enhancing oil and gas in Uganda critical review of the draft petroleum(Exploration development production and value addition)Bill 2010.Civil society coalition for oil and gas in Uganda(CSCO)CSCO research paper No.12010.

¹⁰ K & Spalding ,An Introduction to Upstream Government Petroleum Contracts: Their Evolution & current Use ,January 2005 pg 45

¹¹ ibid

¹² www.Tullowoil.com as accessed on 4th June 2014.

focus on Africa, where its already a dominant player. Key to achieving growth ambitions is delivery of first oil in Ghana in November 2010 and developing the significant resource base discovered in Uganda with its new partners CNOOC and Total.¹³

In Uganda, Tullow has drilled over 45 wells since 2006 with 1.1 billion barrels (P50) of oil having been discovered in the Lake Albert Rift basin with additional prospective resources yet to be drilled. Following the farm down of two-thirds of its equity in the Lake Albert basin to CNOOC and Total in February 2012, Tullow is now working closely with the Government and its new partners on a basin-wide development plan with the potential to produce in excess of 200,000 barrels of oil per day. In Ghana, Tullow and its partners discovered the world-class Jubilee field in 2007 and developed it in record time with production commencing in November 2010, some 40 months after discovery. During 2011, production from the field ramped up to around 70,000 bpd. During 2012, remedial activity is taking place across the field to rebuild the production rate towards facility capacity and ensure that plateau production is delivered in 2013. Further developments will take place during 2012 with the Phase 1A Plan of Development sanctioned for Jubilee in January 2012 and the Tweneboa-Enyenra-Ntomme (TEN) cluster development expected to be sanctioned later in the year.¹⁴

The **Vision** of Tullow Oil was discovered by the researcher to be the leading global independent exploration and production company. It has unique high-impact exploration growth opportunities in frontier basins combined with increasing financial strength from rising production and portfolio management. It was discovered by the researcher that Tullow Oil is establishing an unrivalled competitive position which differentiates it from its peers. Others were Exploration –led growth strategy, finding big oil, delivering material production growth, Building a well funded balance sheet, protecting people and the environment and the business, sustaining its good reputation, maintaining its entrepreneurial character ,creating shared prosperity, delivering substantial returns.¹⁵

¹³Ibid pg 30.

¹⁴<http://www.tullowoil.com/index.as> accessed on 15th June 2014

¹⁵Supra as accessed on 15th June 2014.

CNOOC an International Oil Company will also drill in Lake Albert, the most biodiversity area in Africa. Other Chinese companies have expressed interest in additional oil blocks, pipeline, and refinery. But Environmental and community risks are likely to harm the Business. For example; Reputational risk International and local media criticism, Legal risk-Company enters long, costly litigation. Construction and operational risk-Local conflict slows operation. Host government risk -Government withdraws permits and licenses, Political risk-National opposition to the company prevents future business opportunities. Financial risk -Companies lose access to finance.¹⁶

Risk management is therefore paramount in the oil industry in Uganda. The purpose of risk management is to ensure that adequate measures are taken to protect people , the environment and assets from harmful consequences of the activities being undertaken as well as balancing different concerns, in particular HES(Health ,Environment and Safety) and costs. Risk management includes measures both to avoid the occurrence of hazards and reduce their potential harms.¹⁷

1.2 Statement of the Problem

Oil industry is a particularly risky business as it operates within a challenging international and national regulatory environment, with corporate governance and risk management becoming key priorities.¹⁸

The most common risks to the industry, which raise important legal implications, include market risks (changes to the oil price, interest rates and exchange rates); credit risks(default);operational risks (equipment failure);geological risks (dry wells):Environment risks (pollution) and political risks (change of government ,regulatory regime and contractual arrangements).Additionally ,legal risk includes the kind of conduct ,at individual or corporate level, that leads to a devaluation of the

¹⁶ World resource Institute .Case study: Chinese Investment in Uganda's Oil and Gas sector

¹⁷ A Terje & Jan, Risk management :With applications from the offshore petroleum Industry.(1995)PG 76

¹⁸ K & Spalding ,An Introduction to Upstream Government Petroleum Contracts: Their Evolution & current Use ,January 2005 pg 45

company that could include loss of investor confidence; Loss of productivity and a negative public reputation. While the above problems may be common to this oil – producing areas, the companies operating in each of these countries may have to deal with some or all of these on a daily basis¹⁹.

The discoveries of oil in Uganda have and continue to occur in a biodiversity rich and highly sensitive and fragile ecosystem. The terrain is characterized by a rift valley with undulating landscape that is interspaced with swamps, rivers and underground streams (aquifers) that ultimately drain into Lake Albert. Of significant importance, Lake Albert is fed from the south by River Semliki that connects with Lake Edward. The Upper Nile feeds Lake Albert from the East side from Lake Kyoga, while the western part of Lake Albert is fed by rivers, streams and swamps that drain from the Democratic Republic of Congo (DRC). Finally, Lake Albert drains into the White Nile which then flows into the Sudan and Egypt. The vegetation in the Rift is characterized by savannah grassland; shrub and protected forests, while the soils are fragile-dominated by sand, sandy-loam and expanding clays. The Albert Rift valley is also home to many wildlife species protected in the national parks and game reserves that were established many years ago. If an oil spill were to occur in such an environment, it would not only affect the soils, air, rivers, wetlands, lake, wildlife and human communities, but would have far reaching impact that could transcend international borders, sparking off trans-boundary conflicts.²⁰

The study will therefore address the legal risks to international oil companies which could therefore depend on the areas where they operate. Therefore companies operating in these areas should do their homework and their business adopts suitable mechanisms to mitigate and where possible prevent the legal risks before they cause serious and even at times devastating economic damage.

¹⁹ K & Spalding ,An Introduction to Upstream Government Petroleum Contracts: Their Evolution & current Use ,January 2005 pg 45

²⁰ B Henry, Plan for pollution risk in the Albertine , Oil In Uganda Magazine May 2014.

1.3 Purpose of the Study

The study aims to establish the peculiar nature of the risks that international oil company's face which depends solely on the influence of management control system the company will adopt. Any deficiencies in the management system should be identified and rectified. Otherwise the company would be less able to deal properly with a problem that could just escalate as time goes by. The study also establishes that the management systems used must be in sync with the relevant laws

Further the study will identify the strengths and weaknesses/gaps in the inabilities to identify and deal effectively with the exact type of risk management which could not only result in the damage to reputation and image of the company in the international industry, but also further result in serious penalties and fines.

More important the study will examine the compliance of the risk management systems to the relevant Law.

1.4 Research objectives

General: The study determined the relevance between risk management to international oil companies in Uganda.

1.5 Specific Objectives:

- i) Determining the control mechanisms used in risk management by the international oil companies.
- ii) Determining the relevance of International oil companies in Uganda vis-à-vis Risk management
- iii) Identifying the roles played by the Ugandan government in creating a legal framework for the management of risks by the international oil companies.
- v) Determining the significance of risk management control by the international oil companies in Uganda, and compliance with relevant regulatory paradigm.

1.6 Research Questions

This research sought to answer the following questions;

- i) What are the Legal risks faced by the International Oil companies?
- ii) What management control mechanisms do the international oil companies use to control the legal risks?
- iii). what is the relevance and efficiency of the international oil companies in Uganda vis-à-vis Risk management?
- v). what is the impact of the legal risks incurred by the international oil company in Uganda?
- vi). what is the significance in the management system control of the risks of international oil companies in Uganda?

1.7 Hypothesis

Detailed knowledge of the local and international conditions would be very important for the international oil company in managing their risks and in developing and adapting their own risk management systems accordingly in the content of the relevant laws.

1.8 Scope

This study was conducted in Uganda. Specifically with reference to Tullow oil company. This is because this company is currently involved in the oil and gas industry in Uganda. Also important to note is that the researcher also looked at companies that operate in Uganda who are Risk Management experts such as AON Risk Solutions and also the Ministry of Energy and Mineral Developments. But a comparison will be done with other International Oil companies such as CNOOC(Chinese National Offshore Onshore Oil)and Total, as they are also involved in the operations. The study described the level of risk management in terms of methods and strategies used or adopted to counter their effects to the international oil companies in Uganda. The study will be conducted from March to October 2012.

1.9 Significance of the Study

It is of importance to affirm the relevance of the research study. Of utmost importance and major role was its relevance as a requirement in the fulfillment of conferment of masters of laws of Kampala International University. Secondly it's important for the researcher and the petroleum law students to use the research as reference material as it will enlighten them on the possible effects that international oil companies encounter in managing risks in the oil industry. Thirdly the research was conducted to educate the society which will acquire knowledge with oil industry currently being a growing industry with the commercial oil discoveries in Uganda.

Lastly it will contribute to the stock of emerging knowledge in the petroleum Industry in Uganda that will be useful for government, companies and researchers.

1.10 Operational Definitions of Key Terms

In this study International oil companies (**IOC**) is termed operationally as an oil company that is majorly private owned. They are opposed to National oil companies which have become increasingly dominant in the international petroleum market. International Oil Companies are a specialist company not established by the host government whose activities extend right along the supply chain, with a particular emphasis on downstream and which is prepared to set up operations the world over in order to conduct its business in open, competitive market conditions.

Risk management in this study refer to the identification, assessment, and prioritization of risks (defined in *the* effect of uncertainty on objectives, whether positive or negative) followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities. Risks can come from uncertainty in financial markets, project failures, legal liabilities, credit risk, accidents, natural causes and disasters as well as deliberate attacks from an adversary.

Environmental Audit is Independent third party assessment of the current status of an organization's compliance with local environmental laws and regulations. Secondly, Assessment of the financial advantages and disadvantages of adopting a more environmentally sound policy.

Downstream oil sector is a term commonly used to refer to the refining of crude oil, and the selling and distribution of natural gas and products derived from crude oil. Such products include liquefied petroleum gas (LPG), gasoline or petrol, jet fuel, diesel oil, other fuel oils, asphalt and petroleum coke. The downstream sector includes oil refineries, petrochemical plants, petroleum product distribution, retail outlets and natural gas distribution companies. The downstream industry touches consumers through thousands of products such as gasoline, diesel, jet fuel, heating oil, asphalt, lubricants, synthetic rubber, plastics, fertilizers, antifreeze, pesticides, pharmaceuticals, natural gas and propane

Upstream oil sector is a term commonly used to refer to the searching for and the recovery and production of crude oil and natural gas. The upstream oil sector is also known as the exploration and production (E&P) sector. The upstream sector includes the searching for potential underground or underwater oil and gas fields, drilling of exploratory wells, and subsequently operating the wells that recover and bring the crude oil and/or raw natural gas to the surface.

1.11 Review of Related Literature

The term risk has been used by several people to mean several things which have sometimes introduced ambiguity into discussions around the concept. Risk exists where some of the possible uncertain outcomes involve a loss. Risk is higher when either negative outcomes are more probable or the losses associated with these outcomes are higher. According to Megill²¹, the simplest type of risk-weighting for an investment simply multiplies the gain or the loss associated with a given outcome by the estimated probability of that outcome and then sums over all possible outcomes; in other words it

²¹Transferring E& P Risk Assessment Expertise Magill 1998 <http://www.roseassoc.com/About/History.htm> as accessed on 5th April 2014.

computes the expected value of profitability can have widely different variances with some investment being much more exposed to large losses or gains. For these reason more sophisticated risk weighting approaches incorporate measures of an investor's ability to tolerate a loss of a given size²².

Risk can be managed in several ways;²³ by reducing one's stake in any one investment, by taking on a diverse portfolio of projects to reduce the variance overall return on investment and by using knowledge and experience to reduce uncertainty arriving at better determination of the probabilities of different outcomes. In his seminar work²⁴ uncertainty and profits, divides probability estimates into those "where the distribution of the outcomes in a group of instances is known (either through calculation a priori or from statistics of past experience)".

According to a case study on China's investment of oil and gas in Uganda²⁵ tools to improve risk management include; Environmental and social impact assessments– to identify risks of the project, strategic environmental assessments– to understand the impacts on a broader ecosystem (beyond artificial boundaries of specific oil blocks), Community engagement – to build mutual trust with communities living near the project, Grievance mechanisms– to provide communities with a way to raise concerns directly with the company, Disclosure of information– to avoid rumors and promote understanding.²⁶

A key part of skilful risk management is developing the most accurate possible estimates of probability even for relatively unique and unprecedented cases. Models of the workings of physical phenomena-derived from accumulated experience and informed by targeted data collection for the case at hand –can be important tools for refining probability estimates even in the absence of proximate analogue²⁷.

²² F Knight: Transferring E& P Risk Assessment Expertise Magill (1998) <http://www.roseassoc.com/About/History.htm> as accessed on 5th April 2014.

²³ Ibid pg 22

²⁴ Ibid

²⁵ Uganda oil & gas case study of CNOOC by world resource institute.

²⁶ Ibid

²⁷ Ibid pg 30

The ABS consulting Group on Oil and Gas risk management clearly outlines that companies in the oil and gas industry must deal with their own set of risks whether natural or man-made or operational as part of their daily operation. The approach that works well in an offshore installation may not work well for a refinery. An effective risk management system needs to offer solutions tailored not only to the industry but also to the specific company and the sectors to which they operate. They argue that constraints of risk significantly affect a state's choice of which agent to employ to extract its hydrocarbons. Implicit in much current debate is the idea that private, international oil companies and the state controlled National Oil companies are direct competitors and that the former may face threats to their existence in an era of increased state control.²⁸

According to Dr.Faisaal Al Thani²⁹, risk management is important; the risks located both upstream and downstream need to be addressed to ensure commercial viability of oil and gas projects. In the upstream sector the industry is characterized as high risk industry due to the sizable investment level, geological uncertainties under and other risks related to fiscal and political uncertainties with host producing countries. Risk management can be applied to marginal oil and gas fields projects to improve and make them commercially viable³⁰.

In collaboration to Oxford Analytical, Ernst and Young whereby they examined the strategic risks facing oil and gas companies. One major concern pointed out is competition by the National oil and gas companies which is a major threat to international oil companies here the problem is one of strategy; western international oil companies will find it hard to compete as deals are struck not through bidding or tenders but state-to state level bundled with development aid. Political constraints on access to reserves were also studied as risk factor³¹.

A study undertaken by Price Water Coopers shows that Political risk relates to the preferences of political leaders, parties, and factions, as well as their capacity to

²⁸<http://www.absconsulting.com/> as accessed on 30th April 2013

²⁹The development of risk management in the GCC oil & Gas sector by Dr.Faissl Al Thani

³⁰Ibid

³¹Strategic Risk to Insurance in the Oil & Gas Industry BY Ernst & Young pg39 (2010)

execute their stated policies when confronted with internal and external challenges. Changes in the regulatory environment, local attitudes to corporate governance, reaction to international competition, labor laws, and withholding and other taxes, to name but a few, may all be influenced by hard to discern shifts in the political landscape.³²

Geopolitical predictions are notoriously difficult if not impossible as risk for the IOCs.³³ For petroleum explorers one of the most intractable geopolitical problems are disputed borders and a route to market for crude oil or natural gas. The Caspian sea provides extreme example of these types of difficulties. The Azeri, Chyrag, and Serdar (kyapaz) fields and prospects lie in waters claimed both by the Azeri and by the Turkmen. Some of these border problems have been extraordinarily protracted. Exploration in near border area has been frustrated this lack of action.³⁴

For global energy companies, effectively managing geopolitical risk is a strategic imperative. Cross border expansion to fuel corporate growth is commonplace, not only for exploration and production activities, but also for transportation, marketing and refining operations. In some cases, oil and gas reserves are located in troubled or developing markets where considerable cultural, infrastructure, security or technology challenges must be met. At the same time, population growth, especially in Asia, is creating new demand for fossil fuels. Sufficient supply must be in place with supporting infrastructure and distribution to meet these high growth markets³⁵.

Price Vulnerability is a risk factor that affects the price of oil and therefore price of petroleum is determined by the quality of sulphur in the crude oil which is very important to consider when undertaking these activity. Like Wine (Petroleum) comes in a staggeringly wide range of types and qualities. Sour crude oil that is contaminated with sulphur and other impurities is less valuable than sweet crude. Whether particular oil is classified as sweet average or sour varies from refinery to refinery and also varies under government regulations but generally speaking anything over 1.5% sulphur by

³²PWC: Oil and GAS Energy industry <http://www.pwc.com/gx/en/oil-gas-energy> accessed on 4th April 2013

³³ The promotion and licensing of petroleum prospective acreage Kluwer Law International pg 76

³⁴ Ibid pg 76

³⁵ Ibid pg 77

weight its sour while anything less than 0.5% would be considered sweet. So it's a risky business because rising oil prices in the medium-longer term future, and underlying market is not predictable and therefore price instability also if the crude is heavy which also tends to be sour is harder to refine into the most valuable products therefore less valuable than light crude which also tends to be sweet.³⁶

1.12 Theoretical Perspectives

Exploration and production of hydrocarbons is a high-risk venture. Geological concepts are uncertain with respect to structure, reservoir seal, and hydrocarbon charge. On the other hand, economic evaluations have uncertainties related to costs, probability of finding and producing economically viable reservoirs, technology and oil price. Even at the development and production stage the engineering parameters embody a high level of uncertainties in relation to their critical variables (infrastructure, production schedule, quality of oil, operational costs, reservoir characteristics etc.). These uncertainties originated from geological models and coupled with economic and engineering models involve high-risk decision scenarios, with no guarantee of successfully discovering and developing hydrocarbons resources.³⁷

According to (Pinto et al., 2001)³⁸, During the exploration phase, major uncertainties are related to volumes in place and economics. As the level of information increases, these uncertainties are mitigated and, consequently, the importance of the uncertainties related to technology and recovery factor increases. The situation is more critical in offshore fields and for heavy-oil reservoirs, where investments are higher and there is a lower operational flexibility.

One of the simplest approaches is to work with the recovery factor (RF) that can be obtained from analytical procedures, empirical correlations or previous simulation runs,

³⁶ International petroleum transaction 2nd edition p91006

³⁷ Arps, J.L Prudent Risk taking .Journal petroleum Technology ,July,p30

³⁸ Ibid

as presented by Salomão and Grell (2001).³⁹ When higher precision is necessary, or when the rate of recovery significantly affects the economic evaluation of the field, using only the expected recovery factor may not be sufficient. The integration of risk analysis into the definition of production strategy can also be very time consuming because several alternatives are possible and restrictions have to be considered.

Alternatives may vary significantly according to the possible scenarios. Schiozer et al. (2004)⁴⁰ proposed an approach to integrate geological and economic uncertainties with production strategy using geological representative models to avoid large computational efforts. Integration is necessary in order to (1) quantify the impact of decisions on the risk of the projects, (2) calculate the value of information, as proposed by Demirmen (2001) and (3) quantify the value of flexibility (Begg and Bratvold, 2002; Hayashi et al., 2007). The understanding of these concepts is important to correctly investigate the best way to perform risk mitigation and to add value to E&P projects.

Therefore, risk analysis applied to the appraisal and development phase is a complex issue and it is no longer sufficient to quantify risk. Techniques today are pointing to: (1) quantification of value of information and flexibility, (2) optimization of production under uncertainty, (3) mitigation of risk and (4) treatment of risk as an opportunity. All these issues are becoming possible due to hardware and software advances, allowing an increasing number of simulation runs of reservoir models with higher complexity (Gorell and Basset, 2001)⁴¹

The National Oil and Gas policy of Uganda provides that the role of oil companies will be to efficiently explore, develop and produce the country's oil and gas resources so as to maximize Net Present Value (NPV). In order to achieve this, the companies require highly competent staff, financial strength, ability to manage risk and ability to work with Government. The companies shall be good corporate citizens by among others, abiding

³⁹ Salomao & G , .Risk Analysis applied in petroleum Production ch 6 pg 358(2001)

⁴⁰ Schiozer et al, Uncertainty and Risk analysis in petroleum exploration 2004 ch 5 pg. 46

⁴¹ Gorell & B, Risk analysis applied to petroleum exploration and production 2001 pg chapter 2 34

by the policies and laws existing in the country as well as managing emergencies that may arise out of the oil and gas activities.⁴²

The Ministry of Energy and Energy Development report of (2010) states that the National Environment Management Authority rules of Uganda provide a regulatory framework for the management of petroleum resource management law. It also goes ahead to provide for preparation and subordinate regulations for upstream and midstream petroleum sector in Uganda and the local content.⁴³

The environment management pillar is aimed at achieving National objective and directive principles of state policy that promote sustainable development and public awareness of the need to manage land, air water, resource in a balanced and sustainable manner for the present and future generations as enshrined in the (1995) constitution of the Republic of Uganda.⁴⁴

Bearing in mind that Environmental risk is a concern for the IOCs, It now goes without saying that petroleum exploration and production operations may only be carried out to the highest environmental standards. The IOCs are now obliged to take environmental issues as seriously as they have the technical and fiscal issues. Before entering a licensing process the IOCs have to satisfy themselves as to the environmental framework in which they will operate⁴⁵.

Regulations issued by the OSPAR Oslo-Paris Environmental Commission, have phased out the use of diesel and oil based muds in the North sea However research has shown that their replacement, light synthetic mud are not breaking down as rapidly as expected and UK operators plan to phase out their use. Complex chemicals added to drilling muds and accluded onto drill cuttings have caused plumes of pollution to be identified down current of the cuttings themselves. The United Kingdom industry has decided that from now on cuttings will either be re injected back into wells or be taken ashore for treatment.⁴⁶

⁴²The National Policy Oil & Gas Policy For Uganda 2008 Ministry of Energy and Mineral Development

⁴³Ibid pg 8

⁴⁴ National Objective XXVII of the 1995 Constitution of the Republic Of Uganda

⁴⁵ The promotion and licensing of petroleum prospective acreage Kluwer Law International(2011) pg 71-72

⁴⁶ Ibid 71-72

Safety, health and Environmental Risks associated with petroleum operations are inevitable. Whole physical and biological world in which human live and in which petroleum operations are carried out were put by: an oil eruption blow out at the drilling or production sitemap grounding or collision of oil takers or rapture of pipelines and subsequent massive release of oil into the environment (oils pillage). More recent concerns in which humans health and safety are not directly involved, are environmental risks caused by: Subsistence earth tremors. The extraction of petroleum causes compaction in varying degrees of the reservoir rock from which petroleum is extracted depending on the characteristics of the rock. This compaction may in turn lead to subsistence at the surface and may even cause earth tremors .ii) The disposal of waste products generated in the course of the petroleum operations.iii) abandonment removal and disposal of production installations. Over the years it has become apparent that if properly executed and when taking all the reasonable precautionary or preventive measures that modern technology makes available the operation of petroleum facilities onshore as well as offshore, does not present a danger for human health and safety and the environment generally.⁴⁷

For example Tullow the oil company working in Uganda⁴⁸ in the petroleum industry has come up with a comprehensive oil spill plan in place for its onshore operations in Lake Albertine Basin. This work plan is an example of many other work plans within strategy of Uganda's National Environmental Management Authority which directly responsible for ensuring that any plans developed are workable. According to Strategic Management (2010) Successful companies are able to go back to the well again and again, replicating their success on new products and in new markets. To do so, they must have a template for dealing with risk that gives them an advantage over the competition. It is true that risk exposes the companies to potential losses but risk also provides opportunities. A simple vision of successful risk taking is that it should expand exposure to upside risk while reducing the potential for downside risk.

⁴⁷ Petroleum Industry and government; A study of the involvement of the industry and government in production and use of petroleum 2nd edition pg 14-17

⁴⁸ [Htp;www.tullow.com](http://www.tullow.com) as accessed on 11th April 2014

The essence of risk management is not avoiding or eliminating risk but deciding which risks exploiting, which ones to let pass through to investors and which ones to avoid or hedge. To exploit risk, you need an edge over your competitors who are also exposed to that same risk, and there are five possible sources. One is having more timely and reliable information when confronted with a crisis, allowing you to map out a superior plan of action in response. A second is the speed of the response to the risk, since not all firms, even when provided with the same information, are equally effective at acting quickly and appropriately. A third advantage may arise from experience weathering similar crises in the past. The institutional memories as well as the individual experiences of how the crises unfolded may provide an advantage over competitors who are new to the risk. A fourth advantage is grounded in resources, since firms with access to capital markets or large cash balances, superior technology and better trained personnel can survive risks better than their competitors. Finally, firms that have more operating, production or financial flexibility built into their responses, as a result of choices made in earlier periods, will be able to adjust better than their more rigid compatriots.⁴⁹

Fiscal scheme and taxation is an important area when discussing the issue of risk expected by the IOCs.⁵⁰ The fiscal scheme is devised by government dividing up the cash flow that results from a successful petroleum production project, between the two main protagonists who are the governments and the IOCs. The phrase cash flow is an ostensibly simple one which hides issues of great importance. The phrase mean quite simply the difference between the money spent on the petroleum project (exploration, development and production, and the money which derives from that petroleum project, that is to say the proceeds of sale of the oil or gas produced. Put even more simply it's the difference money in and money out. If cash flow is negative the project never makes a profit. If cash flow is positive the IOCs have made a return over and above their capital invested. Petroleum projects are by no means risk free. For example a petroleum project in the UK for our British investor has risks associated with; the

⁴⁹ www.energyinst.org/training strategic management of Oil and Gas as accessed on 30th April 2014.

⁵⁰ New Vision Uganda March 21st 2012 <http://www.newvision.co.ug> as accessed on 2nd June 2014.

normal commercial risks of doing business in the industry, The Cost of Capital to finance his investment and the potential of losing his capital and the special commercial risk of doing business in a difficult environment such as the oil business.⁵¹

A good example is the Neptune Petroleum Ltd case. Imagine investing \$50m (sh125b) in a business venture and after seven years there is nothing to show. This is what happened to Neptune Petroleum Uganda Ltd when it invested \$50m in drilling three wells -Iti-1, Avivi-1 and the latest Mvule-1 in West Nile in Uganda. Only to discover a dry well or a well filled with water. The \$50m was not readily available on Neptune's account. Like any other independent the \$50m invested by Neptune is a sunk cost and no returns are expected. It means that the firm will encounter problems in raising money to continue its operations in Uganda. But again it also underscores the risky nature of the oil and gas business though equally rewarding. This demonstrates that the oil and gas industry is highly costly and risky venture. The company was licensed in 2005 and implemented all agreed work plan⁵².

The substantive case of Heritage Oil & Gas Ltd VS Uganda Revenue Authority⁵³ set precedent on tax effect of oil production. The tax dispute started when Heritage Oil and Gas Ltd announced its intention to transfer its Ugandan petroleum assets to Italian giant ENI in December, 2010. But Tullow Oil Uganda, which had 50% stakes in the assets, exercised its first right of option under the same terms. But Uganda Revenue Authority (URA) demanded 30% of the \$1.5m deal in capital tax gain tax before the transaction was approved. Heritage was against paying the tax "based on comprehensive advice from leading tax experts in Uganda, United Kingdom and North America" that the transaction was not taxable in Uganda. The firm demanded to settle the tax dispute via the International Court of Arbitration in London but went ahead and deposited only \$121m on the treasury. The balance of \$283.5m was deposited in an escrow account held by Standard Chartered Bank in United Kingdom (UK). The money will be released after the case has been resolved. But Uganda insisted that the tax case should be held in Uganda and in accordance and rushed to the Tax Appeals

⁵¹ The promotion and licensing of petroleum prospective acreage Kluwer Law International pg (2011)56-58

⁵² New Vision Uganda March 21st 2012 <http://www.newvision.co.ug> as accessed on 2nd June 2014.

⁵³ Heritage vs. URA Civil Appeal No.14 of 2011 UgComm 97913TH September 2011.

Tribunal. Heritage rushed to the High Court to stop the case. But the High Court upheld that the tax dispute be heard in Uganda. The ruling meant that future transactions will be taxable. Already Tullow Oil Uganda having transferred 66.6% of its Ugandan interests to France's TOTAL and China's National Offshore Oil Corporation (CNOOC) at a cost close to \$3b. With the ruling, it means that such a deal will be subject to 30% capital gains tax for Uganda which is close to \$800m.⁵⁴

The search for oil is costly and involves risk taking with much higher political and physical risks. Exploration is not just more technically difficult; it is also fraught with political risk that may lead to contractual uncertainty, which can jeopardize investment projects. Oil and gas projects pose acute project risks for international investors, which are heavily reliant on advance project financing from a number of different financial institutions (who in turn require the international investors to meet strict repayment schedules over the life of the project). But Neptune's bad omen provides Uganda with lessons. Despite holding the world's discovery success rate (92%) in the oil potential areas of Lake Albert, there are some risky areas remaining. Neptune's experience has taught Uganda that the chances of discovery can vary from the normal situation and some areas are still risky⁵⁵.

Whatever the fiscal scheme adopted by a nation fiscal schemes should have a number of factors common like; the fiscal scheme should provide early revenue to government and capture an acceptable portion of projects cash flow whilst rewarding the IOC for his risk, it should encourage the IOCs to develop small fields⁵⁶. It should tax small fields (high dollar rates per barrel) at lower rates than large fields. In other words it should be progressive in application rather the regressive, should reward efficiencies by allowing the IOCs to keep savings that he makes by the applications of new technology.⁵⁷

⁵⁴ Uganda government case with Heritage Oil march 27th 2012

⁵⁵pg 1 Ibid

⁵⁶ The promotion and licensing of petroleum prospective acreage Kluwer Law International (2011)pg 61 -62

⁵⁷ Ibid Pg 61-62

1.13 Related Studies

A recent study in International Journal of Energy Sector Management⁵⁸ shows there are several risk management studies on managing projects in developing countries. However, as risk factors vary considerably across industry and countries, the study of risk management for successful projects in the oil and gas industry in Vietnam is unique and has tremendous importance for effective project management⁵⁹.

United States environmental agency carried out a study on land management. Researchers conducted extensive basic and applied research needed by the Agency and the Office of Emergency Management in controlling the effects of past and future oil spills in all environments. Environmental Agency oil spill research includes decades-long monitoring of the fate and effects of oil spilled from the 1989 Exxon Valdez incident, as well as technical support in the Gulf Oil Spill emergency. Laboratory protocols are developed that are needed for listing commercial products on the National Contingency Plan Product Schedule⁶⁰.

These oil releases threaten public health and safety, contaminate drinking water, cause fire and explosion, diminish air and water quality, compromise agriculture, destroy recreational areas, and waste nonrenewable resources. Oil spills cause severe environmental impacts on ecosystems by harming or killing wildlife and plants and destroying habitats and food⁶¹.

Land risk management researchers are committed to providing environmental managers the tools, models, and methods they need to better understand the fate and effects of oil spills on ecosystems and to effectively remediate them⁶². Research is focused in three areas of development: better understanding of fate and effects of spilled oil, testing protocols for spill control, and effective spill response options. The research conducted showed that The Environmental Agency is responsible for directing, monitoring, and providing technical assistance for major inland oil spill response

⁵⁸ International Journal on Energy Sector Management 2nd edition January 2011

⁵⁹ 48 Ibid

⁶⁰ Ibid

⁶¹ Ibid pg 34

⁶² Emeralds International Journal of Energy Sector Management(2010)

activities. Environmental Agency and researchers have been and will continue to be world leaders in carrying out research to improve response actions to oil spills, including all aspects of chemical and biological countermeasure technologies. According to a study by Bright Star on offshore safety and risk management for the oil industry, shows that safety and risk management are key issues affecting offshore production facilities due to the highly volatile nature of the product during production processing and storage. This portion discusses past empirical investigations similar to or related to the present study.⁶³

Petroleum exploration and production activities in Uganda were guided by the Petroleum (Exploration and Production) Act⁶⁴, but On 21st March, 2013, President Yoweri Museveni assented to the Petroleum (Exploration, Development and Production) Bill, 2012, making it an Act of parliament. The new Act⁶⁵ repeals the Petroleum (Exploration and Production) Act, 1985 as revised in 2000 which successfully guided the sector through the initial promotion efforts and subsequent licensing of international oil companies that led to the discovery of commercial oil reserves in 2006. It is an Act to give effect to article 244 of the Constitution⁶⁶; to regulate petroleum exploration, development and production; to establish the Petroleum Authority of Uganda; to provide for the establishment of the National Oil Company; to regulate the licensing and participation of commercial entities in petroleum activities; to provide for an open, transparent and competitive process of licensing; to create a conducive environment for the promotion of exploration, development and production of Uganda's petroleum potential; to provide for efficient and safe petroleum activities; to provide for the cessation of petroleum activities and decommissioning of infrastructure; to provide for the payment arising from petroleum activities; to provide for the conditions for the restoration of derelict lands; to repeal the Petroleum (Exploration and Production) Act, Cap 150; and for related matters.⁶⁷

⁶³ 53 *ibid*

⁶⁴ Petroleum (Exploration and Production) Act Chapter 150 of the Laws of Uganda 2000

⁶⁵ The Petroleum (Exploration, Development and Production) Act, 2013 Acts supplement No.3 4th April 2013.

⁶⁶ The 1995 Constitution of the Republic of Uganda

⁶⁷ Petroleum Exploration and Production Department, Ministry of Energy and Mineral Development www.petroleum.go.ug as accessed on June 3rd 2014.

Downstream petroleum activities (i.e. distribution, marketing and sale of petroleum products), are guided by the Petroleum Supply Act of 2003. The former gives the responsibility of directing the upstream petroleum sub-sector to the Minister responsible for the sector. The Minister receives applications for any petroleum rights, and is responsible for issuing, renewing and revoking petroleum exploration and production licences. The Petroleum Act has served adequately the promotion, licensing and exploration for petroleum in the country, but will need to be reviewed after the Oil and Gas Policy is put in place, so as to operationalize the policy, make the Act more suitable to handle the development and production of oil and gas and appropriately capture the recent trends in the industry. The new Act will, among other things, include provisions for the development and production of natural gas; bring on board international best practices in areas like Improved Oil Recovery (IOR) together with Health, Safety and Environment (HSE) standards; provide a harmonious relationship with the proposed law on management of petroleum revenues; provide for National participation as an effort to enhance value creation by oil and gas activities; and provide for a more competitive licensing process.⁶⁸

The Oil and Gas financial Journal⁶⁹ emphasizes on Risk mitigation that What the industry must do is tap into its own formidable capacity for problem solving to address legitimate safety and environmental concerns. To do this, the petroleum industry needs to become more risk aware. Offshore operators, contractors, vendors, and everyone connected to offshore operations should alter their culture if need be to assure that everything is done right. As with a Space Shuttle launch, there can be no room for mistakes – not even a missing or malfunctioning O-ring – or disaster may ensue.

⁶⁸ Strengthening the Management of Oil and Gas in Uganda; A Development Program in cooperation with Norway Ministry of energy and mineral developments March 2009

⁶⁹ Don, S; Oil and Gas Financial Journal; Increased emphasis on risk mitigation needed on offshore oil and gas Industry October 12 2010

According to a study in the North America, Commodity price volatility has always been the single biggest variable in forecasting non-integrated independent exploration and production companies. The recent volatility in oil prices and the collapse of the North American gas price suggest strongly this is not going to change. Hedging using derivatives can dampen the impact of price movement on earnings and is a staple tool in the oil or gas company treasury. The use of commodity derivatives can mitigate or remove oil or gas price uncertainty as one of the fundamental industry variables, a variable which in turn directly impacts liquidity, (the poor management of which is the biggest predictor of a small cap's impending mortality). Hedging as a tool to manage price risk is long established in North America and often used to manage price exposure.⁷⁰

The oil and gas industry faces increasing political risk at the same time that oil prices have become more volatile and project costs have escalated, sometimes squeezing margins. The exceptionally high capital intensity of the oil and gas industry makes companies particularly vulnerable to political risk. MIGA, the Multilateral Investment Guarantee Agency of the World Bank, in its World Investment and Political Risk Report⁷¹, broadly defines political risk as 'the probability of disruption of the operations of companies by political forces and events, whether they occur in host countries or result from changes in the international environment. In host countries, political risk is largely determined by uncertainty over the actions not only of governments and political institutions, but also of minority groups and separatist movements'. The essence of this definition focuses on the risks arising from the adverse actions—or inactions—of governments. Political risk includes, for example, currency convertibility and transfer restrictions, expropriation, civil unrest, war and terrorism, breach of contract and non-honoring of sovereign financial obligations. Energy investors are understandably

⁷⁰ P Kevin, ' Hedging is an effective risk management Tool for Upstream companies' Oil and gas Financial Donor Journal November 1st 2012

⁷¹ World Investment and Political Risk 2011 report

concerned that returns on projects in emerging markets could suffer as a result of political changes or instability in the host country.⁷²

1.14 Methodology

1.15 Research Design

The researcher captured a research study which was qualitative in nature. Further the research study was Library and Internet based with interviews conducted. The reasons for this research design is because the type of results wanted on the areas of oil industry of Uganda in the management of the International oil companies was more interactive and a major concern.

1.16 Research Population

The target populations for this study were officials of this famous international oil companies working in Uganda and also respondents from Ministry of Energy and Mineral Developments and also Risk Management Advisory Experts for example the AON.

This research was a case study based in Uganda. The study is preferred since the researcher is based in Uganda and also the fact that international oil companies are very much involved in the energy sector considering the fact that petroleum is "black gold" having been discovered in commercial quantity recently.

1.17 Research Instrument

The researcher used interview guide for interviewing the respondents from, the Ministry of Energy and Mineral resource, the Risk management Experts AON and Oil companies in order to establish their understanding of the various aspects concerning risk management in the oil sector. The researcher in the study will use an interview as a tool for enlisting relevant data for conducting the study on the legal framework on the risk management in addition to library based research with respect to the relevant Laws

⁷² World Investment and Political Risk 2011 report

and regulations. This was most appropriate method of data collection in the study as far as risk management was concerned.

1.17.1 Limitations of the Study

1. *Extraneous variables* which was beyond the researcher's control such as respondents' honesty, personal biases and uncontrolled setting of the study and also respondents unwillingness to release company policies and information that could jeopardize the state of the company in terms of competition with other International Oil Companies .
2. *Instrumentation*: The research instruments on resource availability and utilization were not standardized. Therefore a validity and reliability test were done to produce a credible measurement of the research variables.
3. *Attrition/Mortality*: Not all interview guide questions may be answered neither completely answered nor even retrieved back due to circumstances on the part of the respondents such as confidentiality issues and company policies.

1.18 CONCLUSION

The oil and gas sector is a high risk industry in terms of investment and project returns. It is capital intensive and the costs progressively increase from exploration, development and production in the upstream sector, up to refining in the midstream sector until transportation which is the downstream sector. Oil and gas projects pose acute project risks for international investors, which are heavily reliant on advance project financing from a number of different financial institutions (who in turn require the international investors to meet strict repayment schedules over the life of the project). Tullow Oil among other Exploration and Production companies which are operating in Uganda face these risks in their projects. In the modern petroleum legislation in Uganda an attempt is made to ensure that the desired protection of the environment among other risks which will be discussed in the proceeding chapters

should be taken into account as an integral part of the conditions imposed of the execution of petroleum operations.⁷³

⁷³ Petroleum Industry and government; A study of the involvement of the industry and government in production and use of petroleum 2nd edition.

CHAPTER TWO

THE RISKS INVOLVED BY INTERNATIONAL OIL COMPANIES IN UGANDA

2.0 INTRODUCTION

Exploring for oil and gas is a risky business. Risk is the chance of failure, and there are many more dry "wildcats" than there are wells that make discoveries. The quantification of risk in relation to reward is one of the main benefits of formal assessments of undiscovered oil and gas potentials.⁷⁴ Despite advances in political risk methodologies and environmental and social impact assessment (ESIA) standards, and the wider corporate responsibility sphere, fundamental gaps in company practice remain. These include the capacity of companies to understand existing or potential conflict dynamics in the areas where they operate fully; or to grasp the spectrum of influence that a company's investment may have on such conflict, directly, indirectly and at varying levels.⁷⁵

2.1 Safety Health and Environmental Risks

From the beginning of production of petroleum as an individual undertaking it was recognized that persons carrying out or involved in petroleum operations as well as the environment (the latter in this context to be understood as the whole physical and biological world in which humans live and in which the petroleum operations are carried out) were put at risk by:

i) An oil well eruption (blow out) at the drilling or production site a grounding or collision of an oil tanker at sea or the rupture of a pipeline and the subsequent massive release of oil into the environment (oil spillage). An oil blowout i.e the uncontrolled explosive outflow of oil from the well that may have been caused by faulty drilling

⁷⁴ Research analysis prospect assessment and risk analysis example for Niger delta and Niger basin accepted January 9th 2008

⁷⁵ Ibid.

operations or by an accidental the drilling or production site and the grinding or collision of the oil tankers are serious safety risks. A massive release of oil may follow. Massive oil spills have generally a limited real impact and as such never cause permanent damage to the environment. Oil escaping from a well usually catches the fire and is burned off hence causing little environmental damage.⁷⁶

ii) The temporary or permanent occupation of a portion of the land or sea surface of the sea bottom (spatial occupation) required for drilling locations, for the installations or for constructions and laying of (submarine) pipelines. Petroleum equipment facilities and installations including pipelines need a place (a site of operation) at the surface or even on the bottom of the sea where they can be installed and used and operated. Obviously every effort will be made to minimize the number and the real extent of the sites required. But there is little room for maneuver when it comes to selecting geographical location suitable for drilling and or production sites or the routing of pipelines. If the selected site of operation is located within a controlled area which means an area where the occupation of the desired site requires planning permission under the applicable zoning legislation or an area declared to be an environmentally sensitive area (fragile ecosystem e.g. all types of wetlands and tropical rain forests), permission under applicable regulations will be required. Before the site can be acquired or occupied. If the desired site is located in a non-controlled area, an authorized person is free to try to rent or to buy (from public or private owner of the land) or simply occupy the selected sites, subject only to the applicable conditions of the petroleum authorization concerned.⁷⁷

More receding concerns in which human health and safety are not directly involved are environmental risks caused by; iii) subsidence and earth tremors. The extraction of the petroleum causes compaction of varying degrees in the of the reservoir rock from which the petroleum is extracted, depending on the characteristics of the rock. This compaction may in turn lead to subsidence at the surface and may even cause earth

⁷⁶ Petroleum industry and government ; a study of the involvement of the industry and government in the production and use of petroleum. 2nd edition Pg12

⁷⁷ Ibid Pg14-15

tremors. Subsidence is a physical phenomenon that manifests itself over a relatively large surface area. It affects the water system of the land surface and the water table. In a minor manner it may change the course of rivers and create lakes. Compaction of the reservoir rock may also activate faults and in this manner be the cause of the earth tremors. Subsidence and the earth tremors do not constitute a human health risk and generally do not cause direct damage to railways, houses and other buildings.⁷⁸

iv) The disposal of the waste products generated in the course of the petroleum operations. In the course of operations waste products are produced which could be harmful to the environment (and, depending on the circumstances also harmful to health) if not properly disposed of. Distinction may be made between two types of waste products. On one hand there are waste products directly related to and connected with the objective of searching for petroleum and producing for oil and natural gas such as spent drilling fluids, drill cuttings, production water and reservoir rock particles, but there is also associated natural gas that cannot be used commercially, pre-injected into the reservoir and has to be flared. On the other hand there are waste products generated as a result of making use of petroleum facilities such as spent or obsolete material (used drilling bits, spent lubricating oil, all kinds of synthetic materials).⁷⁹

v) Abandonment, removal and disposal of production installations, in particular those placed at sea. At the end of the production life of an oil or gas field the petroleum facilities that had been used in such a field have to be abandoned. Depending on the petroleum facility, concerned abandonment may consist in:

- i) the plugging of the production wells, removal of wellheads and
- ii) the removal and dismantling of any other production facility present in the field from production equipment to field pipelines to field storage tanks.

On the continental shelf, the removal and disposal of abandoned or disused production installations is regulated by international convention, in particular the 1982

⁷⁸ Ibid pg 15

⁷⁹ Petroleum industry and government; a study of the involvement of the industry and government in the production and use of petroleum. 2nd edition Pg16

convention of the law of the sea ;the 1992 convention for the protection of the marine environment of the North East Atlantic (OSPARCON) and by the 1989 Guidelines and the standards on Removal.⁸⁰

Environmental risks involved can be in a technical sense, be reduced to any desired level. It boils down to finding an answer to the question as to what are acceptable levels of safety, health and environmental disturbances e.g. how stringent safety rule should be, how much noise is acceptable, how much oil can be allowed to escape from containers storage tanks and pipelines, to what degree may wildlife be disturbed by the presence of operations of petroleum facility.

When oil products or natural gas are used as transport fuel or as for generating heat and power the carbon content of the hydrocarbons is transformed into carbon dioxide or depending on completion of combustion into carbon monoxide whereas the hydrogen content is transformed into water. Therefore the presence of the local atmosphere of all these exhaust gases and particles constitute a constant human health risk.⁸¹

2.2 Political Risks

Political risk as understood and experienced by an International Oil company operating in a host country means the risks that for purely political reasons not sanctioned by or envisaged under applicable law or the petroleum authorization and its other assets in the country is forced to stop its operations and to abandon its venture. The most common political reasons underlying political risks are;

i)A partly political, partly economically motivated change in attitude of the host government towards IOC leading to nationalization or expropriation of such IOC 'S rights and assets is another cause of political risk. In this case of political or economic motivated nationalization the IOCS main concern is to receive adequate and prompt compensation for the losses sustained by it.⁸²

⁸⁰ Ibid pg 16

⁸¹ Petroleum industry and government ;a study of the involvement of the industry and government in the production and use of petroleum.2nd edition Pg16

⁸² Ibid pg 41

ii) A breakdown of internal political stability of the host country causing civil unrest civil war or even defector breakup of the country and disappearance of central government (in such a situation the country is referred to as a failed state). Such breakdown of internal political stability may make it for an IOC physically or for safety reasons impossible to continue its (authorized) petroleum operations in the country.

iii) A breakdown of the host countries foreign relations either with respect to the international community or with respect to home country or to one of the western states. In the post cold war era any IOC could find itself operating in a host country that has disputes with the UN or with a group of concerned western states on account of not fulfilling international obligations and that as consequence thereof is subject to the imposition of trade sanctions, Any IOC Operating in such a country will suffer heavy losses as long as the sanctions are maintained and may be forced to abandon its petroleum ventures.⁸³

2.3 Operational Risks

Operational risks are a key component of enterprise risk management, and information plays a key role in reducing them. Oil and gas companies, like any other capital intensive business, need to take strategic, operational and tactical decisions about their assets, whether they are resources, reserves, wells, plants, or facilities. Often there is a disconnect between the tactical and the strategic levels. The strategists do not have visibility into costs and efficiencies across the portfolio of assets. Also, well/plant-level decisions are made based on the perspective of the individual plant or asset and these decisions may not support the profitability goals set at the corporate level. This disconnect negatively affects companies' capability to handle risks.⁸⁴

Technology can help reduce disconnect, with analytics and governance, risk, and compliance (GRC) applications that automate and document processes pertaining to the definition, assessment, and verification of business controls and operational risk at the

⁸³ Ibid pgs 42

⁸⁴ Minimizing operational risks in the oil and gas Industry white paper sponsored by EMC July 2011. Pg 2

corporate level. Enterprise GRC software includes financial compliance management, audit management, corporate policy and procedure management, risk management, and continuous enterprise controls monitoring.⁸⁵

Real-Time Monitoring and Predictive Maintenance to Prevent Incident, Failure or Non-Productive Time.

Refineries have been ahead of upstream in deploying advanced maintenance approaches. However, over the past several years, the upstream industry has adopted many of the same techniques to improve capital asset management. Best-in-class companies use a variety of techniques to reduce maintenance costs, increase uptime, and increase availability. These techniques include⁸⁶:

- Condition-based monitoring. The placement of sensors to measure various conditions (temperature, vibration, etc.) to detect conditions that may indicate potential equipment failure. The more sophisticated systems have alerting capabilities and are integrated with enterprise asset management applications that can automatically generate inspection or work orders.
- Predictive maintenance. Predictive maintenance goes beyond condition-based maintenance in applying advanced analytics to predict potential equipment failures, providing enough notice to procure complex non-commodity replacement equipment. The algorithms identify departure from normal operating levels of a piece of equipment rather than compare performance with expected performance levels for the equipment class.⁸⁷
- Criticality-based maintenance. This technique informs decisions on maintenance strategy by identifying which assets are critical to the process and what the process impacts would be if the asset were to fail. Criticality-based maintenance also informs procurement strategy so that inventories, and the costs associated with keeping them, are reduced but not at the expense of increased downtime.

⁸⁵ Ibid pg 4

⁸⁶ Minimizing operational risks in the oil and gas Industry white paper sponsored by EMC july 2011.pg 7

⁸⁷ Ibid pg 7

- Performance center or center of excellence. The most advanced companies have adopted centers of excellence where engineering staff are able to bring together engineering knowledge for root cause analysis when potential problems are identified. Centers of excellence can also have a view of multiple assets to support decision making and maintenance planning and even suggest future equipment design modifications.⁸⁸

Among the myriad IT capabilities that oil and gas companies need to operate in upstream, midstream and downstream businesses, IDC Energy Insights believes that four are critical to handle operational risks:

- Enterprise wide management of information and intelligence: Oil and gas companies design, construct, operate, and maintain large plants and facilities facing increased EHS pressure and growing competition. In order to lower project risks, improve collaboration, and ensure compliance, companies in the industry need to be able to handle all the information concerning their exploration and ongoing production from every well. They need to be able to review/approve; attribute and retrieve well file correspondence and other documents that are critical for regulatory and legal compliance. Oil and gas companies need business critical information to be quickly retrievable. In essence, they need an enterprise wide IT solution (including international branches) capable of managing all structured and unstructured content associated with planning, operating, and maintaining oil wells. That should include the design/construction of well facilities, major modifications, refurbishments, and eventual

Decommissioning. The same is true for mid- and downstream activities. In conclusion Information technology can help mitigate operational risk. Organizations that understand their risk profile and take concrete action to mitigate risks will be better positioned to be successful in the marketplace.⁸⁹

⁸⁸ Ibid pg 7

⁸⁹ Minimizing Operational Risks in the oil and Gas Industry white paper sponsored by EMC July 2011.pg8

2.4 Market and Credit Risks

While oil and gas companies know that extreme price volatility is the norm, no one can predict exactly where prices are headed or when they will spike or fall. Reducing risk on each commodity is a challenging task, but the difficulty is magnified when using a different application to manage each different commodity and refined product. Trading organizations need real-time information and the analytic ability to make smart assumptions about all future transactions that will occur along a much extended value chain. SAS (software solutions) provides energy trading and risk management (ETRM) solutions that let you proactively capture, analyze and simulate market information so you can minimize the impacts of severe price volatility, regulatory compliance and confusion caused by disparate systems⁹⁰.

The price of oil and gas is the primary factor in deciding whether a reserve is economically feasible. Basically, the higher the geological barriers to easy extraction, the more price risk a given project faces. This is because unconventional extraction usually costs more than a vertical drill down to a deposit. This doesn't mean that oil and gas companies automatically mothball a project that becomes unprofitable due to a price dip. Often, these projects can't be quickly shut down and then restarted. Instead, O&G companies attempt to forecast the likely prices over the term of the project in order to decide whether to begin. Once a project has begun, price risk is a constant companion⁹¹.

Oil and gas exploration and production (E&P) companies are increasingly focused on risk management due to the constant rise and fall of energy commodity prices. E&P companies can stabilize cash flow volatility with a well-constructed risk management program, which requires an energy risk software solution to identify measure, monitor and mitigate their exposure to price fluctuations. An effective Energy Trading & Risk Management (ETRM) solution allows an E&P company to have easy access to accurate,

⁹⁰ Energy trading and risk management software solutions since 1976
<http://www.sas.com/industry/oilgas/etrm/index.html> as assessed on 20th June 2014.

⁹¹<http://www.investopedia.com/articles/fundamental-analysis/12/5-biggest-risks-faced-by-gas-and-oil-companies.asp>
as accessed on 20th June 2014

real-time information in order to make timely business decisions based on reliable cash flow forecasts supporting capital expenditure decisions behind future drilling initiatives⁹².

E&P companies' ETRM systems must be sensitive to credit, counterparty and collateral requirements while operating within the boundaries created by fluctuating business cycles and a growing level of regulatory restructuring that adhere to changing environmental standards for emissions and impacts. New regulatory regimes, like the Dodd-Frank Act, require new technology configurations and capabilities to create the necessary transparency and reporting.

Taken together, these risks demand a precise and reliable solution to identify, measure and monitor exposures – and to generate the necessary reports and audit trail. Risk Advisory's energy risk solutions provide those analytic capabilities, either as an integrated suite or operating as independent modules. From position management and "what if" trading scenarios to data analysis and multi-currency integration, SAS Book Runner provides the complete toolset for the oil and gas trader and risk analyst.⁹³

Features include;

- Risk factor modeling
Scenario & stress testing
- Delta-normal Value-at-Risk
- Monte Carlo simulation
Cash-Flow-at-Risk analysis
- Portfolio optimization
- Current & potential exposure
Liquidity analysis

One measure of the importance of oil to an economy is its "vulnerability," defined as the ratio of net imports of crude oil and oil products to GDP. A rise in oil prices both increases the value to the economy of any domestic oil production and decreases GDP

⁹² Risk Advisory a division of software solutions <http://riskadvisory.com/oilandgas.htm> as accessed on 20th June 2014

⁹³ Ibid pg 1

according to the consumption of oil and oil products. For countries that consume more than they produce, a change in the balance of these two effects—the value of net oil imports—is a measure of the adjustment that will have to be made when oil prices rise (in the absence of other, offsetting exogenous shocks)⁹⁴.

2.5 Geological Risks

Many of the easy-to-get oil and gas is already tapped out, or in the process of being tapped out. Exploration has moved on to areas that involve drilling in less friendly environments - like on a platform in the middle of an undulating ocean. There is a wide variety of unconventional oil and gas extraction techniques that have helped squeeze out resources in areas where it would have otherwise been impossible. Geological risk refers to both the difficulty of extraction and the possibility that the accessible reserves in any deposit will be smaller than estimated. Oil and gas geologists work hard to minimize geological risk by testing frequently, so it is rare that estimates are way off. In fact, they use the terms "proven," "probable" and "possible" before reserve estimates, to express their level of confidence in the findings.⁹⁵

Oil and gas investing isn't going anywhere. Despite the risks, there is still a very real demand for energy and oil and gas fills part of that demand. Investors can still find rewards in oil and gas, but it helps to know the potential risks that go along with those potential rewards.⁹⁶

⁹⁴ Risk Advisory a division of software solutions <http://riskadvisory.com/oilandgas.htm> as accessed on 20th June 2014.

⁹⁵ <http://www.investopedia.com/articles/fundamental-analysis/12/5-biggest-risks-faced-by-gas-and-oil-companies.asp> as accessed on 20th June 2013

⁹⁶ Ibid

2.6.1 Legal Principles Governing Risk Management in the select International Oil Companies in Uganda.

2.6.2 UPTSTREAM LAWS

The extraction of hydrocarbons is an inherently hazardous activity with potential grave risks to the general environment. Environmental woes occur during all the stages of oil and gas cycle but more notable during the upstream stage of operations. The upstream stage involves exploration, appraisals and production which Tullow Oil in this case operates. This stage is accompanied by a range of environmental issues like accidental spills and blow out during development stage, operational discharge and atmospheric emissions like gas flaring during production stage. Major incidents like Ecuador rain forest pollution, Piper alpha offshore disaster (1988), gas flaring in Nigeria, Montara accident (2009) and macondo blowout (2010) are but a few example.⁹⁷ Other issues include operational concerns, security risks, political risks and geological risks among others.

The promotion and regulation of the oil and gas sector are still the responsibility of the Ministry of Energy and Mineral Development through its Petroleum Exploration and Production Department (PEPD). The Petroleum (Exploration and Development) Act ⁹⁸ gives effect to article 244 of the Constitution; to regulate petroleum exploration, development and production; to establish the Petroleum Authority of Uganda; to provide for the establishment of the National Oil Company; to regulate the licensing and participation of commercial entities in petroleum activities; to provide for an open, transparent and competitive process of licensing; to create a conducive environment for the promotion of exploration, development and production of Uganda's petroleum potential; to provide for efficient and safe petroleum activities; to provide for the cessation of petroleum activities and decommissioning of infrastructure; to provide for the payment arising from petroleum activities; to provide for the conditions for the

⁹⁷ Papers.ssrn.com as accessed on 29th August 2014

⁹⁸ Petroleum (Exploration and Development) Act, 2013

restoration of derelict lands; to repeal the Petroleum (Exploration and Production) Act; and for related matters.

2.6.3 Environmental Laws Involved in the Upstream Sector

The National Oil and Gas Policy⁹⁹ enshrines 'Protection of the Environment and Conservation of Biodiversity' as one of its guiding principles. To operationalize this, the NOGP mentions, firstly, putting in place the right 'institutional and regulatory framework to address environment and biodiversity issues relevant to oil and gas activities' and, secondly, ensuring there is 'the necessary capacity and facilities to monitor the impact of oil and gas activities on the environment and biodiversity'.¹⁰⁰

The principal agency in Uganda for monitoring environmental impacts and for coordination of management and protection of the environment is the National Environmental Management Agency (NEMA). For each proposed oil investment, the company in question must produce an Environmental Impact Assessment (EIA), which NEMA must then make public, giving the affected community and other stakeholders the right to respond. In addition, on issues of national importance such as oil development, EIAs can be subject to public hearings, as took place in Hoima in July 2008 over the location of the EPS, for example¹⁰¹.

Environmental Monitoring and Regulation for the Oil and Gas sector in Uganda is guided by various laws, statutes and regulations;

Article 245 of the constitution of Uganda ¹⁰²provides for protection and preservation of the environment. It states that parliament shall by law provide for the measures intended to protect and preserve the environment from abuse pollution and

⁹⁹ National Oil and Gas Policy 2008

¹⁰⁰ International Alert :Harnessing for peace and development in Uganda investing in peace issue no.2 September 2009

¹⁰¹ International Alert :Harnessing for peace and development in Uganda investing in peace issue no.2 September 2009

¹⁰² The 1995 Constitution of The Republic of Uganda pg 174

degradation, manage the environment for sustainable development and promote environmental awareness.

The Petroleum Exploration and Production Act¹⁰³ establishes provisions for the exploration and production of petroleum. Part IV of the act provides for obligations and duties of a licensee in relation to work practices and impact of oil exploration activities on the environment.

The Petroleum (Exploration and Production) (Conduct of Exploration Operations) Regulations¹⁰⁴ these regulations were enacted as a statutory instrument in line with the Petroleum Act¹⁰⁵. The regulations, among other things, provide specific guidelines regarding environmental management in the oil and gas sector with respect to prevention and control of pollution, health and safety during oil and gas activities

The National Environment Act¹⁰⁶ which is a framework law on environment and establishes the National Environment Management Authority (NEMA) as the overall body, charged with the management of environmental issues and provides for sustainable management of the environment. The Authority in consultation with the lead agencies is empowered to issue guidelines and prescribe measures and standards for the management and conservation of natural resources and the environment. The Act provides for environmental monitoring and impact assessment; environmental audit; environmental restoration orders and improvement notices; environmental easements; environmental performance bonds; licensing and standard setting; use of economic and social incentives; civil and penal sanctions, including community service, among others.

The third schedule of the National Environment Act¹⁰⁷, requires environmental impact assessments to be carried out for oil exploration and production activities before implementation. EIAs identify, predict, evaluate and propose mitigation measures for

¹⁰³The Petroleum Exploration and Production Act 2013 Laws of Uganda ¹⁰³

¹⁰⁴The Petroleum (Exploration and Production) (Conduct of Exploration Operations) Regulations of 1993

¹⁰⁵ Ibid

¹⁰⁶The National Environment Act, Cap. 153, 1995

¹⁰⁷ Ibid

the likely adverse impacts on the environment due to planned activities/projects. The obligation to carry out environmental impact assessments lies with the developers, however the National Environment (Conduct and Certification of Environmental Practitioners) Regulations, 2003 provides for registration and certification of environmental practitioners who carry out environmental impact studies on behalf of developers¹⁰⁸.

The National (Environmental Impact Assessment Regulations) S. No.13/199 which governs the environmental impact assessment (EIA) process, including project briefs and environmental impact studies. The Regulations provide for EIA review processes, including invitation of general public comments and public hearings, and the decision of the Executive Director of the National Environment Management Authority in respect of the granting approval, rejection of a project or cancellation of an EIA certificate.

Uganda wildlife Act¹⁰⁹ provides that any developer desiring to undertake any project which may have a significant effect on any wildlife species or community shall undertake an environmental impact assessment in accordance with National Environment Act.

In connection to the Environment The National Objectives xxvii¹¹⁰ provides that the utilization of the natural resources of Uganda shall be managed in such a way as to meet the development and environmental needs of present and future generations of the Ugandans; and in particular the state shall take all possible measures to prevent or minimize damage and destruction to land, air and water resources resulting from pollution or other causes.

The Uganda Oil Board Act¹¹¹ section 3b) provides that the board shall advise the government through the minister on foreign exchange requirements for the acquisition and disposal of petroleum products in conformity with social and economic development objectives.

¹⁰⁸ *ibid*

¹⁰⁹ Uganda wildlife Act cap 200 laws of Uganda

¹¹⁰ The 1995 constitution of the republic of Uganda

¹¹¹ The Uganda Oil Board Act Cap 328 of 25th January 1991.

Oil and Gas operations have the potential for a variety of negative impacts on the environment, but also the environment can benefit from petroleum operations. There is therefore a need to ensure that the oil companies, during their operations, contribute to the conservation effort of Government. This will in turn limit any biodiversity loss. Operations are constantly monitored to ensure compliance with Environmental and biodiversity protection requirements during exploration phase. Plans are being undertaken to further strengthen monitoring and compliance during the development phase. Government is committed to ensuring that oil activities are done with respect of the environment which is in line with the National Oil and Gas Policy and best practice in the industry.

2.6.4 Operational Laws in the Upstream Sector

Due to failures of equipments there are several laws of Uganda that govern such situations of operational risks which companies in the Exploration and production phase which include;

Occupational Health and safety Act of 2006 which provides for the handling of hazardous materials has been provided by part xiii paras 4) which provides that where any plant tank or vessel is subjected to operation no explosive or inflammable substance shall be allowed to enter the plant until the metal has cooled sufficiently to prevent any risk of igniting the substance.

2.6.5 Political Risks in the Upstream Sector

Political Risk is of concern in the Exploration and Production. In order to conduct any exploration activity, potential investors have to enter into a contract with the host government. Before this contracts are signed by an International Oil Company, they will consider A stabilization clause as a risk management device in the investment contracts. Stabilization Clauses in International Petroleum Agreements are an attempt by the International Oil Company (IOC) to neutralize the Host State's power to

unilaterally change the terms of an already concluded agreement. The shift in the balance of power from the side of the IOC to that of the Host State after investment has been made, demands that IOCs insist that contractual terms remain constant through-out the life of a project, or that any change would require agreement between both parties before it may be affected. There are conflicting views about the legal and functional value of stabilization clauses in international petroleum agreements; however what cannot be escaped from is that they serve a useful function in such agreements as one of the best means utilized by the IOC to manage the political risk that petroleum projects face. This paper analyses the legal and functional value of stabilization clauses in international petroleum agreements and concludes that their use is dependent on the confidence that the IOC has in conducting business with the Host State in question and how desperately it wants to access its petroleum resources.¹¹²

A stabilization clause in an international petroleum agreement as its name suggests is utilized as a means of ensuring that the agreement concluded between a host state, or its agent and the international oil company (IOC) will not be altered and its terms remain stable. The use of the stabilization clauses in such agreements can be understood when one focuses on the inherent risks that IOC's are exposed to when they invest in foreign countries.¹¹³

The most dramatic of these risks were manifested last century with the large scale expropriations and nationalizations that took place in many oil producing countries, and resulted in many IOC's losing their investment in these countries¹¹⁴.

The world has changed significantly since the days of direct expropriation, and in light of the current trend of stiff competition for foreign direct investment among countries; it is questionable whether a host state government would attempt such action, without

¹¹² Oil and gas Law: is there a legal functional value for the stabilization clause in international petroleum Agreements?

¹¹³ Peter, W., *Arbitration and Renegotiation of International Investment Agreements* 214 (2nd ed. The Hague: Kluwer Law International, 1995).

¹¹⁴ Smith E., et al., *International Petroleum Transactions* 338 (3rd ed., Denver, Colorado: Rocky Mountains Mineral Foundation, 2000)

the realization that it would probably spell the end of such investment.¹¹⁵ In the modern era what is of concern to the IOC is not the threat of direct expropriation, as remedies for such action have been firmly established under international law, it is the less drastic action taken by host states to change the fiscal and regulatory conditions that apply to particular projects. As a consequence the stabilization clause today has become a tool of political risk management. This was clearly pointed out by one commentator

Stabilization clauses are also important because the peculiarities of petroleum projects also demand stability. Typically such projects have long durations with each project phase lasting many years. They are extremely capital intensive with exploration and development programs costing from the tens to the hundreds of millions of dollars. They pose acute project risks with only an estimated one in ten exploration ventures resulting in a commercial discovery, and finally they are heavily reliant on loan finance from a number of different institutions that have strict repayment schedules¹¹⁶.

In light of this¹¹⁷, any action by the host state to change already agreed fiscal and regulatory terms may have the effect of disrupting the profitability of the venture for the IOC, as well as impact on their ability to meet debt service obligations. From the point of view of the host state the enactment of new laws or the amendment of existing ones is an expression of their sovereignty and any expectation that a host state will not have the requirement to alter its laws is ludicrous. However what is at issue is the validity of such action when there has been formal agreement in the form of a stabilization clause not to effect such change.

After the discovery of commercial reserves of petroleum, this strong IOC position begins to diminish this is known as the concept of the "obsolescing bargain"¹¹⁸, which is premised on the fact that a shift in bargaining power will occur between the investor

¹¹⁵ Supra at pg 392

¹¹⁶ Walde, T., *Stabilizing International Investment Commitments: International Law versus Contract Interpretation*, CEPMLP Professional Paper PP13, 21(1994)

¹¹⁷ Ibid

¹¹⁸ Ibid .

and the host state over time¹¹⁹. It is at this stage that the host state seeks to exploit this shift in bargaining power on the basis that there is a real or perceived change of circumstances, which requires remedial action. Factors which often contribute to the host states desire to change the terms of a previously concluded agreement, include things such as, the petroleum discovered exceed expectation, the price of the commodity rises to unexpected levels, a change of government in the host state, and political pressure caused by anti foreign sentiment. These factors pose significant political risks to the IOC, and not addressing them can have very grave consequences. Especially since any decision to alter the contractual terms for a project can have a hostage effect on the IOC, as it cannot simply walk away from a project after it has sunk millions of dollars into developing it. It is precisely for this reason that stabilization clauses are incorporated into international petroleum agreements as a means of neutralizing the host states powers, by alienating its right to unilaterally change the regime and rights relied upon by, and promised to, the IOC¹²⁰.

The Main types of stabilization clauses

Stabilization clauses may be divided into a number of broad categories based on their attributes. A traditional stabilization clause seeks to freeze the law of the host state as it stood at the time the agreement was signed between the parties. This action thereby prohibits the application of any law enacted subsequently by the host state to the terms of the already concluded agreement. A slight variation to this traditional approach is what is sometimes referred to as a "consistency clause", which requires that any subsequently enacted law must be consistent with terms of the already concluded agreement. The aim of the traditional stabilization clause is to render any Change to the terms of an already concluded agreement ineffective, and by express agreement remove the host states power to effect such change¹²¹.

¹¹⁹Peter, W., *Arbitration and Renegotiation of International Investment Agreements* 214 (2nd ed. The Hague: Kluwer Law International, 1995).pg 392

¹²⁰ Ibid walde pg 56

¹²¹Comeaux, P., and Kinsella, S., *Reducing Political Risk in Developing Countries: Bilateral Investment Treaties, Stabilisation Clauses and MIGA& OPIC Investment Insurance*, 15 N.Y.LJ Int'l & Comp L.1,16 at 23 (1994)

A further type of clause, which is regarded by some as a stabilization clause provides that the agreement concluded between the parties must be performed with good will or in good faith, Although a good will clause does not usually expressly curtail the host states right to enact new laws, it requires both parties to perform the agreement in good faith, thereby implicitly precluding the unilateral modification or termination of the agreement by either party. A final distinction is sometimes made between a strict stabilization clause and what is called an intangibility clause, such a clause requires that any modification of the terms of the agreement requires the mutual consent of the parties. By its nature an intangibility clause is aimed at achieving a compromise in the event that a change of law affects the terms of an already concluded agreement.

Unlike the traditional stabilization clauses an intangibility clause contemplates that a host state may have the requirement to change the terms of an already concluded agreement but such alteration must not be done unilaterally¹²².

The risk of operations of activities by International Oil companies can be countered by the "Stabilization clause" which gives the Oil Company some measure of assurance in relation to the uncertainties created by the new legislation. For example if new laws come into effect that render the position of the company more onerous then it will be addressed by some form of adjustment, usually by the company acquiring additional production from the government share to the extent necessary to maintain its economic position.¹²³

A provision to the effect that if new laws make the position more onerous some form of adjustment or compensation will be made, is probably more realistic, but this, if it is not to be susceptible to flexibility of interpretation will need to be precisely as possible .This is not always achievable and the outcome will usually favor the government at the expense of the oil company¹²⁴.

The legal validity and effect of stabilization clause on political Risks

¹²²Paasivirta, E., Participation of States in International Contracts and Arbitral Settlement of Disputes 1990 Pg. 162

¹²³ Oil and Gas Exploration Contracts 2nd Edition pg 17-18

¹²⁴ Ibid pg 19

The process of ascertaining the legal validity and effect of stabilization clauses contained in international petroleum agreements is a complex one, and has been described by one commentator as "...one of the most complex issues in international economic law in view of the fact that strands of arguments from international law (state responsibility, law of treaties) of national law, of conflict of law (both international and national conflict of laws) and possibly of an "international *lex mercatoria*" come together and can be arguably applied."

When considering the legal validity of the stabilization clause under domestic law, one is confronted with the fact that a number of domestic legal systems have established legal principles that have the effect of invalidating a stabilization clause and making it of no legal effect. One such principle is that Parliament or the executive powers of the state may not be fettered by a contract with a private individual or corporation. This is a principle of English common law and is particularly applicable in many countries that have adopted the common law as part of their domestic law. Consequently if the domestic law of such a country is the governing law of the petroleum agreement it is highly likely that the local courts will interpret a stabilization clause to be unenforceable and therefore have no binding effect on the host state¹²⁵.

In other domestic legal systems a similar situation exists, especially in Middle East and some French speaking African countries, which have modeled their laws on the French civil code. Under such a system mineral development agreements have acquired a public character and are therefore understood to depreciate the implications of the sanctity of contract doctrine. Therefore it is also arguable whether a stabilization clause would of any effect under these systems when domestic law governs the agreement.¹²⁶

In light of this discussion, it would clearly be in the host state's interest to insist that the governing law of the agreement was its domestic law, if it ever had the intention of breaching a stabilization clause contained in an agreement. The problem for the host

¹²⁵Walde, T., and Ndi, G., *Fiscal Regime Stability and Issues of State Sovereignty*, in J. Otto (ed) *Taxation of Mineral Enterprises* 1995 pg.75

¹²⁶ Ibid

state is that most IOC's recognize this, and therefore seek to internationalize their agreements, by insisting that international law is the governing law of the contract, and that the dispute resolution mechanism require the use of an independent arbitrator in a neutral forum. By doing this, the IOC avoids the risk and effects of a domestic court possibly interpreting the stabilization clause to be of no effect. As a consequence the majority of debate concerning the validity of stabilization clauses is centered on whether they are valid under international law.¹²⁷

An analysis of stabilization clauses under international law is focused around two competing concepts, the doctrine of sanctity of contract and (*pactasunt servanda*) versus the doctrine of permanent sovereignty over natural wealth and resources (*rebus sic stantibus*)¹²⁸. Under international law there is a considerable difference of opinion as to the legal validity and effect of such clauses, of which three main views have emerged. The first view is based on the notion that once parties choose international law as the governing law of the contract, it automatically renders the contract applicable to certain legal principle of international law, namely the doctrine of sanctity of contract and *pactasunt servanda* and any breach of a stabilization clause in this circumstance is a breach of international law. The crux of this argument is that any unilateral alteration of the stabilization clause immediately and directly engages the responsibility of the state under international law, without the additional requirement of establishing that there was a breach of other customary international conditions¹²⁹.

The second view is that a state has the right to permanent sovereignty over its natural resources and the proponents of this view find their justification in the pronouncements of the United Nations General Assembly¹³⁰. The idea espoused here is that the principle

¹²⁷Delaume, G., Transnational Contracts: Applicable Law and Settlement of Disputes – Law and Practice , Booklet I, Dobbs Ferry, New York 37 (1992).

¹²⁸Walde supra pg 46

¹²⁹Delaume, G., Transnational Contracts: Applicable Law and Settlement of Disputes – Law and Practice , Booklet I, Dobbs Ferry, New York 37 (1992).

¹³⁰Resolution 1803 (XVII) of 14 December 1962, 3021 (S-VI) of 1974 (Declaration on the Establishment of a new Economic Order) and 3281 (XXIX) of 12 December 1974 Charter of Economic Rights and Duties of States

of sovereignty does not limit the power of the host state to merely concluding agreements that create binding obligations; its sovereignty also allows the state the lawful basis to terminate such agreements¹³¹. Therefore according to this school of thought the state is free to bind itself by a stabilization clause, but it also has the right to revoke such an undertaking if the circumstances warrant it to do so.

There also exists a third more moderate view, which recognizes that stabilization clauses have an international effect but its proponents do not believe that they can offer the investor absolute protection. It is their belief that the freezing function of the stabilization clause is only part of a wider picture, as economic, social and political factors must be taken into account when interpreting the validity of such a clause¹³².

The functional value of stabilization clauses in international petroleum agreements is a question that is also the subject of many views. Some believe that such clauses serve Absolutely no function; on the basis that international law already prohibits arbitrary or unlawful interference by a host state in an international investment agreement¹³³. The reasoning being that an IOC cannot realistically expect that the freezing effect of a traditional stabilization clause is capable of insulating it from outside influences taking place in the real world, because international law will be sensitive to such changes. Another view identifies the stabilization clause as having a financial function for the IOC if it is breached. Here the view is that even if the clause is deemed not to have any effect on the host states right to unilaterally alter the terms of the already concluded agreement, breaching it would give the investor a special right of compensation which would be higher than any other form of contractual breach not involving a stabilization clause. Such compensation would extend to prospective gains, or lost profits (lucrumcessans), which are currently not recoverable.¹³⁴

¹³¹Walde supra pg 46

¹³² Ibid pg 61

¹³³Ibid at pg 61

¹³⁴ Ibid

A final view is that is that such clauses may serve the function of a secondary protection mechanism; even in the case that international law already provides protection for any arbitrary interference by the host state. This view is that the function of the stabilization clauses would be to give the investor additional protection against any prima facie lawful grounds which international law recognizes for affecting changes to the concluded agreements.¹³⁵

From a practical standpoint, the function of the stabilization clause is that it assists in attracting foreign direct investment. It serves a major risk management function for the IOC, in the form of an undertaking that no changes will be effected to the agreed terms of the agreement; it therefore raises the IOC's confidence in its proposed interaction with the host state. Even if there is wrangling about its legal function such argument is academic, because industry practice has developed that stabilization clauses are considered an essential part of international petroleum agreements. So for the IOC and the host state its function is obvious, above all it provides a high level of clarity as to the expectations that each party has of the agreement that they have concluded¹³⁶.

The nature of the petroleum industry with its many risks means that stability is essential for all the parties involved in it to reach their respective objectives. The question of the legal and functional value of stabilization clauses from a theoretical perspective is not as important as the purpose that the clause serves in the agreement.

The inclusion of the stabilization clause in an international petroleum agreement means that the IOC has addressed the risks that the project poses to it, and attempted to mitigate one of them. Not directing one's mind to the issue that the fiscal or regulatory stability of a project might be unilaterally altered by the host state would be negligent, because such a risk is a real one¹³⁷.

¹³⁵ *ibid*

¹³⁶ Walde *supra* pg 47

¹³⁷ *Ibid*

The controversy surrounding the legal validity of stabilization clauses under international law should not be used to discount its ability to ensure a project's stability, because in many instances, a host state will honor the stabilization clause and decide that new laws will not apply to project agreements concluded before the enactment of those laws. The reason being that the disruptive effect that breaching such a clause has for the host state in terms going to arbitration and a probable requirement for the payment of compensation, may be too much trouble. What cannot be escaped is that the bargaining strength of host state and the IOC is what will determine the type of stabilization clause that is in the agreements and whether one is actually included at all. If the host state has enough petroleum, which may be extracted economically, it becomes solely a cost benefit analysis for the IOC. The specific means through which this may be done is always open to negotiation, and it would be wrong to believe that investment in a host state would be impossible without the inclusion of a stabilization clause in the agreement. The problem for the host state is that today the level of competition for investment is intense, and IOC's usually invest where they feel most comfortable in terms of taking the least amount of risk, and stabilization clauses form an essential part of an IOC's risk management Measures¹³⁸.

2.6.6 Confidentiality clause

While treaties, laws, regulations, and other legal documents defining the relationship between governments and private companies are public documents, oil, gas and mining contracts between governments and the extractive industries are shrouded in secrecy. They are usually unavailable to citizens in the resource-rich countries where the extraction takes place and they often contain confidentiality clauses, sections of the contract that outline who has access to the information in the contract, that explicitly limit public access¹³⁹. There is a growing international call to make the terms of

¹³⁸ Ibid pg 63

¹³⁹ Contracts transparency http://www.revenuewatch.org/training/resource_center/backgrounders/contract-transparency as accessed on 22th June 2014.

extractive industry contracts available to the public, and to establish new norms for what information is and is not disclosed in deals between government and industry¹⁴⁰.

Contracts Contain Commercially Sensitive Information, So they must Remain Confidential Governments and companies argue that contracts contain commercially sensitive information that could cause competitive harm if disclosed. Information cited as confidential includes: financial terms, work obligation commitments, and environmental protection and mitigation measures to be undertaken. One problem with this argument is that much of this information is already known in the industry (financial terms, for example). In such cases, information cannot be considered a commercial secret that deserves legal protection. Another factor is that often, the information that is commercially sensitive is not in the main contract that activists seek, but in other documents, such as environmental management plans and costs. Thus, contract transparency would not result in previously secret information being made available to competitors. Furthermore, any information that is highly sensitive can always be redacted prior to disclosure.¹⁴¹

The scope of confidentiality in clause 158(1) of the draft petroleum (Exploration and development Production and Value Addition) Bill 2010 creates a default assumption of confidentiality: "Except as provided under this Act and the Access to Information Act, 2005, all data submitted to the Government by a licensee shall be kept confidential and shall not be reproduced or disclosed to third parties by any party under this Act." The government also, oddly enough, ties its own hands in clause 158 by prohibiting itself from releasing information given to it by an active licensee unless that licensee gives its prior consent. In addition, clause 156 says that, while the minister must make available to the public all agreements, licenses, field development plans, and other approved arrangements, this obligation is "subject to confidentiality of the data and commercial interests".¹⁴²

¹⁴⁰ Revenue Watch Institute Contracts transparency http://www.revenuewatch.org/training/resource_center/backgrounders/contract-transparency as accessed on 22th June 2014.

¹⁴¹ Ibid

¹⁴² The Access Initiative. Critique of the Uganda Petroleum Bill (2010), p. 2

Compounding this confidentiality, clause 84 creates a scenario in which the government can require a company to release information about the operations of a facility, the content of which will remain secret for a period of time specified in a license.¹⁴³ This clause gives an unusually large amount of discretion to the minister responsible for petroleum activities. The clause should be deleted and replaced with standard regulations that should be explicitly outlined within the Draft.

The Draft must further create a specific definition of “confidentiality.” Otherwise, the term will serve as a catchall that allows some members of the government to avoid information disclosure whenever it suits their interests. However, even with a specific definition of confidentiality, the government could theoretically avoid transparency through clause 156 by creating confidentiality clauses in all licenses and contracts with oil companies. This would allow government officials to privately negotiate with oil companies to promote their own individual interests, without fear of public scrutiny or judgment¹⁴³.

Furthermore, the Draft needs to qualify clause 156 by specifically defining what it means by “harm”, “data” and “commercial interests”. The Draft should clearly define the commercial interest exception, so that it can be applied only in the limited circumstances that confidentiality really is in Uganda’s commercial interest. The Draft also needs to include language that is consistent with Uganda’s Access to Information Act of 2005 that subjects all withholding of information to a public interest test¹⁴⁴.

No doubt some oil companies will protest this transparency. This is because private business actors are free to keep the details of their transactions private. However, Uganda’s oil industry does not consist of private actors. The oil beneath Uganda’s soil belongs collectively to the people of Uganda. Thus, Ugandans have a right to know the details of how it is being managed¹⁴⁵. Any oil company that is unwilling to accept transparency is not the type of business partner that Uganda should have working

¹⁴³The Access Initiative. Critique of the Uganda Petroleum Bill (2010), p. 2

¹⁴⁴ Ibid

¹⁴⁵ Ibid

within its borders. Instead, oil companies must accept that the Ugandan people will oversee the production of their oil, and accordingly release contract details and data.

Article 41 of the constitution¹⁴⁶ provides for the right to access to information in that every citizen has a right of access of information in the possession of the state or any other organ or agency of the state except where the release of the information is likely to prejudice the security or the sovereignty of the state.

The Access to Information Act 2005¹⁴⁷ provides for protection of certain confidential information. Section 27 provides for protection of commercial information of third party if record contains; if information in confidence of third party supplies part c(ii) is to prejudice the third party in commercial competition.

A record may not be refused under subsection 1 insofar as it consists of information about the results of any product environment or other investigations supplied or by carried out on behalf of public body and its disclosure would reveal a serious public health or environmental risk.

Section 28 subject to subsection 2 information officer shall a request refuse to access if disclosure of the record would constitute action for breach of duty owed to a third party in terms of agreement.

In the case of Green watch Uganda Ltd vs. AG and Uganda Transmission Electricity Company,¹⁴⁸ the issue in the case was under Article 41 of the constitution of Uganda: whether the PPA was a public document within the meaning. The applicant an NGO and a company limited by guarantee incorporated in the republic of Uganda. The main mission of the company is the environmental protection through advocacy and education .It sought to obtain a copy of the power purchase agreements from the government of Uganda in vain .The government stated that the power purchase agreement is a comprehensive document with a lot of information including the importers of technical and important and commercial secrets .It therefore contains clauses of confidentiality and protection of intellectual property ,which do not permit

¹⁴⁶ The 1995 constitution of The Republic of Uganda pg 51

¹⁴⁷ Kampala Law Reports Laws of Uganda Acts 2005

¹⁴⁸ GREENWATCH UG LTS AG VS &UGANDA ELETRICITY TRANSMISSION COMPANY HCCT-00-CV-MC0139 OF 2001

them to make it available to the entire public .Following this the applicant commenced the action against the Attorney General and UETCL.

It was held that the state does not have to have to be party to the agreement in order for it to fall under Article 41 of the constitution .This was enough to trigger the application in Article 41 of the constitution as against the government of Uganda .The mere fact that a company is a limited liability company is not sufficient to disqualify the company from the possibility of being a government agency for purposes of Article 41 of the constitution. From the case above its clear that the other parts of the agreements stood except confidentiality clause .The right of confidentiality should not be seen to conflict with the law.

Another case that sets a precedent in the issue of confidentiality is the case of Daily Monitor Vs AG¹⁴⁹Lady Justice Faith Mwhonda rejected an application from the African Institute for Energy Governance (AFIEGO) and three other civil society organizations for permission to present evidence at an appeal by two journalists against a separate ruling which denied them access to the PSAs. In 2007 the journalists—Charles Mwanguhya and Angelo Izama, reporters for The Daily Monitor—filed a suit under Uganda’s Access to Information Act (2005), asking that the Attorney General disclose the oil agreements. In 2010, Nakawa Magistrates Court dismissed the case, saying that the journalists had failed to prove that disclosure was in the public interest.

2.6.7 Security Risks in the Upstream sector

Insecurity in the field experienced in the Exploration and production phase by International Oil Companies such as Terrorism as the case in the Oil fields in Nigeria is inevitable. Security Risk is the demarcation of risk, into the security silo, from the broad enterprise risk management framework for the purposes of isolating and analyzing unique events, outcomes and consequences. Security risk is often, quantitatively, represented as any event that compromises the assets, operations and

¹⁴⁹<http://www.oilinuganda.org/features/law/activists-vow-to-continue-legal-battle-for-disclosure-of-oil-agreements.html> March 29th 2012 as assessed on 25th June 2014.

objectives of an organization. 'Event', in the security paradigm, comprises those undertaken by actors intentionally for purposes that adversely affect the organization. The role of the 'actors' and the intentionality of the 'events' provides the differentiation of security risk from other risk management silos, particularly those of safety, environment, quality, operational and financial.¹⁵⁰

Anti-Terrorism Act¹⁵¹ part III provides for the offence of terrorism section 7 paras 2) b) A person commits an act of terrorism who, for purposes of influencing the Government or intimidating the public or a section of the public and for a political, religious, social or economic aim, indiscriminately without due regard to the safety of others or property, carries out all or any of the following acts—among others direct involvement or complicity in the murder, kidnapping, maiming or attack, whether actual, attempted or threatened, on a person or groups of persons, in public or private institutions;

2.6.8 MIDSTREAM LAWS

The Petroleum (Refining, Conversion, Transmission and Midstream Storage) Act 2013.¹⁵² gives effect to article 244 of the Constitution; to regulate, manage, coordinate and monitor midstream operations; to enable the construction, placement and ownership of facilities; to provide for third party access to facilities; to regulate tariffs for facilities; to provide for an open, transparent and competitive process for licensing by the Minister; to provide for additional and particular health, safety and environment regulations not sufficiently regulated in other laws; to provide for cessation of midstream operations under this Act and decommissioning of facilities; and to regulate any other matters related to midstream operations.

¹⁵⁰ C Kelleret et al, The Role of the Affect and Availability Heuristics in Risk Communication. Risk Analysis, Vol. 26, No. 3, 2006

¹⁵¹ Anti-Terrorism Act of UGANDA 2002

¹⁵² THE PETROLEUM (REFINING, CONVERSION, TRANSMISSION AND MIDSTREAM STORAGE) ACT, 2013.

2.6.9 DOWNSTREAM LAW

Petroleum Supply Act ¹⁵³ provides for the supervision and monitoring, the importation, exportation, transportation, processing, supply, storage, distribution and marketing of petroleum products; to provide for the establishment of the Minister responsible for the petroleum sector as the regulatory authority, to provide for the licensing and control of activities and installations, for the safety and protection of public health and the environment in petroleum supply operations and installations; to encourage and protect fair competition in the petroleum supply market; to repeal certain related laws; and to provide for connected matters.

2.6.10 Oil price risks In Downstream sector

Since the price of oil and gas is the primary factor in deciding whether a reserve is economically feasible, it is important to note that it should be taken seriously. The Uganda Oil Board Act¹⁵⁴ Section 3(b) provides for the function of the board to advise the minister and other relevant government authorities on the regulations of prices for the petroleum products at all levels and collect information on all matters relating to petroleum products and the various bodies related to such products.

Petroleum Supply Act¹⁵⁵ is an act to provide for the supervision and monitoring that importation exportation transportation processing supply storage distribution and marketing of petroleum products ;to provide for the establishment of the Minister responsible for the petroleum sector as the regulatory authority to provide for the licensing and control of activities and installations for the safety and protection of public health and the environment in the petroleum supply operations and; installations to encourage and protect fair competition in the petroleum supply market; to repeal certain related laws ;and to provide for connected matters.

¹⁵³ Petroleum supply Act 2003,Laws of Uganda.

¹⁵⁴Uganda Oil Board Act cap 328 25th January 1991

¹⁵⁵ The petroleum supply Act of 2003

Section 30(3) of the Act¹⁵⁶ provides that except where a petroleum supply emergency plan has been declared under section 34, the prices for petroleum products throughout the supply chain shall be governed solely by the rules of supply and demand in a free and competitive market.

Section 34 In relation to the above section states that in order to respond to interruptions in, or serious distortations of petroleum supply, occasioned by accidents, political disturbance, natural disasters or similar events or by negligence of any person, the commissioner shall in cooperation with governments departments and agencies that committees and participants in the supply chain prepare an emergency petroleum supply plan¹⁵⁷.

2.7. CONCLUSION

Oil and gas investing isn't going anywhere. Despite the risks, there is still a very real demand for energy and oil and gas fills part of that demand. Investors can still find rewards in oil and gas, but it helps to know the potential risks that go along with those potential rewards.¹⁵⁸

¹⁵⁶ Ibid

¹⁵⁷ The petroleum supply Act of 2003 section 34

¹⁵⁸ Ibid

CHAPTER THREE

CLASSICAL AND LIBERAL APPROACH TO RISK MANAGEMENT

3.0 Introduction

Throughout 1960's, the concepts of risk analysis methods were more restricted to academia and were quite new to the petroleum industry when contributions appeared from Grayson (1960)¹⁵⁹, Arps (1974)¹⁶⁰, Newendorp (1975)¹⁶¹, edited as Newendorp Schuyler, (2000) and Megill (1977)¹⁶². Newendorp emphasized that decision analysis does not eliminate or reduce risk and will not replace professional judgment of geoscientists, engineers, and managers. Thus, one objective of decision analysis methods, is to provide a strategy to minimize the exposure of petroleum projects to risk and un-certainty in petroleum exploration ventures.

The study by Allais (1956)¹⁶³ on the economic feasibility of exploring the Algerian Sahara is a classic example because it is the first study in which the economics and risk of exploration were formally analyzed through the use of the probability theory and an explicit modelling of the sequential stages of exploration.

According to Rose 1992¹⁶⁴ exploration could be seen as a series of investment decisions made under decreasing uncertainty where every exploration decision involves considerations of both risk and uncertainty.

¹⁵⁹ Grayson, C.J. 1960. Decisions under uncertainty, drilling decisions by oil and gas operators. Harvard Business School, Division of Research, Boston, Massachusetts, 402 Pg

¹⁶⁰ Arps, J.J, 1974. Prudent risk taking. Journal of Petroleum Technology, July, p. 711-716.

¹⁶¹ Newendorp, P.D. 1975. Decision analysis for petroleum exploration. 1st Ed., Pennwell, Tulsa, OK

¹⁶² Megill, R.E. 1977. An introduction to risk analysis Petroleum Publs. Co, Tulsa, OK

¹⁶³ Allais, M. 1956. Évaluation des perspectives économiques de la recherche minière sur de grands espaces - application au Sahara Algérien Revue de l'Industrie Minérale, Paris, January, p329-383

¹⁶⁴ Rose, P.R. 1992. Chance of success and its use in petroleum exploration. In: Steinmetz, R. ed., The Business of Petroleum Exploration. AAPG Treatise of Petroleum Geology – Handbook of Petroleum Exploration, Chapter 7, p. 71-86

An effective way to express uncertainty is to formulate a range of values, with confidence levels assigned to numbers comprising the range. Although geoscientists and engineers may be willing to make predictions about unknown E&P situations, there is a need to assess the level of uncertainty of the projects. So, it's necessary to define the value of information associated with important decisions such as deferring drilling of a geologic prospect or seismic survey. Information only has value in a decision problem if it results in a change in some action to be taken by a decision maker. Furthermore, this change must bring an expected benefit greater than the cost of information. The information is seldom perfectly reliable and generally it does not eliminate uncertainty, so the value of information depends on both the amount of uncertainty (or the prior knowledge available) and payoffs involved in E&P projects.

Rose (2001)¹⁶⁵ pointed out that each decision should allow a progressively clearer perception of project risk and exploration performance that can be improved through a constructive analysis of geo-technical predictions, review of exploration tactics versus declared strategy, and year-to-year comparison of exploration performance parameters. These findings showed the importance of assessing the risk behaviour of firms and managerial risk attitudes. Continued monitoring of the firm's level of risk aversion is necessary due to the changing corporate and industry environment as well as the enormous contribution generated by technological development in E&P. Over any given budgetary period, utilization of an established risk aversion level will result in consistent and improved decision making with respect to risk.

According to Professor Michael Pich¹⁶⁶ "The fact that the future is unknown means that we have to deal with risk. We have to deal with risk at the time that we make the decisions and go forward. The classical approach to risk management is basically to deal with a list of things. Number one, identifying possible events which may impact the

¹⁶⁵ Rose, P.R. 2001. Risk analysis and management of petroleum exploration ventures. AAPG Methods in Exploration, n.12, 178 p

¹⁶⁶ A View from INSEAD on Risk management May 2009: education.insead.edu.com as accessed on 29th August 2014

outcomes of your decisions. Then what you do is you begin to analyze those events: what is the potential impact and what is the probability that they may happen. Then you begin to rank the events: which ones are more important, and are the more impactful ones important or the higher-probability ones important? You begin to see you have some trade-offs here with how to deal with them."But in fact, this classic approach is just the beginning of a much more complex process, which involves questioning all your assumptions about risk management in business."

Risk Assessment is the process undertaken to evaluate whether there is a risk and, if so, how severe it is. Risk Management incorporates understanding, evaluating and prioritising risks for a given system and then implementing appropriate risk reduction strategies. Generally, risk cannot be measured accurately and is described using qualitative terms such as high, medium or low. In some instances risks can be estimated and expressed quantitatively, albeit within an uncertainty interval or probability distribution.¹⁶⁷

According to theory expounded by Van Fassen, An important aspect sought when trying to establish empirical causation in risk assessment is the Empirical efficiency. This concept developed by van Fassen depends on the state of the information and on the methods to determine it, at the time that the risk-modifying actions are being studied. Empirical efficiency requires probabilities, or other measures of uncertainty, and expert evidence to construct plausible models. However empirical knowledge is probabilistic and conditional on what is known at the time. Perhaps, the generalizability of results and necessary-for –purpose may be all that is needed (and thus be sufficient) for some risky decisions that must be taken under the precautionary principle. For risk assessment and management specifically, empirical sufficiency is a plausible basis for

¹⁶⁷ Management Strategies :Dan Deer ,Melita Stevens, ,Annet Davison ,Greg helm and Al dafour.www.WHO.int.com as accessed on 2nd July 2014

accepting the conceptualization, design, testing and generalizations of a model and its results.¹⁶⁸

3.1 Classical risk assessment framework

Hazard identification

Hazard analysis is a key component of both qualitative and quantitative risk Assessment and risk management. The source of the hazard is also determined

Exposure assessment

Identifying how and where the hazard enters the system by; Determining who is going to be exposed to the hazard, how the hazard will reach them and what acts on the hazard within the system

Risk characterization

Risk characterisation is the consolidation of information from exposure Assessment. Risk characterisation also involves considering the uncertainty involved in each risk assessment step. Other issues considered in risk characterisation include assessing the significance of the risk and whether it is acceptable, determining if action is required to reduce or eliminate the risk, and whether risk reduction can be carried out in a cost-effective manner¹⁶⁹

According to John H. Dittmer ¹⁷⁰ Project Managers need to recognize that all projects entail a certain degree of risk and that Risk management plan needs to be incorporated in project plans.

The ISO Definition of risk definition of risk is the 'effect of uncertainty on objectives'. In this definition, uncertainties include events (which may or may not happen) And uncertainties caused by ambiguity or a lack of information. It also includes negative and

¹⁶⁸ Environmental and Health Risk Assessment and Management. Principles and Practices. Series: Environmental Pollution, Vol. 9. Ricci, Paolo. 2006, XX, 480 p

¹⁶⁹ Ibid

¹⁷⁰ Risk Management and the PMBOK v 1 PMB, CISSP-ISSMP.

positive impacts on objectives. Many definitions of risks exist in common usage however these definition was developed by an international committee representing over 30 countries and is based on the input of several thousand subject matter experts.¹⁷¹

According to John H. Dittmer The causes of risk can come from various sources, such as: A requirement ,such as legal requirement imposed by laws or regulations ,An assumption such as the conditions in the market (which may change), A condition such as the maturity of the organization's project management practices and a Constraint, such as number of personnel available to work on any given phase of projects.

No¹⁷² industry is devoid of risk and the Oil and Gas industry is not an exception either. Companies invested in the business of oil and gas face their own unique set of risks, be it natural, manmade or inherent in their daily operations. Risk management solutions for the oil and gas business vary in general with the environment of business, the stakeholders and the nature of operations. Efficient risk management solutions not only need to be tailor made according to the industry but also to the specific business environment being faced. Project risk management is an integral part of any project in the oil and gas business. Companies providing risk management services need not only identify major risks in the business but also communicate risk management solutions in an effective manner. Risks when not managed diligently can have dire consequences on any Oil and Gas Company's balance sheet.¹⁷³

According to Eddy Tancredi, The oil and gas business is capital intensive in nature and operates with a large asset base and in highly risky environments. This drives the need for such companies to effectively manage their catastrophic risk portfolio. These market players need to continuously strive to optimize and strengthen their risk management models. General risk management models comprise of two primary phases namely the

¹⁷¹ Ibid

¹⁷² E.Tancredi: Oil And Gas Risk Management Market - Global Industry Analysis, Size, Share, Trends, Analysis, Growth And Forecast, 2014 – 2020 <http://www.transparencymarketresearch.com/oil-gas-risk-management.html> as accessed on JULY 30TH 2014

¹⁷³ Ibid

initial risk management and residual risk management. As the name suggests initial risk management is carried out initially to identify all risks associated comprehensively. Risks remaining after identifying initial risks are the residual risks. The residual risks are generally those having the potential to cause very high economic loss to the company and must be handled with extreme care and diligence. The types of risk management can be segmented as initial risks and residual risks.¹⁷⁴

Market players in the oil and gas business also face multiple exposures to risk. These risk exposures generally include exposures to business interruption, exposures to damage of assets, exposures to damages caused by third parties, exposure to people harm and finally exposures to environmental pollution. Management of all these exposures benefits the firm in many ways through adoption of the prevention before cure philosophy. Robust risk management not only increases the level of control oil and gas companies exercise over their business environment but also increases flexibility. An effective risk allocation between parties reduces risk perception of investors and results in cheaper financing of projects as well. Some of the risk management services include Hazard Identification and Evaluation, Pipeline Risk Analysis, Security Threat Management, Facility Site Evaluation, Blast Resistant Design & Construction Management, Quantitative Risk Analysis and Catastrophe Evacuation Modeling among others. Risk management can be applied for both onshore and offshore oil and gas facilities.¹⁷⁵

The global market for oil and gas risk management is poised for growth in the future. This is driven by the increased sensitivity of investors towards risk management and the dire consequence to the environment in the event of major risks being realized. Catastrophes like oil spills among others not only harm the environment but also cost the oil and gas companies billions of dollars in punitive damages. The major focus of these oil and gas giants is to effectively allocate risks to parties involved and minimize

¹⁷⁴ Ibid

¹⁷⁵ E.Tancredi: Oil And Gas Risk Management Market - Global Industry Analysis, Size, Share, Trends, Analysis, Growth And Forecast, 2014 – 2020 <http://www.transparencymarketresearch.com/oil-gas-risk-management.html> as accessed on JULY 30TH 2014

chances of occurrence which require strong risk management procedures. The regional market segmentation for these risk management services can be done as North America, Asia-Pacific, Middle East and Africa and Europe. Areas where exploration activities are the most concentrated are likely to require such services the most. Some of the major players dealing in such services include ABS Consulting, Tullow Oil Plc., Intertek Group Plc. and DNV GL AS. among others.¹⁷⁶

3.2 CONCLUSION

New methodologies are being developed to help to mitigate risk, and the academic and industrial sectors are substantially contributing to improve the overall process.¹⁷⁷ Most organizations have settled on using consistent risk analysis procedures to assess all Exploration and Production (E&P) projects. Some oil companies have developed their own risk analysis software and algorithms. Other companies have licensed customized software from several different vendors or consulting firms. An important result of this trend is that geological, Technical and economic parameters can be pre-served, thus facilitating subsequent project review for purposes of performance analysis. According to Rose (2001)¹⁷⁸ this provokes some inevitable changes in corporate culture, operating values and tactics, and the reward system.

¹⁷⁶ *ibid*

¹⁷⁷ Rose, P.R. 2001. Risk Analysis and Management of Petroleum Exploration Ventures. AAPG Methods in Exploration, n.12, 178 p

¹⁷⁸ *Ibid*

CHAPTER FOUR

COMPARATIVE ANALYSIS OF RISK MANAGEMENT BY INTERNATIONAL OIL COMPANIES IN UGANDA.

4.0 Introduction

Big oil multinationals¹⁷⁹ such as Chevron, Total, BP, Shell and ExxonMobil are household names in many countries not least because in addition to producing oil they refine and sell it in petrol/gas stations across the world. Yet these big names sit at the top of a global industry that involves just a few dozen very large companies—a kind of Premier League—and many thousands of smaller companies directly engaged in exploration or production or selling specialized geological, surveying, engineering, logistical and other services. Less globally famous oil Premier League players are Brazil's Petrobras, China's Petrochina and CNOOC and Russia's Lukoil and Gazprom. These are now in several respects as big as the high profile Western names, and rapidly gaining public attention outside their home countries. Other very big, but less famous players are Italy's ENI and Repsol of Spain.

These Premier League performers, commonly known in the industry as "oil majors," usually engage in all aspects of the oil business—upstream, midstream, downstream, from exploration down to retailing. For this reason they are also known in the business as "integrated" companies. Below them come a few hundred small but still sizeable players, most of which deal mainly or exclusively in exploration and processing. Tullow Oil PLC, briefly profiled below, is one such player. Many dozens of smaller companies, known in the oil business as "Independents," also engage in oil and gas exploration and production. Neptune Oil (owned by London-based Tower Resources) is one such example. If they strike lucky, they can make very big profits by selling on their licenses to bigger companies (as was the case with Heritage in Uganda). But the financial risks were very high when they failed to find oil in Uganda these company walked away

¹⁷⁹<http://www.oilinuganda.org/total> as accessed on 23rd June 2014.

with nothing but debts .Some small prospectors, who may raise venture capital {insert link to glossary term} to fund prospecting in high risk areas are known in the industry as “wildcatters.”¹⁸⁰

4.1 The China National Offshore Oil Corporation

(CNOOC)¹⁸¹ was established by China’s State Council (cabinet) in 1982, to serve as the Chinese partner of international oil companies exploring and extracting oil and gas in Chinese waters. The corporation and its numerous subsidiaries have grown steadily and strongly, to become one of the world’s largest “integrated” oil companies, working in all aspects of the industry, from upstream exploration, to refining, processing, storage and retailing. In 1994, the CNOOC made its first venture overseas, joining the U.S. Company, ARCO, in a project in Indonesian waters. In 2002, it expanded its Indonesian operations by buying the interests of the Spanish company, Repsol. The same year, CNOOC bought into upstream production off the coast of Australia. In 2005 it began to operate in Vietnam and Burma. The following year, it moved beyond Asia, starting operations in offshore Nigeria. It has since also begun production in Iraq (2010) and the U.S.A. (2011).CNOOC is a “state-owned company” in that the Chinese state owns a controlling stake in it. However, in 2001 it was listed on the New York and Hong Kong stock exchanges, and shares in the company are owned by private and institutional investors across the world. In 2010, CNOOC reported revenues of 354.8 billion Chinese yuan (US\$ 56 billion) and profits of 97.7 billion yuan. (US\$ 15.4 billion) According to a case study of china’s investment in Uganda’s oil and gas sector¹⁸²environmental and community risks can harm a business. The risks involved by China’s investment in Uganda include; Reputational risks for example international and local media criticism, Legal risks for example company enters long, costly litigation. Construction and operational risks for example local conflict slows operation, Host government risks for example government withdraws permits and license. Political risks

¹⁸⁰ Ibid

¹⁸¹ Ibid

¹⁸² Kirk, H ;World Resource Institute: A case study of China’s Investment in Uganda .pg 23

for example National opposition to the company prevents future business opportunities and Financial Risks for example companies loose access to finance.

According to the case study there are some Tools to improve risk management¹⁸³. Some important tools include:

- Environmental and social impact assessments– to identify risks of the project
- Strategic environmental assessments– to understand the impacts on a broader ecosystem (beyond artificial boundaries of specific oil blocks)
- Community engagement – to build mutual trust with communities living near the project
- Grievance mechanisms– to provide communities with a way to raise concerns directly with the company
- Disclosure of information– to avoid rumors and promote understanding

4. 2 Total SA

It was incorporated in 1924¹⁸⁴, when it was known as the French Petroleum Company. Within two decades it had become an “integrated” company, involved in exploration, production, refining and marketing of oil and gas products. After World War II it began extensive operations in French colonies in Africa—notably Algeria and the Gulf of Guinea—where it remains a major oil player. In 1999 Total took over Petrofina (originally, the Belgian Petroleum Company), which, earlier in the '90s, had briefly held an exploration license in Uganda. The following year Total also took over its rival French company, Elf Aquitaine.

Today, Total has operations in more than 130 countries, and is one of the world’s “super major” energy companies. It engages in all aspects of the petroleum industry, including petrochemicals and fertilizers for industrial and consumer markets. It also has interests in the coal mining and power generation sectors, including renewable energies, notably solar-photovoltaic power. Total is an important player in East Africa’s Great Lakes region. In addition to its recently acquired interests in Uganda, it has

¹⁸³ Ibid

¹⁸⁴ <http://www.oiliuganda.org/total> as accessed on 23rd June 2014.

stakes in exploration and production in Kenya, Tanzania and the Democratic Republic of Congo. In 2010 the company reported revenues of 159 billion Euros (US\$ 209 billion) and profits of 10.6 billion Euros (US\$ 13.9 billion). Total is listed on the Paris and New York stock exchanges.

By working closely to a broad variety of customers - producers and consumers of oil and gas, financial institutions involved in energy and oil financing as well as investment funds - TOTSA TOTAL OIL TRADING SA¹⁸⁵ has indeed been successful in setting up a variety of risk management systems in client-specific contexts, that are currently used by Risk Managers for day-to-day risk follow-up and operational hedging decisions.

A recent example of risks faced by such companies working in the oil and gas sector especially offshore drilling operations is that of Total's Elgin platform off the coast of Aberdeen, which was reported to be leaking methane gas and oil. Total, the operator of the Elgin platform 140 miles east of Aberdeen, confirmed that in addition to a growing methane gas "cloud", a 4.8sq km sheen of oil "condensates" had covered the surface of the water near the platform. But the company played down risks of major marine or air pollution. Marine pollution specialist and honorary research fellow at the University of Liverpool, Martin Preston said that from an environmental standpoint, both greenhouse gas emissions and local fish deaths were a concern. "The methane release represents a very significant explosion hazard, and of course methane is a potent greenhouse gas. The gas in this field is 'sour gas' – i.e. it contains hydrogen sulphide which is very poisonous to humans and aquatic life – so localized risks to marine life are likely. The hydrogen sulphide content of the current release is unclear at present. Localized fish kills cannot be ruled out." In risk management by Total, The oil is either coming from the drilling mud or from the well head because there is always some oil in natural gas reservoirs. This is a spill that can be managed by mechanical methods as soon as the danger of explosion due to the emitted methane gas is dealt with¹⁸⁶.

The twin Elgin and Franklin gas fields, discovered in 1991, are in a geologically complex area of the North Sea around 5km deep below the sea bed. Average daily production is

¹⁸⁵ <http://www.totsa.com/pub/risk/about.php?rub=3> as accessed on 23rd June 2014

¹⁸⁶ Report by John Vidal environmental.guardian.co.uk Wednesday 28th march 2014 14.01 BST

around 230,000 barrels of oil equivalent. Two connected platforms are used by Total, one of which is reserved for drilling, the other for separating the oils and gases which are sent directly through a BP-operated pipeline to Kinneil in Scotland and Bacton in Norfolk¹⁸⁷.

4.3 Tullow Oil PLC

Tullow oil ¹⁸⁸ is named after a small town in Ireland which was home to its Chief Executive Officer, Aidan Heavey, who founded the company in 1985. It is now based in London, UK, but describes itself as "Africa's leading independent oil company." In 2010 it reported revenues of more than US\$1, billion and US\$234 million profits.

For the first 15 years of its life, Tullow remained a small operator, with interests in South Asia and Europe and annual revenues below US\$ 10 million. In early 2000 it bought some productive North Sea gas fields from BP but also began to turn its attention to exploration in Africa. In 2004 it bought Energy Africa and the following year was boosted by gas discoveries in Gabon and Mauritania. The company's growth was consolidated in 2006 by a series of oil and gas discoveries in the Ugandan exploration areas it had acquired from Energy Africa. The same year it bought the Australian company, Hardman Resources, also taking over their Ugandan exploration licences. Further success came in 2007 with the company's largest ever discovery, in offshore Ghana. Tullow is now exploring in Kenya and Ethiopia and has made recent discoveries in Sierra Leone.

The company now holds more than 100 exploration licenses and interests in 67 productive fields spread across 22 countries worldwide. Platts, a specialist publication reporting on extractive industries, ranks it 251 out of the world's 500 largest oil companies. Tullow is listed on the London Stock Exchange, where it is one of 100 companies included in the FTSE share index, and on stock exchanges in Ireland and Ghana.

¹⁸⁷ Ibid

¹⁸⁸<http://www.oilinuganda.org/total> as accessed on 23rd June 2014

To manage major accident hazards across the global operations, Tullow has adopted the 'safety case' approach to manage risk to a level that is 'as low as reasonably practicable'; even where there may not be a regulatory requirement to do so. This is a well-embedded practice in the UK oil and gas industry that is used to identify, assess and document major accident hazards. For all project work, Tullow uses its own environment standard ('toes'), as well as ISO14001 EMS requirements, and aim to meet the intent of universally recognized good practice such as that developed by the international lending institutions and other stakeholders. Operational activities and work tasks are subject to a task risk assessment or job safety analysis which considers possible risks to people, community, environment and physical assets.¹⁸⁹

Tullow Oil Employs Environmental and Social Impact Assessment (ESIA). When a project is selected and defined, it carries out a scoping process for a detailed impact assessment. This examines the interaction between key project characteristics and prevailing environmental sensitivities. The goal is to identify approaches and design features that will minimize the environmental impact of the project. Social impacts are also considered as an integral part of this process¹⁹⁰.

ESIAs are a consistent feature of Tullows' project EHS risk management strategy regardless of legislative obligation. It always looks to find new ways of working to increase our understanding and to improve communication around the potential environmental and social impacts of our activities. In 2010 Tullow Oil incorporated Geographical Information System (GIS) information as a core element of its approach. GIS is a way of representing and analyzing spatial information by linking a geographical location to its attributes. In relation to the ESIA process GIS is used to gather and organize field information and to deliver the ESIA in an informative and interactive format¹⁹¹.

In addition to ESIAs Tullow Oil has started to utilize the power of GIS technology as a means of evaluating the sensitivities of new country, region or block entry. Using GIS as a risk mapping tool allows Tullow to visually display sensitivity information around

¹⁸⁹ www.tullowoil.com as accessed on 16th June 2014

¹⁹⁰ Ibid

¹⁹¹ Ibid

protected areas, endangered species distribution, indigenous people, cultural heritage, political and security risks in a visual and easily understood format that can be utilized to inform decision making. This information is then used in the development of scoping studies and impact assessments. To date this approach has been used in both Kenya and Ethiopia¹⁹².

In the Operating in sensitive areas, Increasingly Tullow is working in environmentally sensitive areas and environmental footprint is growing each year. The researcher found out that A multi-disciplinary team formalizes a process for evaluating activities in protected/sensitive areas, and all operational functions such as New Ventures (country entry), the Global Exploration Leadership Team and the Development Leadership Team follows this system as part of their planning processes and activities¹⁹³.

With effective risk management viewed as an intrinsic part of good corporate governance, companies have to demonstrate that they are taking a sophisticated attitude to risk and fully understand their insurance needs. At the same time, developments in the energy insurance industry mean oil and gas companies are facing increasing risks. The energy insurance market has seen a substantial increase in asset values over this period. Meanwhile, many operate in very testing environments¹⁹⁴.

4.4 CONCLUSION

With effective risk management viewed as an intrinsic part of good corporate governance, companies have to demonstrate that they are taking a sophisticated attitude to risk and fully understand their insurance needs. At the same time, developments in the energy insurance industry mean oil and gas companies are facing increasing risks. The energy insurance market has seen a substantial increase in asset values over this period. Meanwhile, many operate in very testing environments¹⁹⁵.

¹⁹² www.tullooil.com as assessed on 16th June 2014.

¹⁹³ *ibid*

¹⁹⁴ Risk specialist www.jltgroup.com issue no.10 by sue Corpemann editor Strategic risk magazine

¹⁹⁵ Risk specialist www.jltgroup.com issue no.10 by sue Corpemann editor Strategic risk magazine

CHAPTER FIVE

PRESENTATION, FINDINGS ANALYSIS AND INTERPRETATION

5.0 Introduction

The researcher conducted interviews and collected Literature from, Risk Management Expert Advisory Bodies in AON Uganda and Tullow Oil Company though not much data was collected from this company since the risk of confidentiality of information which could jeopardize the future of the company because of competition was at stake and a major concern according to comments made by the Operational Manager Tullow Oil Uganda Ltd. After a review of the researcher's topic by the respondent, the researcher was allowed and advised to use Tullow website which contains the relevant materials on Risk management¹⁹⁶.The reference of the company data from the internet came in handy to culminate the situations on the ground.

The data presentation will therefore be guided by the Interview guide used to collect information.

5.1 The Strategies ensured to the Risk Management

The researcher conducted research on AON Risk management Solutions the leading global provider of risk management, insurance and reinsurance brokerage, and human resources solutions and outsourcing services Uganda Branch. According to AON Risk management Solutions department in Uganda offices, the researcher discovered that Aon unites to empower results for clients in over 120 countries via innovative and effective risk and people solutions through industry-leading global resources and technical expertise. The researcher also learnt that the having its Headquarter in London, Aon is a world leader in risk management, retail, reinsurance and wholesale

¹⁹⁶ The operational Manager Tullow Oil at the Tullow Oil Company operations Yusef Lule road Kampala 20th June at 10.00am 2014.

brokerage, claims management, specialty services and human capital consulting services.

The Chief Executive Officer Maurice Amagola of AON Risk Solutions commented¹⁹⁷ on AON political Risk Experts who use a combination of market experience, innovative analysis tools and tailored risk transfer program to help minimize and manage exposure to risks. Aon's political risks experts design risk transfer and management programs to respond to adverse political actions, providing a combination of balance sheet protection and business facilitation. Insurance can be purchased on a standalone basis, or within a tailor made portfolio to give you greater flexibility of coverage. Aon political risk experts can also conduct political and security risk assessments of all the countries and regions, allowing an oil company to make informed decisions regarding operations and investments.

Also the researcher discovered that AON's Political Risk Map is Aon's benchmark review of the political risks global corporations face which provides an invaluable guide to political risk insurance markets' perceptions of key risks around the world. Specific risks featured in the map include government interference, legal and regulatory risks, sovereign non-payment and supply chain disruption.

The researcher conducted research from the officials of AON Uganda Risk management Solutions¹⁹⁸ and found out that on the issue of Security risk faced by Oil Companies, Aon's unique approach to counter terrorism risk management combines crisis consulting and risk transfer expertise to ensure the most appropriate and cost effective program\ in place. Terrorist attacks are now regarded as a foreseeable risk. In today's litigious society, businesses need to ensure corporate governance and duty of care responsibilities is integral to their crisis management strategy.

The researcher reviewed the EHS Policy Document of Tullow oil from the internet and found out that ¹⁹⁹Tullow Oil is committed to high standards of Environment, Health and Safety (EHS) performance across its business. Its goal is to preserve biodiversity and promote sustainable development by protecting people, minimizing harm to the

¹⁹⁷ AON Uganda Risk solutions Akii Bua Nakasero road Kampala 15th June 2014 at 11.00am

¹⁹⁸ Ibid

¹⁹⁹ .EHS policy document of Tullow Oil Published in 2009

environment and reducing disruption to our neighboring communities. It seeks to achieve continual improvement in its EHS performance. Tullow Oil has established an EHS management system to ensure that it plans and organizes EHS efficiently and effectively. It provides and maintains safe places, safe systems of work and suitable procedures. It minimizes discharges, emissions and waste that adversely affect the environment. Tullow oil provide staff and contractors with appropriate EHS training to perform their tasks competently, safely and with due regard for the environment also assess and either eliminate or reduce to acceptable levels risks from our activities. The researcher found out also that Tullow complies with all applicable EHS laws and regulations, and apply responsible standards where the legislation is inadequate or non-existent. Also Tullow Oil promotes a culture of reporting and investigating accidents, incidents and near misses, and the sharing of lessons learned and has an audit programme that verifies compliance with this policy and monitors our EHS performance. The researcher also found out that the EHS policy is reviewed periodically to ensure its ongoing suitability and effectiveness. While it provides a strong and visible leadership commitment to EHS, everyone at Tullow Oil has individual authority, responsibility and accountability for the safety of themselves and others, and an obligation to actively participate in promoting an effective EHS culture²⁰⁰.

The Board is committed to maintaining high standards of corporate governance²⁰¹. As Tullow continues to grow in size and complexity, one of the greatest challenges that it faces is to ensure that it has in place the right people and processes to manage risk and opportunity effectively, without stifling the agility, innovation and sense of personal initiative and commitment that have underpinned the Group's success to date.

The Board is committed to ensuring that high levels of corporate governance are achieved. This is integral to the Board's overall aim to create a culture which places strong emphasis upon high standards of business conduct, ethics and integrity amongst the Company's employees, suppliers, contractors and other industry partners. This is embraced in Tullow's Code of Business Conduct. This Code has been updated to provide

²⁰⁰ Ibid

²⁰¹ Combined Code on Corporate Governance Published in June 2008 financial report website www.frc.org.uk as accessed on 15th June 2014.

further guidance on a range of topics and to ensure compliance with the new UK Bribery Act. Tullow also believes in and promotes a policy of transparency in all its dealings to ensure that shareholders and other stakeholders are treated fairly.²⁰²The Combined Code For 2010, as a UK company with a premium listing on the London Stock Exchange, Tullow Oil plc is required to make certain statements relating to the way it is governed, covering issues laid down in the Combined Code on Corporate Governance published in June 2008. In compliance with these requirements, the Group's 2010 Annual Report describes the manner in which the Company has applied the main principles of governance set out in Section 1 of the Combined Code and complied with the detailed Code provisions. It is the Board's view that the Company has fully complied with the Combined Code throughout 2010. The main principles of the Code focus on Leadership, Effectiveness, Accountability, Remuneration and Relations with Shareholders.

The researcher reviewed from the internet Key corporate responsibility policies and systems such as²⁰³; **Governance**. The Code of Business Conduct sets out our general business principles, Ethics and Integrity policy, whistle blowing policy and Human Rights policy. The issue of **Environment, Health and Safety**, Tullow oil manages EHS through the Senior Management Committee (SMC), the Group EHS Leadership Team, Tullow safety rules, Tullow Oil Environmental Standards (toes) and EHS and related policies and EHS Commitment Statements. ISO14001 accreditation for Environmental Management System since 2003. Uganda was certified to ISO14001 in July 2010. Tullow now has ISO14001 across its key activities in London, Dublin, Cape Town, Europe, North Africa, Bangladesh and Uganda. Ghana became certified in late 2011. Detailed crisis management and emergency response plans and dedicated crisis management facilities designed to ensure it can respond rapidly and appropriately to any incident. On the issue of the **People**, Tullow and each other, integrity and respect and entrepreneurial spirit and initiative. Group HR policies which are generally higher than legal requirements that set the standards that are followed throughout Tullow.

²⁰² Combined Code on Corporate Governance published in June 2008 financial report website www.frc.org.uk as accessed on 15th June 2014

²⁰³ Ibid

These are supported by detailed employee handbooks and form part of induction processes too. Equal Opportunities and Harassment policies. All Tullows policies are reviewed regularly to ensure they reflect best practice. Local legislative requirements form part of individual business unit, in-country or regional procedures. On **Sustainable supply chain** Tullow's contracts meet the principles of the UN Supplier Code of Conduct. A Suppliers Charter is being drafted for approval in 2011. Chain Management department sits independently on Tullow's Contracts Review Board to ensure that all contracts, both national and international, meet the company's requirements around national content and sustainability. Group Local Content policy and procedures to ensure we fully support capacity building for the industry in-country. On **Social enterprise** social enterprise guidelines that frame investment in local communities. Social Enterprise Committee ensures our investment is aligned with business activities. A working group has been set-up to review all requests for support for projects from the Education and Enterprise Development Fund.

From the reviewed annual report of Tullow Oil of 2011 by the researcher Governance, corporate responsibility and risk framework was discovered.²⁰⁴ Tullow has a strong governance and organizational framework that gives direct accountability and ownership to individuals, promotes transparency in our activities and sets the standard for acceptable and ethical behavior. In particular, risk management and corporate responsibility are embedded in how it runs its business. Principle risks and uncertainties in relation to the Group's financial and operational performance are set out in our 2011 Annual Report. One of the Board's 2011 objectives, which are tracked monthly, is to monitor the following corporate responsibility risks: External stakeholder relationships, Health and safety, with particular emphasis on malaria awareness and prevention, UK Bribery Act and implementation of Tullow's Code of Business Conduct, Organizational capacity as the business continues to grow rapidly; and Maintaining Tullow's strong culture.

In Report of Tullow Oil as researched by the researcher, Tullow oil has also described the long-term risks which it believes could adversely impact its employees, operations,

²⁰⁴<http://www.tullow.oil.com> as accessed 14th June 2014. Business review annual report of 2011.

assets and performance. It has identified four specific long-term corporate responsibility risks: Loss of key staff and succession planning; EHS failures and security incidents; Political, industry or market changes in the environment negatively impact the ability to grow and manage business; and Key country risks.

The researcher found out that Risk management is the overall responsibility of the Board. Each Executive Director has a defined responsibility and accountability for a specific aspect of the Group's key risks. For instance, the Audit Committee also plays an important role. For example Executive Directors Mr. Aidan Heavy Has the responsibility for external affairs, stakeholder's engagement, social enterprise and development fund. That the chief operating officer is in charge of Environment, Health and Safety Crisis management. Exploration manager plays the role of Information systems management. Senior management Committee is responsible for the day to day running of the business, the annual business plan and effective ongoing risk management.

The researcher reviewed from the Internet materials that the EITI support statement, which In May 2011, and found out that Tullow formally became a corporate supporter of the Extractive Industries Transparency Initiative (EITI).²⁰⁵ The EITI is a coalition of governments, companies and civil society and sets a global standard to promote transparency in the oil, gas and mining sectors. The goals of EITI are aligned with our goal of creating shared prosperity. Tullow is actively involved in the EITI implementation processes in the countries in which it operates that are implementing the EITI standard. Uganda's National Oil and Gas Policy of 2008 approved by Cabinet in February 2008, recognizes that "Openness and access to information are fundamental rights in activities that may positively or negatively impact individuals, communities and states. The Policy is consistent with the internationally-recognized Extractive Industry Transparency Initiative (EITI) disclosure standards."²⁰⁶

The researcher reviewed from the internet and found out that Uganda has a rapidly growing liberal economy and a favorable investment climate.²⁰⁷ Human Rights statement

²⁰⁵ Extractive Industries Transparency Initiative EITI Rule 2011 Edition Including the validation guide <http://eiti.org/> as accessed on 15th June 2014.

²⁰⁶ World Resource Institute Working paper No.1 of January 2011 .Avoiding the resource curse pg 4

²⁰⁷ Investment Code Of Uganda Statute No.1 of 1991.

Policy is a strategy used by Tullow Oil. The researcher reviewed from the internet that Tullow Oil Company supports and respects the protection of internationally recognized Human Rights. It upholds and promotes Human Rights within its sphere of influence, which can include, but is not limited to, employees, contractors, local communities, suppliers, security forces, business partners and governments. This Human Rights statement of policy is applicable to all of the Group's business operations. It covers the rights of employees and the rights of local communities. Tullow is also actively engaged in community rights where employees and contractors, Non-Governmental Organizations and governmental bodies to address the rights of communities surrounding operations. The following activities were discovered to enable the policy; Conducting Environmental and Social Impact Assessments and community consultation processes to identify potential human rights group's concerns and examine ways to proactively address them

Respecting the cultures of indigenous peoples and recognizes their rights as distinct peoples to practice their traditions and customs. Actively promoting community empowerment and improvement to quality of life through our Social Enterprise Policy.

It was discovered by the researcher through Tullows website²⁰⁸ that, Tullow Oil upholds Employee rights by among others for example; providing safe work places and fair terms and conditions of employment, equal opportunities employer, development of all our employees by providing a working environment that fosters new talent and ways of thinking, ensuring that employees and contractors work in safe conditions with safe systems of work where suitable procedures are provided and maintained. Discrimination is not tolerated in Tullow and current and potential employees are not preferred on the basis of personal characteristics such as age, race, nationality, ethnicity, sexual orientation, gender or religion and All employees have the right to join trade unions, where such rights are recognized by law.

The researcher reviewed from the internet materials that, Risk management in the oil and gas industry is inherently hazardous. As a result, identifying, assessing and managing exposure to risk is at the core of the approach to EHS management.

²⁰⁸www.Tullow Oil.com as accessed on 23rd June 2014

Managing EHS risk management process considers all forms of EHS risk, from major accident hazards and significant environmental impacts through to workplace hazards such as slips, trips and falls. Tullow Oil Company maintains a risk inventory that sets out the Group's top 10 EHS risks ranked by significance and manageability. This provides a focus for strategic risk management and is monitored and managed by the EHS leadership team²⁰⁹.

Asset protection is the collective term used to describe security risk management, emergency response and crisis management measures. The researcher reviewed from the internet the Security risk management used by Tullow Oil Company in Uganda.²¹⁰

Tullow treats any security threat to people and physical assets very seriously and takes steps to identify access and manage such threats. Many of the locations in which it operates present security risks in the form of general criminal or subversive activities.

Measures adopted to anticipate, assess and counter these threats include:

- Travel and in-country briefings for staff and contractors;
- Meet and greet arrangements at international work locations;
- EHS inductions, including personal security measures, at all work locations;
- Identification and nomination of 'no-go' areas in certain locations;
- Physical security arrangements, including guarding and securing company and domestic premises;
- Location-specific evacuation plans;
- Deployment of Tullow asset protection advisers where appropriate; and
- Audits and reviews to assess and assure the ongoing effectiveness of our security measures.

The researcher also reviewed that Crisis management and emergency response measures are also an important risk factor to manage by Tullow Oil Company. Tullow Oil Company has arrangements in place to respond effectively to a range of reasonably foreseeable emergency or crisis scenarios. Emergency response (ER) and crisis

²⁰⁹www.tullooil.com as accessed on 16th June 2014.

²¹⁰Ibid .

management (CM) arrangements are geared to the protection of people, the natural environment and physical assets. They include:

- Oil pollution emergency plans (OPEP), Tullow crisis management plan, Oil spill contingency plans (OSCP)
- Country specific emergency response plans
- Trained and competent crisis management and emergency response teams
- Location-specific emergency response hardware (life-saving appliances, fire-fighting equipment etc.)
- Fit-for-purpose crisis management and emergency response facilities
- Interfaces with external organizations and authorities
- Membership of external response support bodies (e.g. Oil Spill Response Limited – OSRL)
- Drills and exercise programmes to test and improve emergency response and crisis management preparedness.²¹¹

Climate change is also key risk factor considered for management by the researcher in which as observed from review from the internet, Tullow oil is working towards a greater understanding the contribution to climate change at both local and global level as the growing environmental footprint is driving higher levels of emissions²¹². The tracking of Tullow's atmospheric emissions from production, drilling and well test activities. Atmospheric emissions comprise Carbon Dioxide (CO₂) and Methane (CH₄). Tullow has had Group-level assurance of our emissions data for four years. currently Tullow working to minimize its operational impact on the environment through energy efficiency initiatives, monitoring and evaluation activities, emissions management programs, effective planning of operational life cycles through ESIA's and compliance with national and international requirements. As a matter of course we incorporate emissions control in the design phase of all major projects and developments. Tullows IMS incorporates and underpins environmental commitment to minimize pollution and

²¹¹ <http://www.tulloil.com> as accessed on 16th June 2014

²¹² Ibid

emissions. ISO14001 certification requires Tullow to commit to avoiding releases as well as demonstrate continual improvement in environmental performance²¹³.

Risk management is central to how Tullow runs its business and is fundamental to how it creates value and delivers substantial returns to shareholders. It is an integral part of the business model and the Board level responsibility. Its approach to risk management aims to identify key risks as early as possible and to either reduce or remove those risks. If that is not possible, then it responds when a risk crystallizes to reduce that risk to an acceptable level. Executive Directors have designated responsibility for each key risk. The Group's new Regional and Business Unit organization structure has embedded risk management more deeply in the running of business. Each Region is led by a Regional Business Manager (RBM). Each RBM has strategic responsibility and accountability to the Executive team for the successful delivery of the Group's business plans for their Region. A large part of their remit is identifying, mitigating and reporting on risks and opportunities for risk management and mitigation²¹⁴.

Operational assurance for risk is provided by three cross-functional groups – the Global Exploration Leadership Team (GELT), the Development & Operations Leadership Team, including EHS responsibility, and the Financial Risk Committee. Combined, these three groups provide greater support for aligned and effective risk management across the Group. Day-to-day management of risk is assigned to individual managers and each employee is personally responsible for managing risk within the remit of their role. The Board of Directors, through its regular meetings, provides oversight of the strategic direction of the business and approves the annual budget and business plan.²¹⁵

The detailed annual business plan and budget process, extending over a three-year period, provides the principal metrics against which the performance of the Group is measured. These include annual objectives and targets covering production, development, exploration, EHS and financial performance, which are set at a business unit level. Business plans are agreed with the Board together with risks to delivery and defined operational targets. Key risks for strategic delivery of the Group's business

²¹³ *ibid*

²¹⁴ <http://www.tulloil.com> as accessed on 16th June 2014.

²¹⁵ *Ibid*

plans and objectives are then collated as part of the Board's annual review of Group strategy. The Audit Committee also plays a key role in reviewing the effectiveness of Tullow's internal controls and financial risk management.²¹⁶

Risk management is a dynamic and critical business function as it is important to help achieve long-term shareholder value and protect the business, people, assets, capital and reputation. The researcher reviewed from the internet response to changing risk by Tullow Oil Company and discovered that it operates in a dynamic environment where responding effectively to changing risks is key to its continued success. During 2011 it addressed emerging risks in the following ways: In 2012, the Group is rolling out a new security standard that will apply to all Tullow sites and activities. Tullow Safety Rules were implemented during the year to reinforce existing safety standards for managing high risk operational activities. These rules comprise a set of requirements designed to manage day-to-day risks associated with operations that have the potential to adversely affect employees, contractors, the environment and surrounding communities. These rules were developed using industry best practices, guidelines and standards to reinforce existing Tullow and host government regulatory commitments²¹⁷.

The Safety Rules are being embedded through a range of activities including: Training of staff throughout the organization; Working with contractors to enable them to implement the rules when engaged in operations on Tullow's behalf; and Dedicated Intranet site and Safety Rules booklet distributed to employees to support the education process. Tullow's Integrated Management System (IMS) has upgraded during the year to reflect the continuous growth in the business and increased complexity of its portfolio²¹⁸. The IMS sets the minimum business standards to be used throughout Tullow Oil's activities through a framework for managing all business activity throughout the organization and provides a high level of business assurance by:

- A systematic approach to critical business activities;
- High standards in business and EHS performance;
- Legislative compliance throughout all operations;

²¹⁶ Ibid

²¹⁷ <http://www.tulloil.com> as accessed on 16th June 2014.

²¹⁸ Ibid

- Sound risk management, planning and decision making;
- Efficient and cost effective planning and conduct of operations;
- Clear assignment of responsibilities; and
- Continuous improvement in all areas of the business.

As part of our 2012 to 2014²¹⁹ business plan for Tullow oil as reviewed by the researcher from internet materials , the following key risks and uncertainties in relation to the Group's financial and operational performance were identified for the period:

- Completion of the Ugandan farm-down (achieved February 2012), followed by delivery of a basin development plan and timely approvals for this from the Ugandan authorities;
- E&A campaign associated risks (approximately 20 high-impact wells are planned in 2012);
- Timely remediation of Jubilee production (2012/2013) and delivery of Group production targets;
- Government relations/stakeholder engagement with particular reference to the 2012 Board objective to significantly improve political and economic risk information and country risk profiling;
- Achieve the appropriate balance between cash flow from operations, equity/debt market opportunities and portfolio management activities; and
- Manage shareholder expectations, particularly with regard to the Group's long-term strategy, production profile and funding²²⁰.

5.2 The Significance of Risk Management control by International Oil

Companies currently operating in Uganda and compliance with relevant

Regulatory Paradigm; Case of Tullow

The chief Executive manager AON Risk management Solutions confirmed to the researcher that the oil and gas industry is inherently high risk and as a consequence the

²¹⁹ <http://www.tullowoil.com> as accessed on 16th June 2014.

²²⁰ Ibid

management and mitigation of risk is a dynamic and vital business process. Risk management helps in protecting business, people and reputation of the company. By doing so it enables protect the communities and the environment, and enhance our relationships with host governments.

Risk management is central to how business is run and fundamental to the creation of value and the delivering of substantial returns to shareholders. It is an integral part of business model and is a Board level responsibility. The researcher found out that the approach to risk management aims to identify key risks as early as possible and to either reduce or remove those risks. If that is not possible, then responding when a risk crystallizes to reduce that risk to an acceptable level.

From Tullows website, the researcher found out that Executive Directors have designated responsibility for each key risk. The Group's new Regional and Business Unit organization structure has embedded risk management more deeply in the running of business.²²¹

Each Region is led by a Regional Business Manager (RBM). Each RBM has strategic responsibility and accountability to the Executive team for the successful delivery of the Group's business plans for their Region. A large part of their remit is identifying, mitigating and reporting on risks and opportunities for risk management and mitigation. Operational assurance for risk is provided by three cross-functional groups – the Global Exploration Leadership Team (GELT), the Development & Operations Leadership Team, including EHS responsibility, and the Financial Risk Committee. Combined, these three groups provide greater support for aligned and effective risk management across the Group. Day-to-day management of risk is assigned to individual managers and each employee is personally responsible for managing risk within the remit of their role.²²²

²²¹ Tullow Oil Business Review 2011 Annual Reports and Accounts accessed on 23rd June 2014

²²² Tullow Oil Business Review 2011 Annual Reports and Accounts

5.3 Roles played by Ugandan government in creation of Legal framework for Risk Management by International Oil Companies.

The researcher obtained data from officials under ministry of energy and mineral resource on risk management and found out that the Government of Uganda with support from the Norwegian Government is strengthening state control and management of the Oil and Gas sector in Uganda and one of the key areas identified is Environmental Management, that aims at achieving the following;

- Carrying out a Strategic Environmental Assessment (SEA) for the Albertine Graben.
- Capacity development programs in all relevant institutions in the environment sector, for areas

Identified as relevant/critical to the oil and gas sector with particular emphasis on managerial Skills.

- Environmental and biodiversity related policies put in place/ reviewed with respect to oil and gas including biodiversity off-sets, and presented for approval.
- Existing Acts reviewed, recommendations drafted and presented for approval.
- Management plans for protected areas, and relevant sector plans for the AG, reviewed and updated taking the oil and gas issues into consideration
- An environmental monitoring system for the AG, with clear and agreed indicators, established.
- Environmental regulations and standards relevant to the oil and gas sector developed
- Hazardous waste management system strengthened.
- Framework for compliance monitoring and enforcement of the oil and gas industry Strengthened.
- National oil spill contingency plan developed and operationalized.²²³

From the management of oil and gas report²²⁴ the researcher found out that the Ministry of Water and Environment (MWE) is the Government institution with the overall

²²³ The Republic Of Uganda Environmental Management in Uganda's Oil and Gas Sector January 2011

²²⁴ The Republic of Uganda Environmental management in the oil and gas sector edition January 2011 pg 5

responsibility of environmental management in the country. The Directorate of Water Resources Management (DWRM) in the MWE is responsible for Integrated Water Resources Management(IWRM) activities including: monitoring, assessing, planning, allocating and regulating water resources, whereas the Directorate of Environmental Affairs (DEA) is concerned with environmental policy and carries out its mandate through two agencies; NEMA and NFA;NEMA is a semi-autonomous institution, established under the National Environment Act ²²⁵, as the principal agency in Uganda, charged with the responsibility of coordinating, monitoring, regulating and supervising environmental management in the country. NEMA therefore liaises and coordinates the activities between institutions to ensure environmental and biodiversity protection during oil exploration activities.

The researcher also reviewed literature from Environmental management in the oil and gas sector of 2011²²⁶ and discovered that (NFA) a government agency that was established by an Act of Parliament i.e. the National Forestry and Tree Planting Act ²²⁷manages the Central Forest Reserves (CFRs) on behalf of Government and in trust for the people of Uganda. Its mission is to "Manage Central Forest Reserves on a sustainable basis and to supply high quality forestry-related products and services to government, local communities and the private sector". Also, UWA (under the Ministry of Tourism, Trade and Industry) has a mission to conserve, economically develop and sustainably manage the wildlife and Protected Areas of Uganda in partnership with neighboring communities and other stakeholders for the benefit of the people of Uganda and the global community. UWA therefore ensures that oil exploration activities in protected areas such as Queen Elizabeth and Murchison Falls National parks are carried out in a responsible manner²²⁸.

²²⁵ National Environmental Act CAP 153

²²⁶ Supra pg 7

²²⁷ NAFTA OF 2003

²²⁸ Environmental Management in the Oil and Gas sector: The republic of Uganda 2011 edition pg 5

In line with objective of the National Oil and Gas policy, Government continues to put in place Measures to ensure compliance with Environmental and biodiversity protection requirements during oil and gas operations. It is important to note that Uganda is still at the exploration phase, and Field Development Plans for some of the discoveries are under review. No production has yet taken place. During the ongoing exploration phase, the operations are closely monitored and the following key actions are in place to ensure environmental protection both in the current and future phases;

The study is done in consultation with the different stakeholders including the district environment Officers, local leaders, community members, PEPD and other relevant government lead agencies. NEMA oversees the review process in consultation with relevant lead agencies. If the studies conform to the required standards, a decision is taken by NEMA and a conditional approval is granted to the oil company. Oil exploration activities are closely monitored to ensure compliance with mitigation measures and their effectiveness, approval conditions and any other issues of concern that were not anticipated at the time of approval but become significant during implementation . At times some of these projects require Public Hearings as part of the EIA review process, an example is one which was held in Hoima in July 2008 for the Early Production Scheme and over 300 stakeholders participated. Projects are only implemented after approval of the environmental aspects.

National objectives xxvi ²²⁹ provides that the state including local government shall create and develop parks reserves and recreation area and ensure the conservation of natural resources; and promote the rational use of natural resources so as to safeguard and protect the biodiversity of Uganda.

The researcher also reviewed the Environmental management of oil and gas of Uganda and found out that Environmental sensitivity atlas for the Albertan Graben bears the objective "to display, identify and provide the ability to analyze the relative sensitivities (environmental, biological, geographical, and socio-economic) to oil spill and oil

²²⁹ The 1995 constitution of the republic of Uganda

development within the exploration areas in the Albertine Graben region of western Uganda". The first phase of the Sensitivity Atlas was completed in June 2009 and it provides environmental planners with tools to identify risks establish protection priorities and implement timely and appropriate response and clean-up strategies²³⁰.

5.4 Challenges and possible reforms in management of risk.

When it comes to challenges facing the International Oil Companies in the management of risk the researcher was issued data by respondents on Articles concerning oil curse in Uganda by the Ministry of Energy and Mineral Developments and found out that Environmental Concerns quite a challenge that cannot be avoided particular when talking about risk management²³¹.

There are a number of protected areas in the exploration blocks in which Tullow has interests, including an important National Park in Blocks 1 and 2, Uganda - Murchison Falls National Park. Blocks 2 and 3 contain many protected areas including the Bugongo and Bugoma Forest Reserves. These sensitive and highly valued areas present unique challenges in minimizing the impact that operations have on wildlife, tourism, fisheries and cultural land use. In addition, we are subject to Ugandan law, which contains environmental safeguards and has the power to issue penalties for any damage caused²³².

Concern at the local level for potentially devastating environmental disasters brought on by oil is increasing, especially in light of the recent Gulf of Mexico oil spill²³³. The vast majority of peasants Ugandans who live in oil rich regions live off the land using the natural resources to contribute to their livelihoods .If waste is not managed properly and if there are any oil leaks, many Ugandans' livelihoods will be put in jeopardy. Western Uganda is a region known for its lush agriculture, its fertile lands, its water resources (including great lakes Albert and Edward), its bountiful wildlife (finally approaching the numbers that existed before the Amin era), its national parks (Queen

²³⁰ Environmental Management in the Oil and Gas Sector The republic of Uganda 2011 edition pg 5

²³¹ The emerging oil industry in Uganda; A blessing or a curse pg 1 African research and resource forum 2011

²³² Ibid

²³³ Ibid

Elizabeth, Kibale, Bwindi, Murchison Falls, etc.) and its growing natural tourism industry. The ecosystems that exist operate in delicate balance, and the arrival of big oil poses many threats to its sustainability, especially if a spill were to occur. A key issue the government needs to address before commercial oil drilling begins is how to minimize environmental damage in this fragile region²³⁴.

If the water table becomes contaminated, inhabitants, including animal and marine wildlife, will become vulnerable. If waste is not properly managed, it too could result in soils that are infertile and unable to support livestock. When polled by International Alert, many communities expressed concerns about not having enough information about the plans for environmental management. As people are depending on their environment to meet their needs, the potential contamination of this land is a chief concern. If the people in this region can no longer use the environment to provide for themselves, they will most likely encounter difficulties in sustaining themselves. The government has yet to make a public statement around environmental sustainability in this regard and needs to provide greater assurance that the concerns of those who live in the area are being addressed. In Nigeria, a nation riddled with oil related problems, resistance movements, such as MEND, have emerged due in large part to the environmental effects of the poorly managed oil industry. The government of Uganda should look to situations unfolding in continental neighbors and learn from their mistakes.²³⁵

Reviews from recent Article²³⁶ show practically how Tullow Oil is having a challenge and how that risk management could be tackled. Animals in the Murchison Falls National Park, Uganda's largest game park are attracted to the oil firms' concrete waste pits. So the researcher found out that NEMA has tasked the oil companies to build temporary waste management facilities, where toxic materials from rock cuttings could be stored. The fisheries sector is also keeping a close eye on the industry. Already, two huge oil wells belonging to Tullow Oil, the Kingfisher and Ngassa II, are said to hold at least 300 million barrels of oil each in Lake Albert, which straddles the border between Uganda

²³⁴ *ibid*

²³⁵ The Emerging Oil Industry in Uganda; A blessing or a curse pg 1 African research and resource forum

²³⁶ The observer; oil boom; Uganda faces oil challenges <http://www.observer.ug> as accessed on 17th June 2014.

and the Democratic Republic of Congo the researcher further found out that Given such fears, technocrats are drawing a Biodiversity Policy that would allow the country ask for some compensation in the event of an impact on the environment. The committee comprises officials from NEMA, the Uganda Wildlife Authority and other stakeholders. NEMA has stepped up its surveillance of the oil companies' activities, promising to crack the whip on whoever steps out of line. However, the organization is likely to face challenges as it seeks information from the companies²³⁷.

5.4.0 Waste Management

The issue of waste management is also a concern that the researcher found out to be a challenge. From review of Article on oil boom in Uganda ,the researcher discovered that NEMA has also moved to strip the oil companies of the responsibility of managing waste in fear that they might fail as they try to minimize costs. Tullow Oil, listed on the London Stock Exchange, points out that waste management costs could vary between 5%-10% of well costs²³⁸.

Further the researcher found out that Government plans to engage a private company to manage the waste. The company will put up a central waste management facility and will be responsible for transporting the waste from the oil well to the facility. The researcher found out that a team from NEMA toured Texas and Louisiana in the United States late last year to learn about this waste management system. Under the arrangement, the oil companies will pay the fees, while government will provide land. In addition, NEMA has stopped oil companies from flaring oil, and ordered them to undertake extended well testing, although this won't go beyond three weeks to minimize the effects on the ecosystem. Both flaring and extended well testing are undertaken to determine the oil features. However, unlike Extended well Testing, flaring emits thick dark smoke which pollutes the environment.²³⁹

²³⁷ Ibid

²³⁸ Ibid n 110

²³⁹ Africa Research Bulletin. Oil and Gas: Uganda. Africa Research Bulletin 18571. January 16th – February 15th, 2010

Part x of the Petroleum (Exploration , Development and Production)Act²⁴⁰ Provides for Liability for damage due to pollution. Section 129 states that pollution damage applies to liability for pollution damage from a facility when the damage occurs in Uganda or affects a Ugandan vessel or a Ugandan Facility in adjacent areas.

Also the researcher reviewed African review Bulletin and found out that while the oil industry presents an exciting opportunity for Uganda, it also presents a daunting challenge that its neighbors have fallen victim to, the resource curse.²⁴¹

On the possible reforms the researcher found out from comments from interviews conducted from People in Hoima District that "the companies are aware of the environmental issues but they are keeping it to themselves....They need to work with us we are gazzetted public officials responsible for the environmental issues...There are big shots involved and so the companies feel they are beyond us."²⁴²

According to a press release²⁴³ as reviewed by the researcher it was discovered that Environmentalists fear that the oil fever in Uganda could have disastrous impacts on the area biodiversity of Lake Albert and are urging for oil pollution safeguards in Uganda, what kind of provision should the DRC government, UK Soco and France Total give for a World Heritage site and the refuge of the last mountain Gorilla? The answer should be simple, respect national and international laws, and respect the Virunga National Park boundaries and status. Follow the example of ICCM and its 17 member companies and recognize the principle that World Heritage Sites are "no-go areas" for prospecting and mining. a legal framework should be created that provides the institutions and regulations to deal with oil-related environmental issues and risk management.

It is appropriate at this juncture to take a brief look at each of these risk management challenges and possible reforms;

²⁴⁰ The Petroleum(Exploration ,Development and Production)Act ,2013 Acts Supplement No.3 4th April 2013.

²⁴¹Africa Research Bulletin. Oil and Gas: Uganda. Africa Research Bulletin 18571. January 16th – February 15th, 2010.

²⁴² Ibid

²⁴³ Press release on Oil Pollution Safeguards for Lake Albert – Uganda & No-go area for Virunga – DRC for june 5th 2012.<http://savevirunga.com/2012/06/05/>accessed on 17thjune 2014

5.4.1 Inadequacy of existing Law

The researcher reviewed the ACODE²⁴⁴ (Advocate Coalition for development and Environment) policy dialogue and found out that there is need for effective legal framework. The law also has to emphasize certain principles, such as transparency, parliamentary oversight, fiscal accountability and resource management. These principles would be the foundation of subsequent government actions. With time, the government might modify its regulatory procedures to better address new circumstances, but it has to stand by the principles that are laid out in the law. Parliament has to enact detailed regulations that lays out specifically what the oil companies have to do and not do This requires specific legislation that goes beyond vague language, such as requiring “best industry practices” – which means different things to the company and a government that seeks the best for its people and economy.²⁴⁵

5.4.2 Corruption

The researcher reviewed data from the NAPE (National Association of Professional Environmentalists) Report ²⁴⁶ and found out that the problems of governance and corruption also challenge the ability to overcome environmental crisis. Many of most serious environmental problems originate top down from central government officials who make momentous decisions with serious environmental consequences in secret, ignore our constitution and laws, abuse the human rights of affected persons and communities, commit corrupt acts – or simply are incompetent. More disturbing are recent warnings by officials that questioning their decisions are acts of “economic sabotage,” a recently imagined crime. For example, Energy Minister Hilary Onok in 2009 warned companies and NGOs against criticizing oil policies, thus misleading the public.

²⁴⁴ACODE Policy Dialogue Series, No. 15, 2010

²⁴⁵ACODE Policy Dialogue Series, No. 15, 2010

²⁴⁶ NAPE-UGANDA <http://www.nape.or.ug/threats/democracy.php> as accessed on 23rd June 2014.

Challenges in company/community communication Lack of information about company activities breeds suspicion and rumor across a range of impact areas; Companies' closer relationship to central government and failure to fully and consistently consult with local officials undermines local government; Companies' selection of individual "gatekeepers" at local level fuels nepotism and corruption; and Company disbursement of financial support to traditional institutions in the absence of a clear framework for such a relationship risks increasing tension within such institutions; and between such institutions and the wider community.²⁴⁷

5.4.3 Technical know-how and standard equipments.

These are currently a challenges in Uganda and according to a review of presentation made by permanent secretary Ministry of energy and development by the researcher ²⁴⁸ There are few LPG(Liquefied petroleum gas) technicians and no manufacturer for cylinders, burners, lighters as well as valves in Uganda. Such services are out-sourced²⁴⁹New, innovative technologies can help companies remotely and automatically monitor wells and fields, and consequently take preventative measures to help avoid production downtime. Intelligent surveillance, utilizing down hole sensors to monitor wells, is key to moving the industry forward. But to be effective, new processes, roles and responsibilities must be determined, and personnel must be trained. Today, many field workers operate independently in remote oil and gas fields. Centralized monitoring of wells will require oversight and procedural changes that may be difficult to institute. And while new technology has shown the promise of great things to come, integrating this innovative technology with existing systems, new tools and a global network of diverse business partners can be arduous. Turning this data into useful, relevant information that will help make business-critical decisions is one of the main challenges

²⁴⁷ International Alert: Harnessing oil for peace and development Investing in peace issue no.2 September 2009.

²⁴⁸ Conference on LPG :Exceptional energy for Uganda as presented by the PS Ministry of energy and mineral development February 2011

²⁴⁹ Progress of LPG as clean energy and government intervention presentation by minister for energy and mineral developments http://ulpgas.org/wp-content/uploads/2011/08/PS_PRESENTATION.pdf accessed on 22nd June 2014

the industry faces today²⁵⁰.Lack of standardized LPG equipments such as cylinders, valves etc. Each company has its own standard hence inter-company re-filling is not permitted.

5.5 CONCLUSION

Oil and Gas operations have the potential for a variety of negative impacts on the environment, but also the environment can benefit from petroleum operations. There is therefore a need to ensure that the oil companies like Tullow Oil as discussed in this chapter, during their operations, contribute to the conservation effort of Government. This will in turn limit any biodiversity loss. Operations are constantly monitored to ensure compliance with Environmental and biodiversity protection requirements during exploration phase. Plans are being undertake to further strengthen monitoring and compliance during the development phase. Government is committed to ensuring that oil activities are done with respect of the environment which is in line with the National Oil and Gas Policy and best practice in the industry.

²⁵⁰ IBM business consulting services; Meeting the challenges of today's oil and gas exploration and production industry.

CHAPTER SIX

CONCLUSION AND RECCOMENDATIONS

6.0 Introduction

Following the research findings in the proceedings from chapter five, this chapter presents the summary of the findings recommendations and conclusion. These are based on the findings and discussions in line with the objectives and hypothesis of the study outlined in chapter one of these report.

6.1 Conclusion

From the investigations it can be concluded that, As some investments analyst says: "nothing goes up faster than when you announce a major oil find in some geopolitical backwater" which is precisely what happened with the discovery of oil, an estimated billion barrels, at Lake Albert, one of Great African Lakes – Debate rages over what effect the new oil economy will have on Uganda's wider economic, social, and political development and risk management control systems which will be installed. The legal perspective of risk management by International Oil companies for example Tullow as we have been discussing should be seen to be applicable. According to the Uganda Wildlife Society, Uganda's legal framework related to oil and gas shows a number of lacunas that may create conditions similar to those in the Niger Delta. A report by the United Nations Development Programme (UNDP) indicates that there were more than 6,800 spills in the Niger Delta between 1976 and 2001. The National Association of Environmental Professionals (NAPE) in its study of January 2011 called for measures such as effective law enforcement and compliance to environmental laws and policies. The lack of an oil and gas waste management specific law is also another

matter to be absorbed. As it is, the Uganda government's eyes are only for the oil dollars; wild and marine life can choke.²⁵¹

There are many other risks in the oil industry in Uganda including political risks, economical risks, oil price fluctuations and others as discussed in the thesis report. To be able to deal with the risk there is need for sound management systems and set of appropriate laws. This is the crux of this thesis.

6.2 Recommendations

6.2.1 Recommendations for the government/IOC IN Risk management²⁵²

Government and companies should improve information flow about oil and support civic education at all levels;

Government should ensure that concrete strategies for transparency, in line with international best practice on “combating the resource curse”, are enshrined in the new legislative framework for oil. This should include transparency in new contracts and licenses; institutional mechanisms for revenue collection and management; management of any Ugandan oil fund to be set up; and clarity on the respective roles and responsibilities of different oversight agencies;

Government and companies should actively implement the Extractive Industry Transparency Initiative (EITI), including through ensuring civil society participation;

Government, with support of parliamentarians and the involvement of civil society, should implement a nationwide communication campaign on the draft oil laws, ensuring effective public consultation;

²⁵¹The Independent; Oil Spills Destroy The Environment Friday 15TH June 2012.

²⁵² International Alert: Harnessing Oil for Peace and Development Investing in peace issue no.2 September 2009.

The capacity and independence of government agencies critical to successful management and improved transparency of oil should be strengthened, particularly that of the National Environmental Management Agency (NEMA), the Petroleum, Exploration and Production Department (PEPD), the Ministry of Energy (including through creation of a functioning information officer and a petroleum database), and of local government officials in oil affected districts;

The capacity of parliamentarians, civil society and the media should also be strengthened. International development partners have a particular role to play in providing financial and technical assistance to such sectors in order to augment their capacity to promote positive outcomes from oil; and

Initiatives should be implemented by government and companies to ensure wide public Consultation on specific issues that arise, such as the current oil production feasibility studies; any new licenses; as well as any upcoming Environmental Impact Assessments (EIAs).

6.3 Recommendations for operational risk management

The following recommendations came out for consideration for operational risk management;

IDC Energy Insights recommends the following to oil and gas companies²⁵³:

- Consider developing a corporate-wide approach to managing information in the plant. Best practices cover use of technology to support operations, business analytics, application integration ,EHS compliance and enterprise content management.
- Work to develop business processes for operations and identify document control workflow for approvals within the organization, including a transmittal process.

²⁵³ Minimizing Operational Risks in the Oil and Gas Industry White paper sponsored by EMC July 2011.

Determine how often you wish to share documents with vendors, partners, regulators, and others. Work together to develop a coding standard for components/documents to ensure that there is consistent master data management.

- Participate in industry associations and user communities to help arrive at standards for the sharing of content and to support well and plant workflows.
- Look to areas of high vulnerability in your operation such as current processes that still rely on paper files that can potentially be difficult to find and update and may be misfiled or lost and ultimately expose your company to regulatory or internal audit Failures.
- Focus on process improvements that will allow more effective sharing of content both inside and outside the firewall. A good area to start would be the transmittal process.
- In this time of increased regulatory pressure, to look at solutions that will optimize the way you manage, share, store, and archive content to comply with environmental, health, and safety regulations.
- Look at deploying information rights management tightly integrated with content management to ensure that only authorized recipients can view, copy, print, or edit confidential information.
- Reassess customer communications capabilities to ensure timely and personalized correspondence tailored to the delivery requirements of the recipient, including customers and regulatory agencies.

6.4 Other Recommendations on Risk Management in Uganda include;

On entry to a country Tullow oil to undertake an early assessment of socio-environmental issues using rapid assessment approaches and Geographical Information System (GIS) techniques. This is followed by scoping assessments and rigorous project Environmental Social Impact Assessments (ESIAs), with consultation with local communities and other stakeholders. Using this approach Tullow Oil Company then able

to develop environmental management plans and monitoring programmes to ensure it operates responsibly. From the beginning of a project through to decommissioning, these document shows commitment to deliver and help to create a sense of local engagement and ownership throughout the life cycle of the project.

In addition, the launch of 'toes' (Tullow Oil Environmental Standards) in 2009 set an exciting direction for how it sees environmental management in the company. It establishes a framework within which it can build on key environmental management philosophies of biodiversity, climate change, resource management, stakeholder engagement, and monitoring and evaluation. As with all new processes, it continues to evolve and during 2011 it will develop these standards.

Experts should be brought for Asset Integrity for example the Inspector International Company on experts on Oil and gas in Asset Integrity²⁵⁴.Inspecta International is a one stop shop for global Asset Integrity services. It is a leading provider of Asset Integrity Management solutions, specializing in plant and pipeline integrity, Advanced NDT and Quality Assurance. Their expertise is able to provide clients in the oil and gas petrochemical and manufacturing industries in Uganda unparalleled services, ensuring their assets function safely and effectively.

Improvement of local technical know-how through offering of such courses as that offered in Kampala International University where petroleum courses such as International Comparative Petroleum Law is taught. Also other institutions such as Petroleum Institute's.

Finally on Local Content, The report on "National Content Study in the Oil and Gas Sector in Uganda"²⁵⁵ recommends that the oil companies should be encouraged to train as many Ugandans as possible. Companies like Tullow and Total have been running adverts in the media about different scholarships. Already government is engaged in discussions with oil companies to see how they can train Ugandans. The oil companies are also required to issue government a succession plan, where the companies will show government how they intend to replace their expatriates with Ugandans.

²⁵⁴www.inpspecctaint.com as assessed on 22nd June 2014.

²⁵⁵ Jackson A.M Per Heum Report on The "National Content Study in the Oil and Gas sector" pg.20 of The Uganda Chamber of Mines and Petroleum issue No.4

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APPENDIX I

INTERVIEW GUIDE

I am Victoria Gakii Maingi a student from Kampala International University pursuing a Masters of Laws Degree. I Am conducting a research on the Risk management in Tullow Oil company in Uganda a legal and policy perspective. The interview questions were directed to AON risk solutions in risk management for the Oil companies such as Tullow Oil Uganda Ltd and The Ministry of Energy and Mineral Resources.

1. How do you manage risk in the oil industry?
2. What do you consider to be the significance of risk management?
3. What are some of the policies considered to counteract situations of risk management?
- 4 Are you following proper rules and regulations in mitigating the risks?
5. How does the Ministry of Energy and Mineral Development enable the oil companies in Uganda in managing risks?