

**INVESTORS OR INFESTORS: AN ETHICAL CRITIQUE OF THE CONTRIBUTION
OF UGANDA'S MINING SECTOR TO DEVELOPMENT, ENVIRONMENT AND
SOCIETY**

BY

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2017

DECLARATION

I Margaret Ssebunya, declare that

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Student's Signature

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Supervisor's signature

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DEDICATION

To my late parents Francis Ssebunya and Margaret Namwebya Katawera

AND

To my dearest sisters, niece and nephew Stelah Najjeke Mabingo, Jewel Mirembe Trinity
Robinah Nansubuga and Douglas Anthony Kalutte

AND

To my grandfather Mr. Benedicto Mabingo. You are my true hero.

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ABBREVIATIONS AND ACRONYMS

GoU	Government of Uganda
SD	Sustainable Development
DGSM	Department of Geological Survey and Mines
MoWE	Ministry of Water and Environment
UBOS	Uganda Bureau of Statistics
ACODE	Advocates Coalition on Development and Environment
CBD	Convention on Biological Diversity of the United Nations
CCD	Climate Change Department of Uganda
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COMESA	Common Market for Eastern and Southern Africa
ICMM	International Council on Mining and Metals
IPCC	Intergovernmental Panel on Climate Change
NBDB	The National Biodiversity Data Bank
OECD	Organization for Economic Co-operation and Development
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
ICESCR	International Covenant on Economic, Social and Cultural Rights
IUCN	International Union for the Conservation of Nature
NAPE	National Association of Professional Environmentalists
NEMA	National Environmental management Authority
UNCED	United Nations Conference on Environment & Development

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ABSTRACT

Oil and mineral extraction in Uganda is growing at a relatively fast rate. The increase in these extraction activities follows the latest discoveries of offshore oil deposits in the Albertine graben and other mineral deposits of commercial value in several parts of the country. The prospect of the mining sector particularly oil and gas to increase national wealth has therefore become central to Uganda's long-term planning agenda *Vision 2040*. According to the Ministry of Energy and Mineral Development (MEMD), mining is envisaged to be the biggest foreign exchange earner in Uganda in the coming years. It is also expected to play a large role in the future economic development of Uganda particularly through job creation, increased Gross Domestic Product, technology transfer and revenue generation for investments in development of other strategic sectors such as infrastructure and human resource development.

With such prospects aimed at accelerating economic growth and development, Uganda is encouraging both domestic and foreign direct investments (FDI) mainly through privatization programs and generous incentive packages such as tax holidays and exemptions for the investors. Meanwhile, Government makes no mention of the adverse impacts of mineral exploration and production on the economy, environment and the society, yet such development projects if not properly undertaken could instead halt development. The mining sector in Uganda presents a potential for social, economic and environmental challenges. However, the positive impacts for the macro economy seem to have overshadowed all the likely negative effects on the environment and local communities.

Although some studies have been conducted on Uganda's mining sector, there are no studies conducted on the contribution of the sector to development, society and the environment from an ethical lens. This is what this study sought to do by ethically critiquing the contribution of Uganda's mining sector to development, society and the environment. This study posits that the failure to challenge investors in the mining sector about their obligations towards both the present and future generations has resulted in the careless exploitation of Uganda's mineral resources leaving the environment in a fragile state and leading to adverse effects on the society. It argues that mining and environmental policy and action must be informed by an understanding of factors that determine development outcomes on the economy, environment and society.

The theories of sustainable development, consequentialism and stewardship comprised the ethical framework of the study. A qualitative research approach framed within a critical research paradigm and based on existing literature was employed in seeking to answer the key research question: “What are the ethical implications of the contribution of Uganda’s mining sector to development, society and the environment?” The methodology is also prescriptive in nature as it makes recommendations for a constructive way forward of ensuring sustainable mining in Uganda, which takes cognizance of economic, social and environmental concerns.

The study shows that mining activities in Uganda are characterized by poor mineral resource governance, gross human rights violations and egoism by the investors. Findings point to lack of transparency, accountability, rule of law, responsiveness, participation, autonomy and decision making power as a root cause of negative outcomes of mining on the environment and the local communities. Technocentrism was also found to be the dominant approach to mineral development in Uganda where the environment is perceived as a resource to be exploited by investors. This study then proposes a holistic ethical paradigm for ensuring sustainable mining. This paradigm comprises eco-health and human rights approaches as well as the ethics of solidarity in which participation, praxis, government policy and environmental education are paramount, and where the contribution of everyone matters.

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CHAPTER ONE: GENERAL INTRODUCTION

1.0 Introduction

Nature is viewed as “a theatre for all anthropological undertakings that seek to attain the progression of human existence and prosperity” (Al-Busaidi, 2012:1). Such a view has led to countries undertaking a wide range of development activities such as agriculture, fishing, mining and tourism, among others. However, in the midst of these economic activities, the quality of the environment and society has been adversely affected. As a result, there is increasing global concern over the impact of development projects on the economy, society and the natural environment. This was well articulated by the Brundtland Commission in its report “*Our Futures*” (WCED, 1987). The concern particularly emanates from the struggle between development and the environment as well as development and society, yet there should be a harmonious existence among the three. Tracey Strange and Anne Bayley note that:

Life depends on a complex set of interactions between people, the natural environment, and economic systems. The unprecedented growth seen during the 20th century has affected these relationships in both positive and negative ways. Record levels of pollution have put great stress on the environment. Economic growth has created immense wealth in some areas of the globe, but left others behind. Understanding the essential elements that support healthy societies and a healthy planet is an urgent need for people and their governments (2008:8).

Development is an essential process in every economy and as such, it should be capably undertaken so that the natural environment and the people are not undermined. However, this seems to be a challenge in a number of countries. In light of this, development is faulted for contributing to the increasing social and economic injustices as well as the environmental crisis in many countries, and Uganda is no exception.

In this study, I argue for the need to undertake development projects with a focus not only on economic development but also social and environmental development. Drawing on the insights of the sustainable development framework propounded by the Brundtland Commission as well as the ethical theory of consequentialism, this study offers an ethical critique of the impact of Uganda’s mining sector on development, society and the environment. The study further uses the insights from the ethic of stewardship to develop a holistic ethical paradigm in the form of recommendations for sustainable mining in Uganda. This chapter presents the background for the

study, motivation of the study, research problem and objectives, theoretical framework, research methodology, significance of the study and the structure of the thesis.

1.1 Background

In an attempt to accelerate economic growth and development, Uganda started to implement a liberalization policy¹ in 1987. As a result, Uganda is encouraging both domestic and foreign direct investment (FDI) mainly through privatization programmes and generous incentive packages such as tax holidays and exemptions for the investors. The fiscal incentive package for medium and long-term investors in Uganda offers favourable capital recovery conditions, substantial plant and machinery costs and major training (UIA, 2014:8). The US Department of State Report notes that coupled to the above packages is “a range of annual Value Added Tax (VAT) deferments, deductions, exemptions and depreciation allowances which allow investors to pay no tax at all in the first year of their investment, and paying substantially less than the 30 percent corporate tax rate (one of the lowest in Africa) in the subsequent years of their investment”. Furthermore, all plant and machinery is imported duty and tax-free in addition to the Government of Uganda providing a 10-year tax holiday for investors engaged in export-oriented production (2015:12)

Uganda also has a thoroughly liberalized foreign exchange regime without restraints on the movement of capital. The country allows 100% proprietorship of projects by foreign investors (International Business Publications, 2013:153; KPMG, 2014:5). This is in line with the country’s Economic Reform Programme which is aimed at creating a favorable investment atmosphere for domestic and foreign investors.

According to the Uganda Investment Authority, Uganda was registered as the second best investment location within the East African region in 2014. Uganda registered US\$ 1,147 million which accounted for 25 percent of all the East African Community foreign direct investment value in 2014 (UIA, 2016:19). In the financial year 2014/15, the Uganda Investment Authority (UIA) licensed 327 projects as compared to the 461 which were licensed in 2013/14. However, the actual investment value during 2014/15 increased by 171 percent to US \$ 456,109,937 from US \$ 187,394,312 in 2013/14 (UIA, 2016:4). The mineral and oil sector is among the major sectors that has attracted many investors in Uganda. This is a result of the discovery of nascent oil in the

¹ The liberalization policy is part of the country’s Economic Reform Programme.

Albertine graben as well as mineral ores especially gold, iron, copper, cobalt, limestone, beryl, marble, phosphates, aluminium, wolfram, uranium, vermiculite, salt, and tin in different regions of the country (DGSM, 2008; Museveni, 2014:14). This is echoed in the 2015 US Department of State investment climate statement that Uganda was one of the countries that had maintained relatively high inward flows as a result of its gas and mineral sectors (2015:6). An earlier study by Kathman and Shannon in 2011 indicated that the mining sector, could double or triple Uganda's export earnings when oil production commences (2011:27). According to the Uganda Bureau of Statistics, there was a 6.2 percentage increase in the total value of minerals produced from 158 billion in 2013 to 168 billion in 2014 (UBOS, 2015:62). The mining sector is thus a fast growing industry in Uganda.

Some of the major investors in the sector include; Total E&P, Tullow Oil, CNOOC, Baker Hughes, ENI-Italy, Heritage Oil and Gas, Uganda Operations PTY, Neptune, and Dominion in the Albertine graben (Petroleum Exploration and Production Department, 2015); Jan-Mangal, East African mines and DAO Uganda, Uganda International Mining Company Ltd, African Mineral Fields, Vangold Resources Ltd, New Kush Exploration and Mining Company, Tibet Hima, Kasese Cobalt Company Limited, Anglo Uganda Corporation, Greenstone Resources, Great Lakes Iron and Steel Company Limited, Uganda International Mining Company Limited, Krone Uganda Limited, Sino Minerals Investment Company Limited and Berkeley Reef Limited (Uganda Chamber of Mines and Petroleum, 2015) among others. These investments have boosted the economy through knowledge and technology transfer as well as development of local enterprises, among other initiatives. However, investments have also been associated with a number of adverse impacts. Henry Mugisha Bazira points out that the mining sector in Uganda, particularly in the Albertine graben presents a potential for social, economic and environmental challenges because it frequently “coincides with ecologically sensitive and biodiversity rich and protected areas, which include game reserves, national parks and forest reserves” (Bazira, 2012:33).

All investments in Uganda are guided by the Investment Code Act (1991). Specific to the mining sector, over and above the Investment Code Act, mining companies are governed by the National Mining Policy (2000), Mining Regulations 2004a (Rules) and Mining Regulations 2004b (First Schedule of the Mining Act). These documents detail protection of the environment and avoidance of waste and misuse of environmental resources. The National Environment Act (1995) also

emphasizes the principle of sustainability to “use and conserve the environment and natural resources equitably and for the benefit of both present and future generations, taking into account the rate of population growth and the productivity of the available resources” (GoU, 1995a). Similarly, the Constitution commits to the protection of the environment against such abuses and it mainstreams the environment as a human right. Section 39 of the Constitution stipulates that “every Ugandan has a right to a clean and healthy environment, and thus any action leading to environment degradation constitutes an infringement of the human rights to life, health and livelihood” (GoU, 1995b).

In addition, other sectoral legislations also call for protection of the environment while pursuing development activities in the country. The Government of Uganda has integrated environmental concerns in national planning in the Poverty Eradication Action Plan as well as the current National Development Plan. However, the implementation of the major environmental policies is almost non-existent. This is reiterated by the United Nations Development Programme country report which notes that despite the presence of legislative and policy measures, the implementation and level of compliance with environment and natural resource policies, laws, institutions, regulations, standards and guidelines are still considered low, giving rise to abuse and exploitation of the environment (UNDP, 2010).

Amidst all the above, it is important to note that humanity is closely attached to the natural environment and the use of the environment is now a matter of economic survival. The existence and survival of the present as well as that of the future generations is subject to a harmonious and complementary relationship with environmental elements such as water, air, biodiversity, land and forests. This is reaffirmed by the United Nations that our lives on this planet depend on nature’s provision of stability and resources (UN Millennium Project, 2005:1). As a result, humanity is obligated to use the natural environment in a manner that fosters the possibility for progress and opportunity for sustainable development for both present and future generations. This means that in pursuing development projects, Uganda (just like any other country) should not disregard the underlying tensions between development, the environment and society. In a bid to achieve development that is truly sustainable, both the environment and the economy must be in synergy as both are necessary for survival and well-being of the people. As Wangari Muthaai asserts, there cannot be development without sustainable management of the environment (Muthaai, 2004). In

order for Uganda to realize its vision for development “A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years” (GoU, 2013a), there is need for proper management of the natural environment as well as efforts to ensure both economic and social development.

1.2 Motivation for the study

This study was born out of the passion towards nature that I developed from my early childhood. Having been born and raised in the countryside in the late 1980's, I grew up surrounded by extensive natural green vegetation. There was always access to clean water and the climatic conditions were favourable for agriculture- the major economic activity in Uganda. However, these are slowly but steadily disappearing. Most of the land is now occupied by buildings, factories, large plantations of sugarcane and tea as well as deep pits abandoned by clay miners. The climate has drastically changed. This is evident in a study conducted by McSweeney, New and Lizcano that “although the average temperatures in East Africa have increased to about 0.5⁰C, the average temperatures in Uganda have increased by as much as 1.4⁰C at an average rate of 0.28⁰C per decade since the 1960s” (2008:1). Drought and famine are wide spread in many parts of Uganda. Many water resources, especially lakes and rivers have been polluted (Nsubuga, Namutebi and Ssenfuma, 2014:1297) and the water is not conducive for domestic use anymore. These illustrations are some of the indications of the level of the environmental crisis in the country. Therefore, the desire to engage in the current debate surrounding the environmental crisis in Uganda has motivated me to undertake this study.

Another motivating factor for this study is the discovery of significant commercially viable reserves for minerals in different parts of the country as well as the discovery of commercial oil deposits in the Albertine graben (DGSM, 2008; GoU, 2013a:47; Museveni, 2014:14; NAPE and GAIA, 2014:1). The discovery of commercially viable mineral and oil reserves has been greatly applauded by the Government who claim that resource extraction will help the Ugandan economy grow from a low income country to a lower middle income economy by the year 2017 (GoU, 2013a: xiii). The growth is assumed to be through provision of jobs, increased Gross Domestic Product (GDP), improved transport system and other infrastructure, among other things. Meanwhile, the Government of Uganda makes no mention about the adverse impacts of oil and mineral exploration and production on the environment and the society. Yet such development

projects, if not properly undertaken, could instead halt development of the country. The positive impacts for the macro economy seem to have overshadowed all the likely negative effects of the mining on the environment as well as the local communities.

Furthermore, some research has been done on the mining sector in Uganda such as Hinton et al 2012; ASF; 2014 and HRW 2014 among others. However, to my knowledge there is no work done on the contribution of the mining sector to development, society and the environment from an ethical perspective and thus the gap that this study seeks to fill is: the ethical critique of the contribution Uganda's mining sector to development, society and the environment.

1.3 Problem statement

Studies have indicated that oil and mineral extraction in Uganda is growing at a relatively fast rate. This increase in extraction activities follows the latest discoveries of oil in the Albertine graben and other mineral deposits of commercial value in several parts of the country (Museveni, 2014:14; GoU, 2013a: 47; DGSM, 2008). The prospect of the mining sector particularly oil and gas to increase national wealth has become central to Uganda's long-term planning agenda *Vision 2040* (GoU, 2013a:48). Such acclaims are made amidst the growing concern about the escalating environmental crisis in Uganda.

Investments such as manufacturing industry, agriculture and mining have especially been blamed for contributing to mounting the environmental crisis (Ssekitoleko, 1993; Hinton et al, 2011; Cesar and Wolf, 2013). This could be attributed to the biased attitude of investors and policy makers towards the environment and local communities where the activities are undertaken. As a result, the activities have ended up being harmful, threatening and obnoxious to Uganda's natural environment, economy and society. One wonders whether the investments are really aimed at developing the country or undermining local development. For example, walking through a number of mining areas in Uganda, one observes a lot of environmental degradation evidenced through clearing of large vegetation cover leading to loss of biodiversity; habitat destruction; clearing away wetlands; pollution of air and water; noise pollution from the drills; and abandoning of former mineral ores with hollows unattended to after the exhaustion of the minerals. This seems to be the practice even though Uganda has mining and environmental legislations and policies.

The investors in the mining sector have done a commendable job in developing the sector. However, in exploiting the country's mineral resources, they seem to have taken advantage of the natural environment and their activities have adversely affected it. It is with this background that the study seeks to explore the contradictions between development and the environment in Uganda by ethically critiquing the contribution of Uganda's mining sector to development, society and the environment. To my knowledge, the impact of Uganda's mining sector has not been adequately examined and assessed principally through an ethical lens. Therefore, the relative lack of critique of these activities from an ethical perspective is the problem this thesis intends to investigate. The thesis thus seeks to provide such a critique and challenge investors about their obligations towards both the present and future generations in terms of social and economic development as well as environmental conservation and protection.

Ethics is about right and wrong, values, and what ought to be the ideal. For this reason, a strong understanding of one's values can enable one to understand what obligations arise when confronted with not only the sustainability of the environment (and in turn the sustainability of human life on earth), but also the continued economic growth of society (Stückelberger, 2015:14).

1.4 Key Research Question

From the above discussion, the question that confronts this study is: "What are the ethical implications of Uganda's mining sector activities to development, society and the environment?"

The specific questions are:

1. What are the activities of investors in Uganda's mining sector?
2. How have the activities in Uganda's mining sector impacted the economy, the environment and society?
3. What is the Government's response to the environmental crisis in Uganda?
4. What ethical framework could be adopted by the Ugandan Government to ensure sustainable mineral development in Uganda?

1.5 Research Objectives

The objectives of the study are:

1. To critically examine the activities of investors in Uganda's mining sector.
2. To assess the contribution of Uganda's mining sector to the economy, environment and the society.
3. To critically examine Government's response to the environmental crisis.
4. To propose an ethical paradigm for promoting sustainable mining in Uganda.

1.6 Theoretical framework

The assumption of this study is that the failure to challenge investors in the mining sector about their obligations towards both the present and future generations in terms of economic and social development as well as environmental conservation and protection has resulted in the careless exploitation of Uganda's mineral resources leaving the environment in a fragile state and leading to adverse effects on the society. For this reason, the theories on which the study is constructed include the theory of sustainable development advanced by the Brundtland Commission in 1987, the ethic of stewardship and the ethical theory of consequentialism.

The sustainable development paradigm came into the public arena in 1980 when the International Union for the Conservation of Nature and Natural Resources (IUCN) set forth the World Conservation Strategy with the purpose of attaining development that is sustainable through safeguarding the world's living resources (IUCN, 1980). However, it was not until 1987 after the Brundtland Commission report that the sustainable development (SD) framework came to be widely accepted. The commission defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987:43). The SD framework advanced by the Brundtland Commission provides a general idea of what sustainable development should be and emphasizes the significance of long-term considerations in the development process rather than being myopic to the impacts of development activities.

SD extends development concerns to the economy, society and the environment of both present and future generations. It thus reminds us of the duty to take care not only of our own generation, but also of our immediate and future successors. The framework also offers "an economic strategy for addressing concerns about ecological integrity and social justice because it expresses the ethical

capacity to address these concerns” (Davidson, 2000). The environment, the economy and society should be balanced without one overriding the other two as the best way of ensuring wellbeing for both current and future generations. The SD model promotes the preservation of the environment, a healthy life and thriving communities while keeping the economy stable.

As the study intends to offer an ethical critique of the contribution of Uganda’s mining sector to development, society and the environment, the most appropriate approach to this is through looking at the consequences of the activities of the mining sector on the environment, society and the economy. Therefore the second theory that reinforces this study, particularly from an ethical perspective, is the ethical theory of consequentialism. According to consequentialism, “an action is morally right if and only if it produces at least as much good (utility) for all people affected by the action as any alternative action the person could do instead” (Audi, 1995:824). Bergström notes that “since consequentialism stresses the way people are affected by our actions, what matters is the welfare or the preferences of everyone to whom our actions make a difference” (1996:76). Consequentialism is therefore an appropriate ethic to assess the contribution of Uganda’s mining sector to development, society and the environment. The ways in which mining activities affect others is an issue of moral concern.

The other theory that is important to this study is the ethic of stewardship. The ethic of stewardship is an ethic of responsibility and it offers a methodology for the protection and management of the environment. It also serves as an ideal approach from a leadership and governance perspective in which the Government ought to seek the best interests of its citizens. In this study, the ethics of stewardship is justified on the basis of the increasing environmental and social problems incurred as a result of the effect of mining activities on the environment and the people. Although the theory of stewardship applies to a number of contexts, this study narrows it down to the environmental and governance perspectives. Environmental stewardship demands that we treat the environment with care because our moral failures, negligence and lack of commitment towards environmental protection can have substantial impact.

From the governance perspective, stewardship invites us to seek the best interests of others and to be accountable for their well-being. Since relationships are the basis for human society, showing concern for others is a fundamental ethical duty. It is an indication of an authentic ethical existence in which people show concern for the well-being of others leading to a balance and communal

agreement (Hartshorne, 1974:204). In view of the mining context, ethical stewardship challenges the Government as well as local leadership in the mining areas to progress towards ethical leadership and governance. This is because stewardship is the very essence of good governance (Travis et al, 2002:3). The ethic of stewardship will therefore help to inform the recommendations for the proposed ethical framework in Chapter Eight. The theoretical framework presented in this subsection is elaborated in greater detail in chapter two.

1.7 Research Methodology

The study engages a qualitative research approach framed within a critical research paradigm and based on existing literature. Qualitative research captures the “complexities of social life and treats actions as part of holistic social process and context, rather than as something that can be studied in isolation” (Payne and Payne, 2004: 176). In other words, qualitative research is connected with developing explanation for phenomena. The strength of qualitative research lies in its undeniable explanatory and descriptive power and in availing thorough information on the topic under investigation. This provides in-depth understanding of human behavior and of social interactions as well as the rationale for such interactions. Qualitative research can be either empirical or non-empirical. This particular study is non-empirical. Non-empirical research is “based on theory” (Mouton, 2004:57). I used the theoretical framework of sustainable development and consequentialism to examine the mining phenomenon in Uganda in order to gain an understanding of mining activities and to draw a conclusion as to whether they are investors, infestors or even both.

The study also offers a critique of the mining industry in Uganda with regard to its impact on the environment, economy and the local communities. Critical analysis is principally concerned with and motivated by the attempt to understand “pressing social issues” (Van Dijk, 2006:252). It is interested in “issues of power and justice and the ways that the economy, race, class... construct, reproduce and transform social systems” (Rogers et al, 2005: 368). The study is critical of the mining sector in Uganda on the grounds that although the sector has tried to contribute to the development of the economy, it has ignored environmental and social concerns. The study therefore advocates for change of the unjust mining practices in the sector in order to transform society and free local communities from all forms of oppression and deprivation of opportunity to

better their lives brought about by the mining industry. Critical analysis has enabled me understand the “why”, “what” and ‘how” of mining in Uganda.

The critical analysis throughout the study is informed by the theories of sustainable development and consequentialism. Furthermore, using the critical analysis the study makes prescribes and makes recommendations for an ethical paradigm of ensuring sustainable mining in Uganda, with cognizance of economic, social and environment concerns. This paradigm is informed by the theory of stewardship. As such, there is a clear link between the methodology and the theoretical framework used in the study. Maxwell affirms “no fact, investigation or conclusion can be theory free” (2010:2).

Since the study is not based on empirical research, it is entirely library based. Through library research, I engaged in a step by step process in order to generate data. Having identified the research problem and formulated the key research question, I relied heavily on secondary data. I was able to find secondary sources through the use of catalogues and the internet (World Wide Web). I was able to evaluate the authority and quality of the data to ascertain whether it was of scholarly value. Through this process, I discovered that some of the data was not scholarly. Some material was biased and not comprehensive. Such material was discarded.

Much of the secondary data was got from the NEMA library in Kampala, DGSM library in Entebbe, ACODE library in Kamwokya and the University of Kwazulu Natal libraries. I also got some secondary data through using the internet search engines² especially google³. Particularly, the google search engine helped me to locate Uganda government reports, policies and legislations. Besides google, I was also able to search databases⁴ for more literature on my research topic. Searching the databases helped me to perform more advanced searches such as locating relevant books, articles and periodicals for my study from the University of Kwazulu Natal libraries through the university’s digitalized collection. It also helped me to locate other relevant books and journals not available in any of UKZN’s libraries. The databases searched are SA ePublication and

² A search engine refers to “a program which searches the database, gathers and reports the information which contains the specified or related terms” (Tarakeswar and Kavitha, 2011: 29).

³ Google is a software that searches documents and files for key-words or head-words after which it displays the files containing the head-words.

⁴ According to the UKZN library instructional guide on database searching, “databases contain references to journal articles, chapters in books and in some cases, theses and dissertations. Some databases also include the full text of the articles and other items”.

Ebscohost (particularly Academic Search Complete- a multidisciplinary database of journals and newspapers covering a wide range of topics. It offered me a starting point for gathering literature on my study; African Journal Online; and Environment Complete- offering coverage for all areas in environmental studies including environmental ethics, environment and the human condition as well as energy and sustainability). In order to generate relevant literature, I developed key-words/ concepts that guided my search. The key-words that were searched are mining, sustainability, environment, development, sustainable development and Uganda.

Use of secondary data was time saving and ensured accessibility especially of the documents obtained via the internet. From the use of secondary sources, I was able to develop new insights from previous analyses by different scholars. I was also able to verify and confirm previous results. However a major challenge I faced with the use of secondary data was that some of the government documents were not readily accessible online because the links to these documents were inactive. The fact that I was writing my reach from outside Uganda made acquisition of such documents not possible. Another challenge encountered is that there was incomplete information on some of the documents. Some of the documents appeared to have valuable and promising information but accessing the full version was not possible because they required payment of fees which I did not readily have. The other challenge is that some of the government documents were dated. All efforts made to acquire current information were futile because no publications have been produced in the recent past. For example NEMA's latest state of environment report was produced in 2010 yet NEMA is a trusted authority in the publication of information on Uganda's environment. I however managed to get current reports on the environment, development and mining in Uganda that have been published by non- government entities such as civil society and individual researchers.

1.8 Aim of the study

The primary purpose of this study is to ethically critique the contribution of Uganda's mining sector to development, society and the environment. The study is neither meant to praise nor to condemn investors and policy makers (especially the Government) but is intended to create awareness among them regarding the necessity and value of being ethical in their activities as well as their responsibility to the current and future generations. The study would by no means attempt to disrespect the standards embedded in Uganda's development and investment policies but rather attempts to present a way forward by suggesting a holistic ethical framework for promoting

sustainable mining in Uganda. This study is therefore worthwhile because it is a contribution to the current debate and critique on development (investments) and environment. It is only by such critiques that Uganda's environmental and investment policies can be amended, modified and enforced to benefit all people and achieve the purpose for which they were created. The study points out the ethical concerns at stake in the exploitation of Uganda's minerals. To my knowledge, the activities of investors on development, society and environment in Uganda have not been critiqued from an ethical perspective. Therefore, this study is completely unique, and pioneers uncharted territory, thereby making an important contribution to the knowledge base on environmental ethics in Uganda.

Another significant factor is that the study proposes a holistic ethical framework that the Ugandan Government and policy makers could adopt to ensure social and economic development, as well as sound environmental management while pursuing development-related activities. By offering a comprehensive approach, which incorporates ethical issues as a key solution to ensuring sustainable mining, this study can be envisaged as a pioneering attempt in the field of development of policy decisions for Uganda with regard to the economy, environment and society. It is intended to be a resource tool for advancing development that is truly sustainable. My desire is that this study will serve as a valuable mechanism for social change, not only in mineral development but also for other segments of the economy (for example manufacturing industry and agriculture). The research outcomes and recommendations could help the investors, policy makers and local communities to become more vigilant and act in ways that promote and advance economic development together with social and environmental development.

1.9 Structure of the thesis

The study comprises nine chapters. These are described as follows:

Chapter One shows the organizational framework of the thesis. It contains the background of the problem to be tackled, motivation, research problem, key research questions and objectives, theoretical framework, research methodology, significance and the structure of the thesis.

Chapter Two discusses the theoretical framework of the study in detail. The theoretical framework comprises of the theory of sustainable development, the ethical theory of consequentialism as well as the ethic of stewardship. The sustainable development paradigm represents the connection

between the environment, society and the economy. It points to the fact that for any activity to be sustainable, it must take equal consideration of society, the economy and, above all, the environment. This is because true and genuine development “cannot take place upon a deteriorating environmental resource base; neither can the environment be protected when development excludes the costs of its destruction” (Holden, 2016:179). Sustainable development promotes the preservation of the environment, a healthy life and thriving communities while keeping the economy stable. Consequentialism assesses the consequences of the activities of the mining sector on the environment, society and development. Stewardship, on the other hand demands that we take responsibility for the effects of our choices on the environment in order to ensure that it is sustainably managed for both the current and future generations. It offers an approach to the protection and management of the environment, on which humanity and habitats rely through sustainable practices. It also invites us to seek the best interests of others and to be accountable for their well-being in order to live in harmony and mutual understanding within the community

Chapter Three presents an overview of Uganda. It provides general background information about Uganda focused on the location and size, relief, climate, vegetation, drainage, geology, population, and major economic activities. The chapter also discusses the major aspects of Uganda’s natural environment such as land and forest resources, water resources, mineral resources, atmosphere and biodiversity. The chapter further discusses the environmental crisis in Uganda identifying the key environmental challenges as well as the causes and major contributing factors.

Chapter Four gives an overview of the mining sector in Uganda. It highlights the history of mining in Uganda, the major mineral occurrences, the key investors, and Uganda’s mineral regulatory framework including the country’s investment policy.

Chapter Five discusses the contribution of Uganda’s mining sector to development (economy), environment and the society (local communities where mining activities are undertaken). It is therefore divided into three sections. While the first section discusses the contribution of mining to Uganda’s development, the second and third sections discuss the contribution of mining to the environment and society, respectively.

Chapter Six discusses the response of Government to the environmental crisis in Uganda. It presents the country's environmental regulatory framework including the key institutions charged with environmental protection and conservation; environmental laws and policies; as well as some of the international conventions and agreements on the environment which Uganda has signed and ratified. The chapter also discusses environmental impact assessment regulations in Uganda as well as the comprehensive environmental education and awareness campaign which is all-inclusive targeting both the formal education and non-formal educational sectors.

Chapter Seven analyses the activities of investors in Uganda's mining sector through the sustainable development framework and the ethical theory of consequentialism. The chapter further discusses the major ethical issues emerging from the activities of investors in Uganda's mining sector.

Chapter Eight proposes a holistic ethical paradigm to ensure sustainable mining in the country. The chapter notes that ethical business practices ought to be grounded in a strong ethical mechanism that guides and influences the conduct of the people. This paradigm is informed by the ethics of stewardship which is an ethics of responsibility towards both the environment and other members of the society. The paradigm is in form of recommendations which the Government of Uganda and investors could adopt.

Finally, Chapter Nine presents a summary and conclusion to the entire investigation with specific reference to the arguments, findings and conclusions.

1.10 Conclusion

This chapter has introduced the major concerns of the study, which is to ethically critique the contribution of Uganda's mining sector to development, society and the environment. In conducting this study, the thesis draws heavily on the insights of the sustainable development framework, ethics of stewardship and the ethical theory of consequentialism. The chapter also points out the significance of the study, methodology as well as the outline of the thesis.

CHAPTER TWO: THEORETICAL FRAMEWORK

2.0 Introduction

Chapter one gave the general introduction to the study. It has among other things, briefly presented the theoretical framework of the study. The current chapter discusses this framework in detail. The study focuses on three theories namely; the theory of sustainable development, the ethic of stewardship and the ethical theory of consequentialism. The first section looks at the theory of sustainable development which forms the basis of this study. Due to the fact that the study aims at ethically critiquing the contribution of mining to development, society and the environment, the second section examines the ethical theory of consequentialism and its relevance to the study. The third section discusses the ethic of stewardship. This is an ethical theory intended to promote responsibility towards the environment through sound use of environmental resources, as well as responsibility towards humanity through standing in solidarity with them and ensuring that the activities in which we engage enhance humanity's wellbeing rather than undermining it. In this study, stewardship rationalizes the theory of sustainable development. A discussion of sustainable development, consequentialism and stewardship is thus the most appropriate framework to examine and ethically critique the contribution of Uganda's mining sector to development, society and the state of environment crisis. The final section is the conclusion.

2.1 The theory of Sustainable Development

The purpose of this section is to discuss the theory of sustainable development (SD). In discussing SD, the section attempts to probe into the meaning of sustainable development and also shows the complexities embedded in the term "sustainable development". The section also highlights the different positions that scholars take in their attempt to draw meaning of sustainable development. It further discusses the principles, pillars, and approaches to sustainable development in view of mining and finally presents a critique of the theory of sustainable development.

2.1.1 Definition and meaning

Sustainable development (SD) is a conceptual approach to development that arose out of the concern about the negative effects of development upon the environment. Its major goal is to achieve the well-being of the ecosystem and the human system together (Pushpa, 2008:102). The notion of sustainable development came into the public arena in 1980 when the International Union

for the Conservation of Nature and Natural Resources (IUCN) set forth the World Conservation Strategy with the purpose of attaining development that is truly sustainable through safeguarding the world's living resources (IUCN, 1980). In this regard, Čiegis and Štreimikienė argue that sustainable development merges two urgent goals, namely ensuring appropriate, secure, and healthy lives for all people which is the goal of development; and living and working in accordance with bio-physical limits of the environment which is the goal of sustainability (2005:7). The implication of this is that we cannot achieve genuine development if we exceed the carrying capacity of the environment. Therefore whatever activities we engage in, they should be within the limits of the natural environment. Only then can we move towards development that is truly sustainable.

Sustainable development has been, and continues to be, a central theme in discussions on development and environment. However, defining it seems to be a challenging task especially in a way that is operational within the modern world view. This is because sustainable development is a multidisciplinary concept which cuts across different fields such as politics, ecology, economics, geography and public policy, among others. As such, the term 'sustainable development' seems to mean different things to different people.

An earlier definition by Robert Repetto proposed that:

At the core of the idea of sustainable development, is the concept that current decisions should not damage the prospects for maintaining or improving living standards in the future...This implies that our economic systems should be managed so that we live off the dividend of our resources, maintaining and improving the asset base so that the generations that follow will be able to live equally well or even better (1985: 10).

Repetto's definition implies that SD demands that the current generation be mindful of the future generation while developing policies and undertaking development activities. His argument suggests that the decisions we make today should not negatively affect the next generation, but rather contribute to improving their standards of living. Therefore, whatever development activity we engage in should be cognizant of the generations which will follow us so that they are able to live even better lives.

Another definition for sustainable development was advanced by the Brundtland Commission (BC) also known as the World Commission on Environment and Development, in the report “*Our Common Futures*” in 1987. The Brundtland Commission defines sustainable development as:

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development is a process of change in which the exploitation of resources, the direction of investment, orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations (WCED, 1987:43-46).

This could be the most widely acceptable definition because many of the reviewed studies give this as the standard definition of SD (United Nations General Assembly, 1987: 43; Grubb, Koch, Munson, Sullivan and Thompson, 1993; Dernbach, 1998; Harris, 2000; Cerin, 2006; Stoddart, 2011). It provides a general idea of what sustainable development ought to be and emphasizes the significance of long-term considerations in the development process. This means that in any development process, we ought not to be myopic but rather consider the long term implications of our activities. The Commission expresses social, economic and environmental issues that reverberate with the context of contemporary society. As such, the environment, the economy and society should be balanced without one overriding the other two as the best way of ensuring wellbeing for current and future generations. This definition therefore provides a framework through which all development activities (including mining) ought to be conducted. It integrates economic policies, social policies and environmental policies into the new development paradigm.

However, it should be noted that the concerns raised by the Brundtland Commission are not simply economic or social or even environmental but they are also tacitly ethical in nature. For example, the connection between the current and future generations; the articulation of concerns about unchecked forms of economic growth; and the interdependence of human societies and ecosystems could all be interpreted within the domain of ethical discourse.

Following the BC definition, sustainable development has gained substantive prominence. For instance, Grubb, Koch, Munson, Sullivan and Thompson note that “since the publication of the Brundtland Report, the term ‘sustainable development’ (SD) has become prominent in environment and development policy. It has been enshrined as a basic objective of several

international agreements” (1993:180). A report by the International Institute for Environment and Development (IIED) also indicates that:

This definition has received broad support, because it is a deceptively simple formulation that has multiple layers of meaning and some profound implications. It allows flexibility within defined boundaries, and can be applied to the development of many activities. Since there is no single goal or path for getting there, sustainable development presents more a framework for change rather than a list of prescriptions to achieve it (2002:21).

This quotation seems to point to the fact that sustainable development can be applied widely to varied situations and institutions. For example, it is applied to development activities by governments, communities, businesses, schools and even to organizations working across borders.

However, the BC’s definition of SD has been contested by scholars such as Sharachchandra Lèlè, 1991:607; Qizilbash Mozaffer, 2001:134-161; Kates, Parris and Leiserowitz, 2005:8-21; who state that its weakness can lead to contradictions in policy making. As a result, subsequent definitions have been articulated by different scholars and institutions. For example, Robert Goodland and George Ledec define sustainable development “as a pattern of social and structural economic transformations which optimizes the economic and other societal benefits in the present, without jeopardizing the likely potential for similar benefits in future” (1987:36). This definition seems to indicate that both the present and future generations should gain as much economic and societal benefits accruing from any development activity. It also seems to give mandate to efficiency so that the most possible will be consumed by all. However, from this definition, it is not clear what the volume of consumption should be and how we can ascertain as to whether we have exceeded it or not.

Goodland and Ledec’s definition seems to accept different types of benefits for both the present and future generations, so long as they are comparable. Contesting this definition, Richard Norgaard argues that the human and natural environment might change considerably with respect to what can be produced, but not necessarily be better or worse. While both the definition of Goodland and Ledec as well WCED on sustainable development rightfully stress people in the ‘now’ and ‘future’, sustainable development nevertheless depends on the present conditions of the environment which present peoples pass on to the future peoples (1994:17). If Norgaard’s argument attempts to claim that we cannot ignore the future generations, it could be suggested

therefore that whatever development activity we do ought to be influenced by a spirit of solidarity and intergenerational justice. It thus appears critical to engage on how we can ensure sustainable mining even for future generations.

Another definition of SD is advanced by the International Union for the Conservation of Nature (IUCN). According to IUCN, “sustainable development refers to improving the quality of human life while living within the carrying capacity of supporting eco-systems” (IUCN, 1991). This definition seems to suggest that the welfare of people depends on caring for the earth. Therefore failure to conserve the earth causes low quality of life for the people. It also brings in the component of people and the environment while pursuing development. In other words, while pursuing development, the ecosystem is equally as important as the people living within that particular society. From the economic perspective, Robert Solow defines sustainable development “as the obligation to conduct ourselves so that we leave to posterity the option or the capacity to be as well off as we are” (1991: 181). Crucial to Solow’s definition is the assumption that all resources including minerals, metals as well as ecosystems (the ones we consume and the ones we pass on to the next generations) are fungible⁵ and intersubstitutable. According to the economic approach, substitutes can be found for every resource and ecosystem that our technological activities require. An analysis of Solow’s approach to sustainable development seems to suggest that as society uses up the resources, it is able to meet immediate needs and also if prudent, to set aside money for the future in form of investments. Arguably, the rationale seems to suggest that as the investments grow, the bequest package for the future increases and as the resources are depleted, money for developing substitutes is thereby available.

To Solow, this approach is both ethical and realistic since it is unclear which lifestyles the future generations will adopt. With complete fungibility of bequest package, the freedom of future generations to choose their life plans is enhanced. Solow’s argument seems to suggest that the environment is a whole and therefore should be treated as such. He seems to focus on the resources and their fungibility, and yet the environment is more than the monetary sum of those ‘resources’. In the process of mining, the whole ecosystem is affected and many of its components cannot be replaced. For instance, safe air, safe water and soil fertility cannot be substituted with a financial

⁵ Fungible herein means that resources can be replaced by another identical item. A fungible good, therefore, has to be a very good and safe store of value if it is always of equal value to itself. Only such a good store of value "can serve for, or be replaced by, another (Camacho, 1998:547).

bequest package. The exhaustion of non-renewable mineral resources means that they are gone forever and cannot be recuperated. This also applies to other features of the environment that are tampered with in the process of mining. The quality of air is compromised, habitats are lost forever and when toxic materials are dumped into water bodies, aquatic life is affected as it faces extinction.

Ernst Conradie notes that sustainable development has become a value which serves as an important corrective against expansionists' notions of economic growth that disregard the environmental impact of such economic activities (2008:36). In a similar vein, Stone Carpenter notes that current practices, whether taken out of necessity or choice, can irreversibly alter human and natural environments, closing off options for future generations and potentially threatening the viability of the biosphere for human life itself (1998:275). This seems to imply that the only way through which we can control the effects of human activities on the environment and ensure survival of future generations is by embracing sustainable development. John Rawls, an American political philosopher in the liberal tradition, endorsed the idea that we have a duty to take care not only of our own generation, but also of our immediate successors. He suggests a "just savings principle" by which reasonable investments are made by the present generation to ensure protection of the next generation (1999; 2001). This principle seems to deny the acceptability of plundering resources and leaving none remaining for the future. On the whole, the sustainable development framework extends ethical concern to future generations. It challenges us to reflect upon the safety and welfare of forthcoming generations, and to consider their basic needs and wants as deserving of our ethical consideration.

Having defined SD, the next sub section presents some of the principles of SD that are relevant to the study.

2.1.2 Principles of Sustainable Development

The sustainable development paradigm has advanced fundamental ideologies and values in order to satisfy the environmental, economic and social development needs of both current and forthcoming generations. "Reaffirming the Declaration of the United Nations Conference on the Human Environment, adopted in Stockholm on 16 June 1972, the 1992 Rio Summit made a

declaration of the principles of sustainable development which were later adopted by the UN General Assembly” (UNCED Rio Declaration, 1992:1-5)⁶.

2.1.2.1 Principle One: The centrality of human beings in promoting sustainable development

“Human beings are at the center of concerns for sustainable development” (Rio Declaration, 1992:1). This principle suggests maximization of human wellbeing. Relating this principle to the concerns of this thesis, human beings should be at the core of mineral development. This means that in pursuing mining, the wellbeing of the people should not be undermined. As such, the environment should be protected from any degradation that reduces the wellbeing/ dignity of the local communities. This is because human wellbeing depends upon the quality of the environment and it is therefore in the best interest of human beings to protect the environment. It could also be argued that humanity is inseparable from nature, and therefore the totality of nature should be our concern and the target of environmental management and policy. It is not possible to injure nature without injuring an integral part of humanity.

2.1.2.2 Principle Two: Nation States exploiting natural resources in line with their development and environmental policies

According to the declaration, “States have the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies” (1992:1). This principle seems to suggest that in the exploitation of resources, the amount of environmental damage can be determined by the State according to its environmental policies. The State must then implement measures to reduce the environmental damage caused by its activities to other nations. In other words, the economic decisions that a State undertakes must adequately reflect and be cognizant of environmental impacts even beyond its borders.

2.1.2.3 Principle Three: Balancing the environmental and developmental needs of both the current and forthcoming generations

This principle states that “development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations” (Rio Declaration, 1992:2). It requires

⁶ The UNCED Rio Declaration lists twenty seven principles of sustainable development. However, considering the scope of this study, ten of these principles are deemed to be relevant and are discussed.

that we protect the environment for the benefits of both current and future generations. It therefore calls upon the present generation to be good stewards recognizing that we are custodians of the environment and economy for the benefit of not only the current but also the future generations. Intergenerational and intra-generation equity are fundamental in this principle⁷. This is similar to Weiss Brown's argument that "all generations are partners, caring for and using the earth. As such, each generation needs to pass the earth and its natural resources on to the next generation in at least as good condition as that in which we received them" (1990:199). The implication of this is that while undertaking mining, we ought not to threaten the development and environmental needs of future generations. According to Igor Vojnovic, "such intergenerational equity can be attained through observing four rules, namely not consuming resources at a rate that is greater than their regeneration rate; maintaining waste discharges at or below the assimilative capacity of the 'natural ecology'; pricing resources according to scarcity; and substituting exhaustible resource stocks with renewable resources" (1995:225).

2.1.2.4 Principle Four: Centrality of protecting the environment while undertaking developmental activities

Development activities are altering and threatening the environment at a fast pace and yet, humanity and the economy cannot survive without the natural environment. In emphasizing the importance of the environment, the Rio Declaration states that "environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it" (1992:2). This implies that "genuine development cannot take place on a deteriorating environmental resource base; neither can the environment be protected when development considers only economic benefits and excludes the costs incurred from environmental destruction" (Holden, 2008). Thus, in pursuing development, we ought to accept the boundaries of a finite planet. Development is thus constrained by environmental limits. As such, promoting responsible stewardship of natural resources and the environment, including remedial action of past damage, is paramount.

⁷ The BC defines intra-generational equity as "equity within our own generation and intergenerational equity as equity between generations that is, including the needs of future generations in the design and implementation of current policies" (WCED, 1987:5-6). In its report on equity, the Paley Commission states that on our own generation lies the responsibility for passing on to the next generation the prospects of continued well-being (Paley Commission, 1977:1).

2.1.2.5 Principle Ten: Local community participation in environmental decisions and issues

“Environmental issues are best handled with the participation of all concerned citizens, at the relevant level” (Rio Declaration, 1992:3). This principle invites all people to acknowledge their duty towards protecting the environment. This is attributed to the fact the environment affects every individual. As such, it is important to consider all the concerned stakeholders from the communities where the development projects are to be implemented rather than only involving the developers and the top government officials. Involvement of all concerned citizens contributes to the and/ or enforcement the development of appropriate legislation, regulations and policy while at the same time promoting democracy. Including the various stakeholders in key environmental and development issues contributes to a diversity of opinions and perspectives which enables policy makers to obtain a balanced perspective on the issue at stake.

2.1.2.6 Principle Eleven: Promulgating and enacting laws on environmental protection

Where there is no environmental legislation, unsustainable patterns of production and consumption may result. As such, the environment may continually be exploited in order to meet consumption needs. Andrew Holden argues that the adoption of the ideology of consumerism as a global creed is placing increasing demands upon the environment to satisfy our needs and desires. Consumerism has removed people from nature and has presented them with a need to define new notions of community associated with satisfaction of needs, wants and increased levels of prosperity (2008:25). With the increasing need to satisfy wants as well as the increased levels of prosperity, environmental degradation increases. To control this, proper environmental legislation and policies ought to be promulgated, enacted and enforced. The SD framework is very useful when developing key environmental regulations and policies for the mining sector. Hilson and Murck argue that “by preventing significant environmental problems from the outset, and by adopting proactive environmental standards, the mining industry can contribute to improved sustainability” (2000:228).

2.1.2.7 Principle Fifteen: Taking precaution to reduce pressure on the environment

The Rio Declaration states that “the precautionary approach shall be widely applied by States according to their capabilities” (1992:3). The precautionary principle is “an anticipatory model to protect humans and the environment against uncertain risks of human action through prior

assessing and quantifying risks in order to eliminate or diminish further damage” (UNESCO, 2005:7). This principle was developed “because of the perception that the pace of efforts to combat problems such as climate change, ecosystem degradation, and resource depletion is too slow and that environmental and health problems continue to grow more rapidly than society’s ability to identify and correct them” (Barry, 2006:63). A review of the precautionary principle indicates that it is consistent with the belief of ecological sustainability because it is concerned with reducing pressure on the natural environment. Carter argues that “it is also a practical expression of intergenerational equity because in order to protect the world for our descendants, we need to be sure that our actions will not cause irreparable harm to the environment” (2001:207). The precautionary principle therefore fosters and strengthens approaches that safeguard both human and environmental health in case of unclear threats (Kriebel et al, 2001:871).

One of the main arguments for the precautionary principle is that it seems more reasonable to undertake preventive measures right from the inception of development projects rather than maintaining the status quo. Krishna Rao argues that sustainable development cannot afford to ignore development policies that are based on incomplete and uncertain information. In addition to these features, system uncertainties or stochastic features of the bio-geophysical combined with nonlinear and irreversible phenomena call for a cautious approach largely expressed in terms of the precautionary principle (2000:100). Fundamental to this principle “is the aspect of anticipation, reflecting a requirement that effective environmental measures need to be based upon actions which take a long-term approach and which might anticipate changes on the basis of scientific knowledge” (Rio Declaration, 1992:3). However beneficial mineral development could be on the growth of the economy, its negative impacts to the environment must be considered and measures of averting them taken. The precautionary principle demands the exercise of prudence where impacts are unknown or uncertain. As such, in an attempt to protect the environment and human health from damage and ensure sustainable mining, it is paramount to adopt the precautionary approach.

2.1.2.8 Principle Sixteen: Polluter pays principle

Principle Sixteen of the Rio Declaration states “that national authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due

regard to the public interest and without distorting international trade and investment” (Rio Declaration, 1992:4). This implies that people whose activities pollute the environment ought to incur the expenses of handling pollution in order to avert harm to both humanity as well as the natural environment. This principle appeals directly to our sense of justice. This is reiterated by Cordato Roy that:

The polluter pays principle is an extension of one of the most basic principles of fairness and justice: people should be held responsible for their actions. Those who cause damage or harm to other people should “pay” for that damage. This appeal to our sense of justice is why the “polluter pays principle” (PPP) has come to resonate so strongly with both policy makers and the public. Forcing polluters to bear the costs of their activities is good economics too; it not only advances fairness and justice, but also enhances economic efficiency. In other words, with appropriate policies based on a PPP, we should not have to give up the economic efficiency of a free market system based on private property in order to obtain environmental protection, nor vice versa (2001:1).

The justification of the pollute pays principle (PPP) is to decrease pollution by creating an optimal level of pollution where the economic benefits are equal to the costs of pollution reduction. The polluter pays principle can help decrease pollution but cannot totally eliminate it. An appropriately understood “polluter pays principle” would then castigate people who harm others especially through polluting the environment. As a result of development activities threatening the environment, the polluter pays principle can be a justification for exerting very high taxes on all development activities. Furthermore, in placing limits on pollution, non-human beings are also protected from environmental pollution. It is clear that the constitutional right to a clean and health environment for all citizens in Uganda operates on this fundamental premise.

2.1.2.9 Principle Seventeen: The relevance of environmental impact assessments

Environmental impact assessment (EIA) involves evaluating the anticipated impacts of development activities on the natural environment and then planning on how they are to be addressed. Holden argues:

The use of environmental assessment can vary from site specific development to forming part of a strategic environmental assessment aimed at examining the consequences of environmental policy. Although there is no set structure to the components of an EIA, it is generally assumed that EIAs would typically assess future levels of noise pollution, visual impact,

air quality, hydrological impact, land-use and landscape changes associated with a development (2008:192).

Environmental impact assessments are a good idea. However, undertaking a proper environment impact assessment requires a number of specialists ranging from environmental scientists and geographers (including hydrologists and geologists) to social scientists in case the assessment is to include a social impact assessment such as human rights impact assessments. However, there is a challenge in forecasting the likely occurrence of the effects. In response to this, Holden asserts that “it is necessary to distinguish between the impacts that will occur during construction operation and possible closure of the complex” (2008:193). In the context of mining in Uganda, there are more challenges because the sector comprises many small-scale and artisanal miners who are not obliged to undertake environmental impact assessments, and yet its contribution to the nature of environmental damage is incremental and cumulative.

2.1.2.10 Principle Twenty two: The role of indigenous and local community in development and environmental conservation

This principle states that “indigenous people and their communities, and other local communities, have a vital role in environmental management and development” (Rio Declaration, 1992:4). It points to the fact that local community participation is paramount in the achievement of sustainable development because it incorporates the demands and values of the local community into any development activity. The processes of planning and decision-making should rest on the local community, encouraging local ownership of resources and responsibility for environmental problems. In other words, decisions and resolutions ought to be made closer to the people and communities who are directly impacted by the mineral development.

Community participation, according to Sproule, involves “giving people more opportunities to participate effectively in development activities, empowering them to mobilize their own capacities, to be social actors rather than passive subjects, manage the resources, make decisions and control the activities that affect their lives” (1996:236). As such, community participation is one of the key components of an empowered community (Reid, 2000:1). Kumar notes that participation encourages the local community to take initiatives and actions which are stimulated by their own thinking and deliberation and over which they can exert effective control (2002:24). Kakumba and Nsingo note that through community participation, people decide, act and reflect on

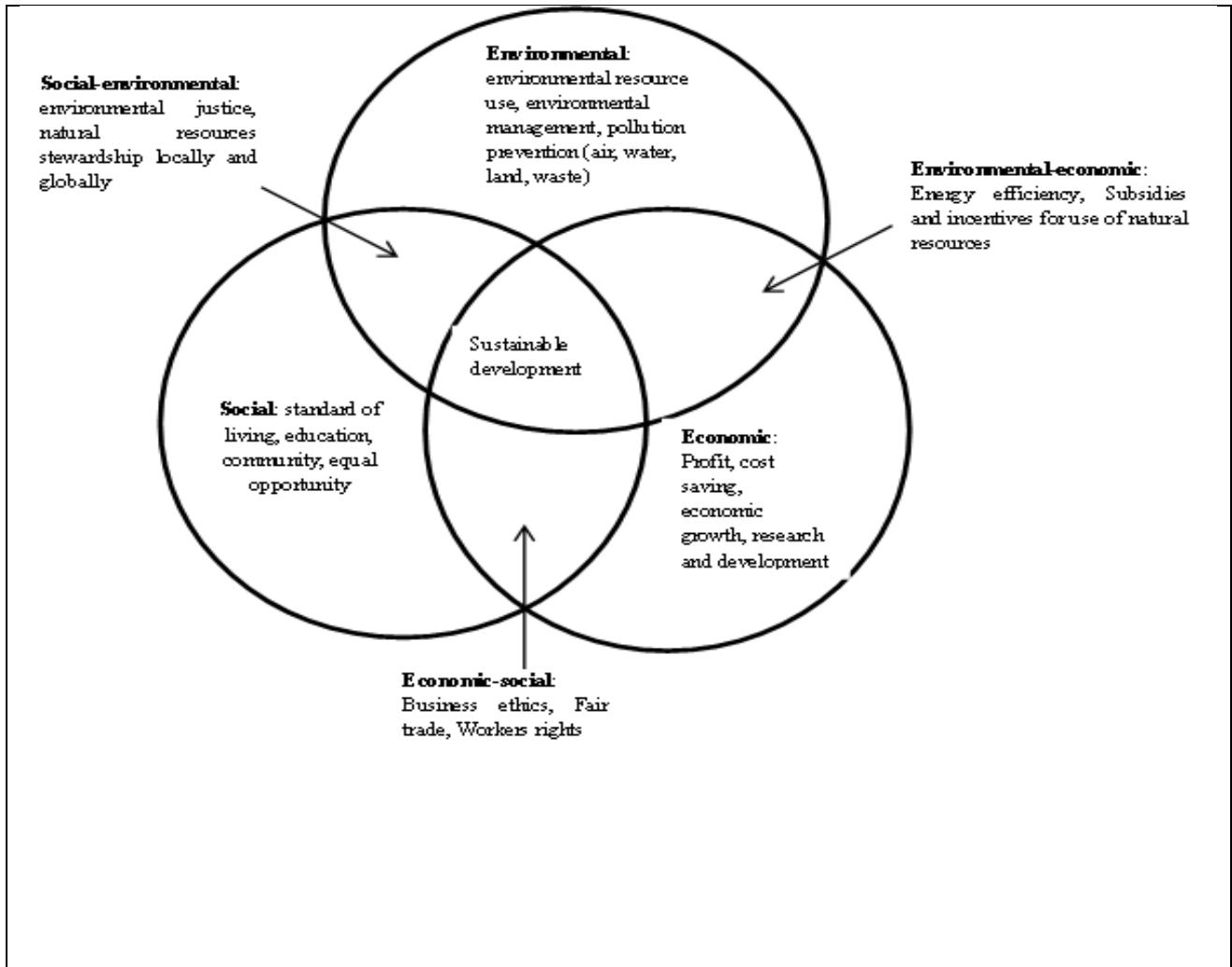
their actions as conscious subjects (2008:107). This implies that people (local communities) are totally responsible for every environmental action and are the primary agents in environmental decision-making. When the local community is not involved in development and environmental decision-making, particular individuals in that community make decisions on behalf of the whole community. Such decisions may reflect individual interests. However, through effective local community participation, people are empowered to take part in their own development and at the same time, their role in development is visible.

The above discussed principles will guide the analysis in Chapter Seven as well as the proposed ethical paradigm in Chapter Eight. Having looked at the principles of SD, the next subsection discusses the pillars and components of sustainable development.

2.1.3 Components of sustainable development

According to the Brundtland Commission, sustainable development comprises three equally important pillars, namely the environment, the economy and society. SD therefore represents incorporation, understanding and acting on the intricate interdependences which occur amongst the three pillars. This is not considering one pillar against the others, but recognizes the interdependent nature of these three pillars. The combination of the three components leads to a sustainable development framework. This framework has been illustrated in a number of ways. This study will fit within the SD framework that is depicted in form of a Venn diagram as illustrated in the figure below.

Figure 1: The Spheres of Sustainable Development



Source: University of Michigan Sustainability Assessment report (2002:8)

The diagram above describes the sustainable development framework. It represents the relationship between the environment, society and the economy. As can be observed, each of the elements is represented by a circle. Below is a discussion of each of the elements of the sustainable development framework.

2.1.3.1 Environment

The first element (circle) represents the environment and points to sustainable environmental development. The environment takes into consideration natural resource use while ensuring environmental management and pollution prevention (of water, air, and land). The environment is typically valued as a resource that ought to be protected from extinction while being exploited

(Bartelmus, 1994). Jonathan Harris argues that “an environmentally sustainable system must maintain a stable resource base, avoiding over exploitation of renewable resources or environmental sink functions; and the depletion of non-renewable resources only to the extent that investment is made in adequate substitutes. This includes the maintenance of biodiversity, atmospheric stability, and other ecosystem functions not ordinarily classed as economic resources” (2000:5).

The International Institute of Environment and Development notes that the “development process, if it is to yield lasting results, has to safeguard life-support systems; use renewable resources within their regenerative limits; and respect the capacity of ecosystems to absorb and break down wastes” (2002:19-20). As such, it could be argued that where there is sustainable environmental development, there is protection of ecosystems and biosphere; increased quality of air, land, water; better management of waste and pollution; respect and protection for all species (flora, fauna, marine); measures to ensure resource sustainability; and harmony and protection of marine resources. Environmental sustainability thus challenges policy makers to design activities that not only meet human needs but indefinitely protect and safeguard the life-support mechanisms of the environment.

2.1.3.2 Economy

The second circle represents the economy and it points towards sustainable economic development. From the schematic, sustainable economic development involves economic growth, profit, cost savings as well as research and development. Economic sustainability is therefore the use of various strategies for exploiting existing resources optimally so that a responsible and beneficial balance can be achieved over the longer term. It involves “acknowledging natural capital scarcity while producing a continual supply of goods and services” (Bartelmus, 1994). In other words, under the economic component, there is a fundamental idea of economic efficiency and optimal use of limited resources. According to the IIED, the economic pillar “uses the market to signal the relative scarcity of goods and services and creates a robust economy that can serve as the foundation for social and environmental progress” (2002:19). This implies that sustainable economic development ought to be governed by appropriate policies and guidelines; effectual resource distribution; and fair or just access to resources.

2.1.3.3 Society

The third circle represents society and it points to sustainable social development. Undoubtedly, the amalgamation of economy and environment is necessary. Such amalgamation can be attained with the support of the society (the third element of the SD triad). Jonathan Harris argues that “if we cannot rely on unregulated markets to solve our problems, we must then turn to conscious social action” (2000:14). It is within the society that the formulation of SD policies takes place. According to the schematic, the social element comprises better living standards for the people as well as access to basic services such as education, health and markets. Therefore sustainable development from the social component may be described as “development towards improving the quality of life- for example equality, freedom, health, security, and education; while staying within the limits of environmental carrying capacity” (Bartelmus, 1994).

In a similar manner, Harris argues that “a socially sustainable system must achieve distributional equity, adequate provision of social services including health and education, gender equity, and political accountability and participation” (2000:6). In other words, the social systems of sustainable development center on the improvement of people’s living standards through provision of basic needs and equitable development. They are more people-centered and seek to “maintain the stability of social and cultural systems, including the reduction of destructive conflicts” (Munasinghe and Mc Neeley, 1994). Sustainable social development embraces the ethical component of socio-economic fairness or social justice. Social justice is hampered by the continued inequality between the lifestyles of the wealthiest and those of the poorest. Warner Keith Douglas argues that the “lifestyles of the wealthiest and the poorest pose the greatest threat to the integrity of the earth's life support systems. The wealthiest consume vastly more than their fair share of resources (more than the planet can provide for everyone), while the poorest have no alternative but to use resources in a short-sighted way” (2009:6). The social component of sustainable development therefore challenges the wealthy to stand in solidarity with the poor. As such, sustainable social development lessens the income gap between the rich and the poor; invests in basic health and education; is implemented in a way that fully engages the beneficiaries through participatory inclusion; and provides better life chances and opportunities for all while ensuring protection from exploitative practices.

2.1.3.4 Intersection of the sustainable development components

The schematic also presents the interrelationships between the different components. For instance, at the intersection of society and the environment, socio-environmental relations such as environmental justice and environmental stewardship can be realized. Similarly, at the intersection of the environment and the economy, environmental-economic relations such as energy efficiency and incentives for use of natural resources are attainable. Further, at the intersection of the economy and society, economic-social relations such as business, fair trade and workers' rights are realized. It is important to note that the intersection point for all the three elements represents sustainable development. In the schematic it is referred to as sustainability. Genuine sustainable development is therefore development where all three components interact on an equal basis. In other words, it preserves the environment, promotes a healthy life and communities thrive while keeping the economy stable. However, realizing this kind of development involves a change in the behavior of people such as limiting the burden we place on the environment so that it is able to support future generations.

The Brundtland Commission notes that it is impossible to separate economic development issues from environmental and social issues (WCED, 1987:30). Sustainable development is therefore “a common currency that unifies environmental, social and economic values and links today's choices to tomorrow's consequences” (Projet de societe, 1995). In other words, it involves the simultaneous pursuit of economic prosperity, environmental quality and social equity. As such, all the three components are interdependent and mutually reinforcing pillars of sustainable development.

However, in as much as interdependence of the three components is the ideal of the SD paradigm, in contemporary society the economy is usually given primacy in policies at the expense of the environment and the society. From the discussion above, it is important to note that sustainable development is not simply about a green economy only but rather the whole economy including its human and natural resources as well as its growth. In other words, all the three elements are interrelated. The economy is not an independent entity but rather depends on the society and the environment. Society and human existence also depend on the environment. On the whole, sustainable development therefore aims at avoiding, mitigating or remedying social imbalances and environmental destruction while ensuring economic progress and development. Relating it to

the study, the development of the mining sector ought not to be driven only by economic gains such as increased gross domestic product (GDP) through provision of jobs and revenue generation in form of royalties and taxes to the Government. It should also have consideration for the environment as well as the people, especially those in the areas where mining is taking place.

Mieczkowski Zbigniew argues that investors treat the environment as an inexhaustible gift of nature because the free market system has been, to date, unable to incorporate the cost of natural resources and the value of environmental damage (1995:160). Mieczkowski's argument seems to suggest that investors prioritize profit maximization at the expense of the environment. Such investors seem not to have internalized the environmental costs as yet. With such a mindset, developers have re-sized the circles to show that one factor (the economy) is more dominant than the other two (environment and society). Bob Willard gives an example that some business leaders prefer to show the economy as the largest circle because it is the most important to their success and it makes their worlds go round. Such business leaders draw society as the second largest circle because that is the context of their customers and other important stakeholders. The environment would then be the smallest because it is the most external to standard business metrics (Willard, 2012). Such a mindset reflects a notion that the economy can exist independently of environment and society. This is neither true in sustainable development nor in reality.

Rolston argues for protecting the environment in sustainable development as it ensures that the economy is kept within the environmental orbit. He asserts, "*We ought to conserve nature, the ground matrix of life. Development is desired but even more; society must learn to live within the carrying capacity of its landscapes*" (Rolston, 2010). Rolston's argument suggests that conservation of the environment is essential for both sustainable economic production and society as a whole. The more developers engage in unsustainable activities, the more risks such activities pose to the local population, the country, and humankind as a whole.

In reference to the schematic, we have to look at the social, economic and environmental impacts of mining. Mining cannot be done independent of the environment. This is because the environment provides the necessary mineral ores and deposits. Similarly, there cannot be a healthy society without a healthy environment. Where people fail in stewardship roles, the environment is threatened. And when the environment is threatened, people suffer because with a sick environment, there is an unhealthy society and finally the economy is also affected. For instance

Uganda's dependence on unsustainable mining could greatly affect not only the environment and society but the economy as well in the long run. Although mining may contribute to the annual gross national product and gross domestic product, it destroys the natural environment and resource base upon which it is dependent. Therefore prioritizing the economic pillar of SD over the environment and society limits the SD framework.

While this sub section above discussed the three components of sustainable development, the next sub section discusses the major approaches to sustainable development.

2.1.4 Approaches to sustainable development

Given a variety of beliefs, values, concerns and priorities supporting humanity's use of natural resources, there are quite differing means to sustainable development. These are classified in two broad categories, namely 'technocentrism' and 'ecocentrism'. These approaches are fundamental for this study because they will guide the analysis to ascertain the approach which drives mineral development and investments in Uganda.

2.1.2.1 Technocentrism

Technocentrism has been defined "as the application of rational and 'value-free' scientific and managerial techniques by professional elites who regard the natural environment as a neutral entity from which man could profitably shape his destiny" (Hays, 1959:2). Through the application of such 'value-free' scientific and managerial techniques, "man is supremely able to understand and control the events that suit his purposes" (O'Riordan, 1981:33). From the definition, it is evident that technocentrism depicts the notion that by using science, mechanical solutions can be found to every problem (including environmental challenges). The implication is that while pursuing development, man can through science and technology control nature. However, it is not obvious that technical solutions can solve all problems accruing from mining. For instance, in the extraction of minerals, large pieces of vegetation are cleared and there is usually disturbance of the ecosystem. How then could science and technology be applied to extract resources from underneath the ground without have to clear the vegetation and disturbing the ecosystem? Even when such technology exists, it could be so costly that developing nations such as Uganda may not be able to afford such initiatives. In as much as technocentrism could be a dominant approach to development, it becomes challenging to apply technical solutions to solve all the environmental

problems resulting from development activities. In my view, technocentrism views the environment as a resource to be exploited by humanity as deemed fit and necessary.

Within technocentrism, different positions can be taken on sustainable development. For instance the ‘treadmill’ approach, which focuses on accruing material products and pursuing wealth creation; and ‘weak sustainability’ which assumes that all resources are replaceable including non-renewable resources (Baker et al, 1997). Such a perspective seems to put emphasis on continuous economic growth which is usually echoed in economic calculations such as Gross National Product (GNP) and Gross Domestic Product (GDP). Rao Krishna notes that the weak sustainability position also believes that some of the problems of environmental and ecological degradation may be worth incurring if the benefits of such exploitation render more income for society than the apparent costs, thus buying off the non-monetary losses with the monetary levels of potential compensation (Rao 2000:88). The emphasis on continued economic growth implies that the social and environmental costs and degradation may be downplayed. However, the problems associated with ecological degradation are grave and have far reaching impact. Thus in my view, no amount of financial resources are considered sufficient to compensate for the environmental damage accruing from development activities. It is almost impossible to quantitatively measure the value of the natural environment.

2.1.2.2 Ecocentrism

Ecocentrism is described as resting upon the supposition of a natural order in which all things moved according to the natural law, in which the most delicate and perfect balance was maintained (McConnell, 1965:190). Contrary to technocentrism, ecocentrism promotes the “virtues of reverence, humility, responsibility and care; argues for low impact technology (but is not anti-technological); decries ‘bigness’ and impersonality in all forms; and demands a code of behavior that seeks permanence and stability based upon ecological principles of diversity and homeostatis” (O’Riordan, 1981:33). It therefore lacks faith in both modern technology and technical elites, and advocates for alternative technologies which are likely to be more environmentally benign, and more democratic in the sense that they can be owned, maintained and understood by individuals with little economic or political power (Holden, 2008:154). Ecocentrism is based on four main premises, namely that all beings, whether human or non-human possess an intrinsic value; that all beings are of equal value and there is therefore no hierarchy of species in nature; that all nature is

interconnected, with no dividing lines between the living and the non-living, the animate and inanimate or the human and non-human; and the earth is finite in its carrying capacity (Doyle and McEachern, 1998). These ideas are in divergence with the technocentric understanding on development, which views the environment as a resource to be exploited by man as deemed fit rather than as having inherent value; and considers technical solutions to environmental problems. Ecocentrism therefore seems to be an ideal approach however its applicability in the present era of capitalism remains unrealistic.

Strong sustainable development is located in the concept of ecocentrism and upholds that ecological conservation is a prerequisite of economic advancement. It refers to maintaining every component of natural capital intact (Rao, 2000:88). Strong sustainability points to the fact that some types of capital (such as natural capital) are not substitutable because their loss could endanger the very survival of the human race as such capital is often irrevocable within generational time frames (European Commission Enterprise Directorate General, 2004:26). It therefore “requires that development policies aim to maintain the productive capacity of environmental assets, and preserve other environmental assets deemed worthy of protection” (Rao, 2000) in the state in which they are currently. Strong sustainable development thus “takes the qualitative aspects of the environment into account and local communities’ involvement in decision-making over development issues” (Holden, 2008:169). In view of mining and strong sustainability, the study will analyze the level of engagement and participation of local communities within the mining areas in decision-making processes. This is attributed to the fact that participation is key principle in the achievement of SD.

Another component of ecocentrism is the ‘ideal model’. This model is

“Underpinned by a strong ethical dimension that affirms that nature and non-human life have intrinsic value which extends beyond their usefulness to humans. The measurement of growth expressed in quantitative terms ceases to be relevant as the quality of life becomes the objective of development, rather than the standard of living” (Baker et al, 1997:15).

With regard to mining, the effect of this standpoint is that conservation of the environment places limitations on the exploitation of minerals and use of the natural resources to guarantee a better quality of life of both humans and non-human entities. Such a model will guide this study in proposing an ethical paradigm which aims at guaranteeing a good life in society.

On the whole, both the technocentric and the ecocentric approaches to sustainable development have implications for policy design and implementation which could help inform mining activities. Baker et al argue that “while ecocentrism focuses on the community and espouses small scale locally based technology, the technocentric approach can be distinguished by its optimism over successful manipulation of nature and resources in the interest and to the benefit of humankind” (Baker et al, 1997). How the two approaches can be incorporated to bring about a paradigm shift is very important for this study.

2.1.5 Critique of sustainable development

This section discusses the strengths and weaknesses of the SD framework. It begins with the strengths and thereafter considers the weaknesses of the framework.

2.1.5.1 Strengths of sustainable development

Sustainable development has a number of strengths. To begin with, the three pillars of sustainable development, namely environment, economy and society, all have resonance at a commonsense level. Jonathan Harris argues that “they satisfy the criterion set forth earlier by the Brundtland Commission for a powerful, easily grasped concept which can have wide applicability. If we could move closer to achieving this tripartite goal, the world would be a better place” (2000:6). Businesses and investments affect the economy, society and the environment so a development framework that takes cognizance of all the three components is important for evaluating development activities. Furthermore, Peter Knox notes that:

The Brundtland Report comprehensively addresses a range of technical challenges posed by the apparent incompatibility between environment and development. It makes no attempt to sugarcoat the bitter pill of over consumption and unsustainable use of resources. It is optimistic in its assumptions about the possibility and desirability of future growth, as well as in its belief in international solidarity and good will around common challenges (2015:120)

The Brundtland report was well written following the pitfalls of environmental damage and costly cleanup in the developed nations. Examining it critically, one observes it that it draws lessons for developing countries to learn from the environmental crisis that has been majorly brought about by developed nations as a result of industrialization.

SD has become the logical framework for transformation and for determining best practices. Jonathon Porritt, as cited in Dalal-Clayton and Bass, notes that:

Sustainable development is the only intellectually coherent, sufficiently inclusive and potentially mind-changing concept that gets even half-way close to capturing the true nature and urgency of the challenge that now confronts the world. There really is no alternative (2001:4).

The fact that the sustainable development framework illustrates the importance of all three pillars and does not undermine any pillar against the others, shows that it is a catalyst towards positive change. Its realization is contingent with the common belief of the fundamental connection between the economy, the local communities and their surroundings as well as the determination for positive change. With this in mind, it could be argued that SD is the ideal model for addressing and analyzing development and environment issues in Uganda's mining sector.

Sustainable development is an important and useful decision-making tool. With regard to the economy, society and environment, the decisions could be categorized into “*win-win-win*” decisions, “*trade-off*” decisions and “*no-go*” decisions. The International Institute on Environment and Development argues that:

Some decisions advance all the goals identified by sustainable development simultaneously: they improve material well-being for this generation, spread that well-being more equitably, enhance the environment, strengthen our ability to manage problems, and pass on enhanced stocks of capital to future generations. Other decisions will result in both gains and losses. If the gains are great enough and the losers can be compensated, the decision should be to proceed. This is the zone of trade-offs and requires an agreed mechanism for reaching a decision. ‘No-go’ decisions – A final group of decisions may go past some widely accepted limit, such as destroying critical natural capital or transgressing fundamental human rights. If these conditions hold, the decision should be to not proceed (IIED 2002:22).

This quotation shows the importance of the SD framework as an ideal benchmark and point of reference for all investment decisions made by governments, investors (companies) and even individuals. As such, by using this framework, appropriate decisions towards sustainable mining can be made.

SD has progressed from being a thought-provoking yet disputed model to a framework that is widely recommended and endorsed by many institutions (including governments, local and

international businesses as well as civil society organizations and individuals. Drexhage and Murphy argue that “the nearly universal adoption of sustainable development as a guiding principle is in part due to its flexibility because it allows various stakeholders to adapt the concept to their own purposes” (2010:9). The International Council for Local Environmental Initiatives (ICLEI) reports about the response of different Local Governments towards sustainable development. “Over 6400 local governments in 113 countries were involved in local Agenda 21 activities in 2001” (ICLEI, 2002:4). The UN General Assembly likewise notes “the widespread acceptance of sustainable development as evidenced by the adoption of sustainable development strategies by 106 national governments in 2009” (2010:11). In addition, a number of international institutions such as the World Bank and International Monetary Fund (IMF) have made commitments to sustainable development through sustainable globalization and sustainable economic growth (World Bank, 2010; IMF, 2010).

SD has also attained popularity in the private sector through the practice of voluntary social responsibility by corporate companies. In addition, a number of initiatives to advance sustainable development have been established. Drexhage and Murphy note that initiatives and institutions such as “the World Business Council on Sustainable Development, Global Compact, Equator Principles, Global Reporting Initiative and Extractive Industries Transparency Initiative, World Wildlife Fund (WWF), Oxfam International and Friends of the Earth have increased the scale and sophistication of their involvement in sustainability principles” (2010:10). The SD framework therefore permits the application of practical ideas in diverse contexts. The fact that the notion of sustainable development is extensively acceptable and embraced by different people and institutions in different circles and integrated in their daily operations is a strength which cannot be underestimated.

The sustainable development framework has been described as ambiguous with this ambiguity permitting a variety of perspectives to be taken on sustainable development. For instance, Pardy (1996) notes that:

The ambiguity of sustainable development makes it sufficiently flexible to allow a wide variety of policy decisions from a given set of facts. It combines environmental, social and economic concerns but does not prioritize them in the case of conflict; it does not establish an environmental bottom line.

With such ambiguity, Lèlè argues that sustainable development is “a metafix that unites everybody from the profit-minded industrialist and risk-minimizing subsistence farmer to the equity-seeking social worker, the pollution-concerned environmentalists, the growth-maximizing policy-maker and the goal-oriented bureaucrat” (1991:613). This is echoed further by Norgaard who argues that sustainability is being called for by many groups from tribal peoples to the most erudite academics, from peasant farmers to agro-industrialists, from denim-clad eco activists to pinstriped-suited bankers (1994:11). In my view, this ambiguity could be the major reason as to why the sustainable development approach is still being used to address the challenges confronting different nations, institutions and businesses. Yet at the same time, it is a complex framework and therefore is open to criticisms, misconceptions and misunderstanding. With this in mind, the next section explores some of the weaknesses of SD that have been identified by scholars.

2.1.5.2 Weakness of sustainable development

Even with sustainable development becoming a popular term and being commonly used, it has been extensively criticized. One of the major criticisms is the incompatibility of the two terms sustainability and development. Ernest Conradie argues that the noun “development” cannot be qualified with the adjective “sustainable” (2008:37). According to the Longman Dictionary of Contemporary English, “development” is defined as a process of growth for something to become stronger and advanced, while “sustainable” refers to being able to continue for a long time maintaining some reality (<http://www.ldoceonline.com/dictionary>). However, an analysis of these two definitions shows that referring to something as sustainable means that it can be preserved within its ordinary form devoid of reducing its quality and quantity. With development pointing to growth, how then do we ensure growth while ensuring that the environment is maintained and is not reduced in its capacity? This baffling nature of the SD concept could be a contributing factor to its manipulation with development taking priority over environment and society.

Another weakness of sustainable development emerges from the definition. A number of definitions have been advanced, many of which are vague, mere rhetoric and therefore considered undesirable (Lèlè, 1991:613; Mozaffer, 2001:134; Eeten and Roe, 2002: 20). A number of people (including practitioners and those in academia) have enunciated and endorsed their own unconventional descriptions of sustainable development. Meanwhile a comprehensible, precise, and indisputable connotation remains obscure. Kates et al argue that “if anyone can redefine and

reapply the term to fit their purposes, it becomes meaningless in practice, or worse, can be used to disguise and green-wash socially or environmentally destructive activities” (2005:20). O’Riordan et al. cited by Steurer articulates the vagueness of SD saying that nobody could oppose such a nice “meta-fix” definition, which covers the whole human endeavor and planetary survival (2001: 538). Many of the definitions are normative and only state a desired end state or commendable set of values but do not indicate how to achieve the desired state. As such, there is no internationally recognized agreement on the thorough connotation of sustainable development. However, there is no doubt that SD is relevant in society today. This is reiterated by Beatley and Manning that “although SD is a good thing, it still requires a clear definition and elaboration” (1998:3).

Sustainable development is further criticized on the grounds of the lack of an operative definition and lack of clear agreement on what should be sustained (Villanueva, 1997:154; Sachs, 1999:25; Berke and Conroy, 2000). Despite the fact that the term “sustainable development” has become common currency among many groups, it is a confused and sometimes contradictory idea and there is no widespread agreement as to how it should work in practice (Redclift, 1994:17). As such, a “lack of a comprehensive framework for understanding sustainable development and its complexities given the multidisciplinary literature on the concept” (Jabareen, 2004:624). With the term meaning something different to everyone, the quest for sustainable development is off to a cacophonous start. This is because as individuals, we still have different economic positions to protect and different aspirations to achieve. While the logic of the SD framework is commendable, sustainable development has eluded numerous attempts to give it a comprehensive operational definition (Norgaard, 1994:11).

Similarly, the concept of sustainable development is predominantly “symbolic with competing interests, each redefining it to suit their own political agendas rather than serving as an influential basis for policy development” (Andrews, 1997:19). This is echoed further by Matthews and Hammill who assert that the major challenge since the 1992 United Nations Convention on Environment and Development was held is in developing a plan to progress from theory to practice. This is attributed to majorly political and technological constraints (2009: 1119). In a similar manner, Drexhage and Murphy argue that “since the Brundtland report and the Rio Summit, governments and organizations have taken up sustainable development as a desirable goal and developed metrics for sustainable development, but implementation has proven difficult”

(2010:6). All these arguments seem to point to the elusiveness of SD and that its realization may remain theoretical if there is no standard operation definition that applies to all categories of people ranging from government, to developers, businesses and individuals.

SD has been criticized for being practically unattainable as there can never be a ‘win-win-win’ scenario among all the three pillars. Jonathan Harris notes that

The three elements of sustainability introduce many potential complications to the original simple definition. The goals expressed or implied are multidimensional, raising the issue of how to balance objectives and how to judge success or failure. It is almost impossible that all the three can be realized at equal levels (2000:6).

The implication of this quotation is that there can never be a situation when the three elements of sustainable development are at equilibrium. Very often one may be prioritized at the expense of the others. This is reiterated by the International Institute of Environment and Development (IIED) that

Many of the complicated decisions that need to be made on the path towards sustainable development will involve compromises or trade-offs between different objectives and dimensions, between different groups of stakeholders, and between different generations. There may be conflicts between global and local priorities. Long term needs will need to be balanced against short-term imperatives. The various stakeholders acting in concert will need to evaluate the acceptability of, for example, sustaining minor environmental damage in exchange for major social and economic gain, or of sacrificing economic and social goals for a significant environmental benefit (2002:22).

In practice, it is impossible to stay away from compromising between the environment, society and economy. Norgaard argues that “we can maximize only one objective at a time. It is impossible to define sustainable development in an operational manner in the detail and with the level of control presumed in the logic of modernity” (1994:22).

Sustainable development is in some way considered inadequate due to its continuous advocacy of the economic growth agenda. While the Brundtland Commission Report promotes economic growth centered on protection of the environment, it still calls for “the possibility for a new era of economic growth” (WCED, 1987:1). To support this emphasis, Boff maintains that sustainable development never gets away from its economic origins such as rising productivity, accumulation

and technological innovation (1997:66). Dinger cited in Lippert argues further that eventually growth is the fundamental cause of over-using nature. Therefore, the cause of the problem cannot not at the same time be its solution (2004: 22). Nudler (1986) argues that

Economic growth requires expansive industrialization, which in turn accounts for the rapid depletion of resources, pollution of air and water, emission of hazardous gases, and use of toxic chemicals which eventually lead to environmental disorders such as resource scarcity, global warming, ozone depletion.

From the arguments it is clear that SD is criticized for retaining an economic focus at the expense of the environment and society.

A number of emerging economies view sustainable development as a system of ideals introduced by industrialized nations with the aim of forcing stringent conditions and rules. This has led to disagreements between certain developed and developing countries. Developing nations blame the developed nations for contributing to the current global environmental crisis, especially during their industrial revolution. As the developing nations imitate the developed countries in order to achieve the same level of development, they are being controlled by the developed nations with the argument that there is need to mitigate the current crisis. Developing nations have expressed concerns with such arguments, given the urge to adopt intensive resource practices in order to attain wealth and growth. Drexhage and Murphy argue that “economic growth has been the framework used by developed countries in attaining their unprecedented levels of wealth, and it should be no surprise that major developing economies are following the same course” (2010:6). This suggests that as long developing countries are still pursuing development through resource-intensive practices, attaining sustainable development may remain theoretical and never a reality.

Another criticism is with regard to the concept of “needs” of future generations. Future generations cannot be considered to be part of our “moral community”. A social contract with such non-persons is not possible. Since we cannot identify the participants, we cannot have a contract, and there would be no tangible reciprocity (Golding, 1972). The future generation has no rights since we cannot identify relevant persons receiving such rights (Parfit, 1984). The rights of such potential persons therefore cannot be assigned, since many such potential persons may never be born. In a similar manner, Lippert argues that:

The needs for future generations are useless since they are historically, socially, and culturally shaped; and constructed in discourses, which take place in the context of power-relations. As such, the hegemonic definition of sustainable developments “future needs” is ethnocentric and thus useless. If future generations should have the same options as we have today, we would need to stop any interventions in nature immediately. To get to know the needs of future generations is not possible. Since they do not exist, they cannot formulate them... (2004:27).

The above quotation shows that there should not be any consideration for the next generation because their needs are unknown to the present generation. Therefore saving resources may be a wasteful. However, in my view, whether sustainable development is defined in terms of needs for future generations or not, the most important thing is to protect the environment for itself and in itself because when we fail to do so, the effects of a degraded and polluted environment will affect us all in the long term. Coupled to this instrumental value of the environment to humanity, it has inherent worth and value which should be appreciated.

While the concerns raised by scholars regarding the usefulness and applicability of the SD framework are valid, I still believe that the framework is useful for this study. This is because it is the only model that brings together economic, social and environmental concerns in development. Having discussed the sustainable development framework, the next section presents the ethical theory of consequentialism and its significance to the study.

2.2 Ethical theory of consequentialism

Another theory that underpins this study is the ethical theory of consequentialism. Since the study intends to ethically critique the contribution of Uganda’s mining sector to development, society and the state of environment crisis; the most appropriate approach to this is through looking at the consequences of the activities of the mining sector on the environment, society and development. This section therefore discusses the theory of consequentialism, its relevance to the study, and its strengths and weaknesses.

2.2.1 Definition and meaning of consequentialism

According to the Cambridge Dictionary of Philosophy, “consequentialism” is a moral theory that states, “an action is morally right if and only if it produces at least as much good (utility) for all people affected by the action as any alternative action the person could do instead” (Audi, 1995:824). In this sense, “no act is to be judged as good or bad in itself but its wrongness or

goodness is dependent on the consequences of the action” (Brown, 1995:41). This means that the right thing to do in any situation is the act with the best consequences. Lars Bergström notes that consequentialism “stresses the way people (or sentient beings, in general) are affected by our actions. What matters is the welfare or the preferences of everyone to whom our actions make a difference” (1996: 76).

Consequentialism demands producing the utmost equilibrium of pleasure over displeasure, ensuring that similar attention is given to the happiness and unhappiness of all those who are to be impacted by certain actions (Olen and Barry, 2001:8; Mulgan, 2001:3). Therefore, a morally right action is “one that produces a good outcome or result, and the consequences of that action or rule generally outweigh all other considerations” (Mastin, 2008). From the definition, it is clear that consequentialism is an appropriate ethic to evaluate the contribution of investors in the mining sector to development, society and the environment. How mining activities affect others should be a moral concern. Using the consequentialist ethic, the study will therefore evaluate the contribution of mining to development, society and the environment in Uganda to ascertain whether it is morally good/right or bad/wrong.

Consequentialism takes different forms and approaches, each pioneered by particular individuals. Among the proponents for consequentialist ethics are Jeremy Bentham and John Stuart Mill with their utilitarian version; Henry Sidgwick (ethical egoism); Robert Nozick (rule of consequentialism); Auguste Comte; G.E Moore; Mozi; William Godwin; Peter Singer; Peter Railton; and Phillip Pettit among others. The next section therefore discusses some of the approaches of consequentialism and their relevance to this study.

2.2.2 Approaches of the ethical theory of consequentialism

The ethical theory of consequentialism takes various approaches, each of which has its own uniqueness and relevance to this study. To begin with “ethical egoism”, each agent ought to cause maximum intrinsic value for him/herself. This ethic demands that each agent should act in his/her narrow self-interest because each person’s only obligation is to cause the best consequence for him/herself. “Contractarianism” evolves out of ethical egoism and it is the view that ethics is a state-enforced social contract that forces co-operation between ethical egoists for the eventual benefit of each agent (Kernohan, 2012:32). In my opinion, many of the environmental problems and challenges in contemporary society could be attributed to egoism because people often act in

their own narrow self-interest and neglect the effects of their actions on the environment and others. Therefore egoism is pertinent to the ethical analysis of the economic approach of the investors in Uganda's mining sector to the environment and the local communities.

Another form of consequentialism which is important for this study is "subjective consequentialism" or "utilitarianism". Under "subjective consequentialism", an agent's beliefs concerning the possible consequences of an alternative play a prominent role in determining that alternative's normative status (Vessel, 2008:47). Following utilitarianism, the intrinsic value that we seek to maximize pertains to utility. An action is believed to be moral if its consequences contribute to the goal of promoting and achieving happiness and lasting benefits for the greatest number, and it is morally wrong if its consequences produce pain and misery to the majority.

Utilitarianism takes two forms, namely hedonistic utilitarianism and preference satisfaction. Hedonistic utilitarianism is where each agent ought to cause the maximum balance of pleasure over pain (Kernohan, 2012:33). According to hedonistic utilitarianism, pain and pleasure are the only things of ultimate importance and form the basis of the standard of right and wrong. The only states of affairs with intrinsic value are the pleasurable mental states of entities with moral standing. With regard to the environment, this ethic on one hand demands that we should not consider the interests of entities without mental states in ethical thinking (for example, plants). However, on the other hand, all entities that can experience pleasure and pain have moral standing and therefore in making ethical decisions, they ought to be considered. This includes not only human beings but also non-human beings such as animals. Preference satisfaction utilitarianism on the other hand demands that each agent ought to act to bring about the maximum amount of satisfied desires/preferences of recipients with moral standing (Kernohan, 2012:33). In other words, what is good is determined by satisfaction of people's preferences whatever they are, while what is not good is the prevention of people's preferences.

"Objective consequentialism" is a moral doctrine that an act is right if and only if there is no alternative with a better outcome, and wrong otherwise. An act is obligatory if and only if it is wrong not to perform it (Andric, 2015:1). Objective consequentialism also takes different approaches (common good, teleological and disposition). According to the "common good" approach, each agent ought to act in such a way so as to contribute to the betterment of the community as a whole, including the ecosystem. Common good connotes those goods that serve

all members of the given community and their institutions (Etzioni, 2009:114). This approach suggests that ethical reasoning ought to be based on the individual's interaction with the community, where community members are bound by the search of common values and goals. It therefore implies that whatever activity we engage in should be geared towards the advancement of the entire community, including human and non-human beings such as air, animals, water, and landscape.

This therefore means that while pursuing development activities, respect, care and compassion for all is fundamental. Our actions should cause as minimal damage as possible to the environment because an unhealthy environment will deteriorate the life of all its members. In analyzing the contribution of investors in Uganda's mining sector to development and the state of environment crisis, the common good approach is relevant.

The "teleological" approach obliges each agent to act so as to best enable the natural functioning of recipients with moral standing. This approach allows moral consideration for both human and non-human entities that do not feel pain and pleasure; don't have preferences; and those that cannot make rational autonomous decisions about what they want to do (Kernohan, 2012:74). In other words, the teleological approach assigns intrinsic value to any entity that has a natural activity, purpose, potential and function.

Furthermore, objective consequentialism entails the "disposition approach" where each agent ought to act so as to best satisfy the wants that people would have if they were fully informed and were reasoning rationally. The disposition approach is based on the premise that the wants people would have if they were fully rational may well be different from the wants that people actually do have in their present, less than fully rational state (Kernohan, 2012:33). For people to be fully aware and act rationally, they ought to be given the right information and be allowed to participate in their own development. In the context of this study, the disposition approach will be relevant in analyzing people's participation in mineral development.

Having discussed the different approaches of the ethical theory of consequentialism and how these inform the study, the next sub section presents a critique of consequentialism.

2.2.3 Critique of the ethical theory of consequentialism

The section gives the strengths and weaknesses of the ethical theory of consequentialism.

2.2.3.1 Strengths of consequentialism

One of the strengths of consequentialism is that it is flexible and shows a significant level of internal pluralism. This is because it takes different forms and approaches in an attempt to defend its tenet. Alan Holland notes that its shape-shifting tactics have made it increasingly difficult to breach the defenses of consequentialism and could be the source of its continued resilience. For every objection of the consequentialist ethic, avenues of escape have opened up that are compatible with remaining within the umbrella position that almost everyone may find a home there (2014:109).

Consequentialism is concerned with making the world a better place because it requires the production of the best overall state of affairs. The world ought to be a better place. As such, we are morally obliged to improve society and make it better whenever we can. As long as the consequences of an action promote the good and make the world better, then such actions are morally right and as such should be embraced. It is a known fact that actions last only a short time but their results remain for a long time. It is therefore the results of those actions that matter and should be the basis for decision making and policy. Tim Mulgan notes that consequentialism in this regard seems a rational approach since it promotes value (2001:15). Consequentialists believe that the most rational way to respond to any value is to promote it (Pettit, 1993:230-33; Scheffler, 1994:123).

Consequentialism is also applauded as a natural account of the central moral values of impartiality and equality. According to Roger Crisp, on the face of it, consequentialism treats all agents perfectly equally and is thus perfectly impartial (Crisp, 1992:139-140). In his “*Morality and the Theory of Rational Behavior*”, John C. Harsanyi notes that “all informed, rational people whose impartiality is ensured because they do not know their place in society/ ‘veil of ignorance’ would favor a kind of consequentialism” (1977:623-656). It therefore competes with the Kantian and Contractualist accounts of impartiality and equality. Similarly, Peter Singer (1993) argues that “the interests of all the sentient beings (beings who are capable of experiencing pleasure or pain),

including non-human ones affected by an action, should be taken equally into consideration in assessing the action”.

One of the most persuasive defenses of consequentialism in all its forms is that it is embedded in the other ethical theories. For instance, if one was to consider virtue in deciding whether an action is morally right, how would one decide in any given case which of the actions open to him/her is brave, kind or prudent thing to do unless he/she pay some attention to the consequences of what they do? Also if one was to infer to principles, how would one extricate oneself other than by resorting to consequentialist considerations? (Holland, 2014:109). Based on Holland’s argument, whatever approach one decides to use has an element of consequentialism. This is one of the strong points for the ethical theory of consequentialism.

With regard to the environment, the consequentialist notion of “value” is considered relevant in discussions of environmental problems because it is better suited for situations that are new and unfamiliar. According to Katie McShane, under conditions of rapid and serious climate change we will soon be living in very unfamiliar circumstances, in which emotional attachments and relationships with others will be less relevant (2014:29). In such situations, consequentialism can then be used to determine what is good or bad depending on the presumed consequences. On a similar note, consequentialism is applauded because it evaluates the entire ecosystem and not just sentient beings. This is another reason why this approach is important for evaluating the contribution of investors in the mining sector to development, the environment and society.

Despite the strengths, any approach is open to criticism, misunderstandings and misuses. With this in mind, the next section looks at some of the weaknesses of the ethical theory of consequentialism that have been identified by scholars.

2.2.3.2 Weakness of the ethical theory of consequentialism

Consequentialism has become almost the default position governing policy and decision-making including, environmental decisions. However, even with its adoption, consequentialism has been challenged widely. Many criticisms of consequentialism are directed at showing that the policies and actions that consequentialism recommends are for one reason or another unacceptable from a normative point of view (O’Neill, Holland and Light, 2008:32-44). In this sub-section, the study presents the major arguments against consequentialism.

To begin with, consequentialism is criticized for demanding “a lot” for it compels us to undertake actions that ought to be, moral choices (neither mandatory nor prohibited). If the choices made by individual actions fail to maximize utility overall, then they are considered morally wrong. This “requirement to maximize utility, strikes many people as too demanding because it interferes with personal decisions which most people feel should be left up to the individual” (Armstrong, 2006). However, in my opinion, placing demands on humanity is inevitable. This should therefore not be a reason for undermining consequentialism. This is because consequentialism is very important for the wellbeing of the majority. For example, the environment affects everyone. Therefore an analysis using consequentialism would be ideal.

Furthermore, consequentialism is criticized for being “inherently anthropocentric and/ or sentientist, ignoring the rights and intrinsic value of other species and biological entities; and justifying environmentally destructive policies by making sentient individuals, rather than species and ecosystems, the locus of moral concern” (Wolff, 2006:7). However, in as much as the claims that many of the consequentialist environmental policies and actions are anthropocentric are valid, the ethical theory of consequentialism acknowledges the misery and pain of all conscious beings and does not indiscriminately tend toward humankind. Consequentialism recognizes the moral standing of ‘others’, including non-human beings. For instance, Peter Singer’s speciesism recognizes the ecosystem and values species inherently for what they are. This also shows the relevance of consequentialism for this study.

Another criticism of all versions of consequentialism concerns measuring the levels of pleasure and pain produced by moral actions. Matthew Hallgarth argues that it is impossible to measure pleasure and pain. He further notes that whether one focuses on quantity or integrates quality considerations, it is still nearly impossible to accurately predict which actions over time will maximize good consequences (1998:614). However with regard to development and the environment, an evaluation of the anticipated effects of development policies, decisions or actions on the environment is still fundamental. In as much as it is difficult to determine the amount of pleasure and pain the action may yield for the current and the forthcoming generations, it is possible to ascertain the impact of those activities on the environment, the people and the economy, given what is currently happening.

With regard to how we should act in relation to the environment, consequentialism is criticized on the basis that it is difficult to track outcomes and their causes across the different environmental horizons (ecological, evolutionary and cultural). This is because human activities often have unintended consequences (referred to as “side effects” for example pollution, change in climate and extermination of species). While these unintended consequences have far reaching ecological and evolutionary significance, the human activities that contributed to them have been constrained by the cultural horizon of one sort or another (Holland, 2014:115). For instance, human activities such as mining, agriculture, industrialization and agriculture have all contributed to the environmental problem and in some way contributed to climate change.

Using the consequentialist ethic, it becomes difficult to determine which of those activities is responsible for which effects. Stephen Gardiner notes that it is next to impossible to identify which agents and which actions are responsible for which effects. He bases his argument on the fact that “climate change is not caused by a single agent but rather a vast number of individuals and institutions not unified by a comprehensive agency” (2006:399). This study does not compare several activities but is rather concerned with only one activity (mining) and evaluates its contribution to development and the environment crisis in Uganda. Mining has both pros and cons on the ecological, evolutionary and cultural horizons. I therefore hold that the ethical theory of consequentialism is very relevant in the evaluation of mining activities on both development and the environment, the intent of this study.

Another criticism is that consequentialism does not have a comparative yardstick to measure outcomes across the different horizons (evolutionary, ecological and cultural). It therefore provides no assistance in identifying the best outcomes across all horizons simultaneously. Alan Holland notes that the failure to attain a standard measure for comparing outcomes across the horizons implies that we then resort to lexical ordering, yet as soon as we do this, we may be moving away from the notion of consequentialism. In such a circumstance, there is no difference from deontology that lexically orders its principles. Holland adds that using consequentialism, it is difficult to commensurate the very different demands laid by the different horizons. This is because the choice of the demands clearly makes a difference to the kinds of questions it is appropriate to ask and the kinds of actions we might contemplate (2014:117). However, while Holland’s concerns are valid, I still think consequentialism is useful for this study. This is because, in my view,

whatever actions taken whether deontological or consequentialist in nature, all have consequences. The study uses the ethical theory of consequentialism to weigh the benefits of mining against its adverse effects, focusing on the pleasure and pain resulting from thereof.

Another theory that underpins this study is the ethics of “stewardship”. The next subsection therefore discusses stewardship and its relevance to the study.

2.3 The Ethic of Stewardship

Natural systems underlie the earth’s ecological systems as well as the economics of social systems. Natural systems provide the substrate for our civilization’s survival. As such, stewardship of the environment is paramount. The ethic of stewardship offers a methodology for the protection and management of the environment. It also serves as an ideal approach from a leadership and governance perspective, through which the government ought to seek the best interests of its citizens. In this study, the ethics of stewardship informs the theory of sustainable development because stewardship reinforces sustainable practices. There is a close relationship between the two theories. Stewardship is therefore justified for this study on the basis of the increasing environmental and social problems experienced as a result of the mineral development activities on the people and the environment. The following section presents the ethic of stewardship and its relevance to the study.

2.3.1 Definition and meaning of stewardship

Crucial to note is that at the core of stewardship is the notion of taking responsibility for both society and natural environment. Stewardship is therefore in conformity with the concept of sustainable development. Generally stewardship applies to a number of contexts, but this study discusses stewardship from the perspectives of the environment and governance. From the perspective of environment, stewardship entails human beings “taking responsibility for the environment to protect it from harm, to maintain it to be habitable, to keep its treasures and to preserve it for future generations” (Chirisa, 2010:44). Wherever individuals or groups of people are settled, they are mandated and obligated to care for their environment- a major source of livelihood (Franks and McGloin, 2006). Human beings have an obligation to look after and preserve their environment either individually or in association with others. This duty applies to every individual whether in the business sector or not. In the context of business, this responsibility could be exercised through corporate social responsibility initiatives.

Although several definitions have been made with regard to stewardship, the term originally has its foundation rooted in religion. From the biblical perspective, “stewardship can be defined as utilizing and managing all resources which God provides for the glory of God and the betterment of His creation” (Bugg, 1991: 1303). In his work on *Interpreting Nature: Cultural Constructions of the Environment*, Ian G. Simmons notes that humans are part of God’s creation just like the rocks and the trees and that no one part is inherently superior to another (Simmons, 2003:129). In Simmons’ view, both man and nature become co-creators of the cosmos and God is, has been and will be present in all things. Undertaking this co-creation role demands that that we become good environmental stewards. However, even with strong calls to be good environmental stewards, humanity has instead dominated and controlled nature. In our dominion of nature, we have completely moved away from God’s purpose for man as a co-creator.

The “central essence of the biblical world view of stewardship is managing everything God brings into the life of humanity in a manner that honors God and impacts eternity. As such, stewardship begins and ends with the understanding of God's ownership of all” (Whelchel, 2012). In this regard, Meehan Èammon asserts that stewardship is a fundamental principle of the Lord’s teaching. Our role in life is to manage resources the Lord has given to us to ensure that these resources are passed onto the next generation. This should be the manner in which all Christians live their lives for it is a principle which allows us to judge our daily actions in relation to God’s wishes (Èammon, 2014:12). Ismail Serageldin argues that:

The Quran just like the bible teaches that we are stewards and trustees answerable to God. God’s grace is conditioned on the proper execution of stewardship. This assignment of stewardship is transferable from generation to generation and from group to group. Stewardship is therefore central to the very role of humanity in the cosmos. It is God's design that man should go to earth as his vice-regent. Discharging the responsibility of stewardship involves the entire behavior of the believer, and hence can serve as the core that defines the right behavior for a true Muslim at all times (1991:60-61).

From both Christian and Muslim perspectives, stewardship remains a fundamental standard which all humanity must practice.

Hugh Whelchel emphasizes that in as much as stewardship calls us to have dominion, humankind has often negatively interpreted dominion as some sort of violent and aggressive behavior and has thus treated the environment as such (Whelchel, 2012). This is evident in the activities that we

engage in which have left adverse effects on the environment. Yet even after noticing the negative effects on the environment, we have not stopped but rather have continued to engage in such activities driven by the desire for economic growth. As such, the dominion role has been negatively interpreted. Lynn White in his paper, “*The Historic roots of our Ecological Crisis*” notoriously wrote that “we are superior to nature, contemptuous of it, willing to use it for our slightest whim” (1967:1206). White based his writings and arguments on the Genesis mandate for human beings to have dominion and considered the development of technology for making all this dominion possible. This largely implies that since nature is inferior to man, then man can use it as he pleases, even if it involves destroying it. Pope Francis in his encyclical *Laudato Si* refutes Lynn’s argument. He echoes that:

We are not God. The earth was here before us and it has been given to us... Although it is true that we Christians have at times incorrectly interpreted the Scriptures, nowadays we must forcefully reject the notion that our being created in God’s image and given dominion over the earth justifies absolute domination over other creatures (no. 67).

Similarly, the 2003 Irish Catholic Bishops Conference argues that “the dominion given to man over the earth is a dominion of service, of responsibility and care, patterned on God’s own dominion over all creatures” (ICBC, 2003:13). In my view, this is the true essence of stewardship.

Correspondingly, the Compendium of the Social Doctrine of the Church (CSDC) argues that “the dominion of human beings over the world requires the exercise of responsibility and as such, it is not freedom from arbitrary and selfish exploitation” (Pontifical Council for Justice and Peace, 2004). Likewise, Peterson cited in Pushpa stresses that stewardship is the assumption of responsibility for the maintenance of the biosphere and the welfare of the world. “It is the recognition that we have been entrusted with care of the earth and the careful management of its natural and social communities” (2008:102). Serageldin indicates that exercising responsibility is about responsibility to God which involves responsibility for the well-being of the planet, other creatures, other human beings, and future generations as well (1991:60-61). From the above assertions, it is clear that stewardship expresses our obedience regarding the administration of everything God has placed under our control, which is all encompassing. John Paul II remarks that:

Care for the environment is not an option but rather a responsibility of everyone. It forms an integral part of our personal life and life in society. Not to care for the environment is to ignore the Creator's plan for all creation and result in an alienation of the human person (John Paul II, 1990:15).

In this regard Holmes Rolston asserts:

Our responsibility to Earth might be thought the most remote of our responsibilities; it seems so grandiose and vague beside our concrete responsibilities to our children or next-door neighbors. But not so: the other way round, it is the most fundamental of our responsibilities, and concerned with these loved ones. Responsibilities increase proportionately to the level and value of reality in jeopardy. The highest level that we humans have power to affect, Earth, is the most vital phenomenon of all (2011:24).

This implies that we must take our obligation towards the environment very seriously. It is true that the more we jeopardize the environment through unsustainable activities such as unsustainable mining, the more responsibility we shoulder and the more risky it is for us to inhabit as well as our loved ones. Therefore for the love we have for ourselves and our loved ones, our obligations to the environment ought to be prioritized. This is highlighted by Boutros Boutros-Ghali (the former UN Secretary General) at the closing ceremony of the Rio Convention on Environment and Development that “the Spirit of Rio must create a new mode of civic conduct. It is not enough for man to love his neighbor; he must also learn to love his world” (1992a:1). By love for the world, Boutros-Ghali implied the environment. He further argued that “we must now conclude an ethical and political contract with nature, with this Earth to which we owe our very existence and which gives us life” (1992b: 66-69). This assertion points to the fact that the environment (for this matter the “Earth”) is our home and the source of life. As such we should value and treasure it in itself because it possesses intrinsic value. Collins echoes this further when he states that “Earth is to be treasured and nurtured, something precious that must endure” (Collins, 1980: 6). It is only through exercising responsible stewardship that the earth can be nurtured.

Glavovic argues that from the perspective of ethical stewardship, recognition that a generation or nation or a whole society of nations cannot be the owners of the globe but only its trustees on behalf of succeeding generations emerges. This recognition imposes special responsibilities on humanity (1995:7). Although human beings have a privileged place in nature, they are exhorted to act responsibly and with consideration towards the natural world (Connelly and Smith 1999:12).

In light of this, stewardship demands that human beings undertake environmentally responsible roles where they are able to promote, uphold and enhance the integrity of the natural environment in ways that tender and nurture it.

The ethic of environmental stewardship thus invites us to consider whether we are managing our resources in a way that ensures that they are passed on to the next generation in a way that will enable them to enjoy and appreciate the bounty of nature which they too must pass on to their successors. This points to the Great Law of the Iroquois regarding stewardship which emphasizes sustainability of resources for the seventh generation. It states:

It is said that we are placed on the earth (our Mother) to be the caretakers of all that is here. The way in which we interact with the earth, how we utilize the plants, animals and the mineral gifts, should be carried out with the seventh generation in mind. We cannot simply think of ourselves and our survival; each generation has a responsibility to ensure the survival for the seventh generation. Therefore in every deliberation, we must consider the impact on the seventh generation... even if it requires having skin as thick as the bark of a pine (Clarkson, Morrissette and Regallet, 1992:87)

The decisions we make today concerning the environment may have long-lasting impacts on the forthcoming generations. Current generations ought to think about the trade-offs between current benefits and sacrifices and the prospective for future gains and burdens. Serageldin indicates that the exercise of stewardship comprises of “development of the earth” which according to him involves “taming nature to serve humanity's purpose, cultivating its resources, and increasing its bounty. This must be done as steward, not as rapacious exploiter. Actions are balanced, with limits imposed on greed and personal ambition so that the underlying, sustaining system is nurtured” (1991:60-61). It is therefore our duty to ensure that we safeguard the future of the earth through ensuring its protection. This involves acting in a humane and responsible way towards the well-being and sustainability of the environment and other species. The welfare of present and future generations can only be secured through proper stewardship of the environment now, not tomorrow. With regard to mining, environmental and social changes are bound to occur. Disruptions can impact on the physical environment as well as local communities in the mining areas. However, these impacts are avoidable, or can be mitigated, if companies are required in law and policies to operate according to the best possible standards. These standards ought to be

designed in a way that ensures the respect for and well-being of the environment and the community.

Pushpa states:

The global sphere that we depend upon for life is provided to us as a gift and we are thus responsible for its care and well-being. The responsibility of caring for the ecosystem comes to us because of our capacity to be the most adaptive, while at the same time the most destructive, of all creatures on earth. The sustainability of the earth and the biosphere is ensured when we humans operate on an understanding of how natural processes are intended to function and the role each species plays within the ecosystem (2008:102).

Similarly, the Compendium on the Social Doctrine of the Church claims that the respect of men and women “must take into account the nature of each being and of its mutual connection in an ordered system; we cannot interfere in one area of the ecosystem without paying due attention both to the consequences of such interference in other areas and to the well-being of future generations” (Pontifical Council for Justice and Peace, 2004). This calls for prudence (an important virtue in the conservation of the natural environment). With regard to respect for nature, the UN Millennium Declaration declares that “prudence must be shown in the management of all living species and natural resources, in accordance with the precepts of sustainable development. Only in this way can the immeasurable riches provided to us by nature be preserved and passed on to our descendants. The current unsustainable patterns of production and consumption must be changed in the interest of our future welfare and that of our descendants” (UN General Assembly, 2000: x). Stewardship consequently invites humanity to make wise judgments in complex trade-offs in search for a sustainable world. It requires a balance between competing needs in making wise choices. This therefore suggests that “we take precautionary action now, and assume the responsibility for environmental protection over time, rather than push problems off on future generations” (Warner and DeCosse, 2009).

The US Environmental Protection Agency Innovation Action Council defines environmental stewardship as:

The responsibility for environmental quality shared by all those whose actions affect the environment. This sense of responsibility is a value that can be reflected through the choices of individuals, companies,

communities, and government organizations, and shaped by unique environmental, social, and economic interests. It is a behavior demonstrated through continuous improvement of environmental performance, and a commitment to efficient use of natural resources, protection of ecosystems, and, where applicable, ensuring a baseline of compliance with environmental requirements (EPA, 2005:2).

One thing that is clear from the ethic of environmental stewardship is that in a move towards sustainable economies and outcomes, preservation of natural resources is paramount. Carl Leopold argues that stewardship encompasses conservation, environmentalism, sustainability and the land ethic which extend ethical concerns to orderly and sensible interactions between humans and the world in which they live. Humans living in communities know that effective communal living depends upon the acceptance of moral standards or ethics, and that a functional feature of ethics is that individuals accept certain restraints of actions which allow then for better functioning of the community (1998:225). The lack of necessary restraint in the utilization of resources prevalent in many communities around the world today is responsible for the damages to the environment. What seems to be emerging from the above in relation to this study is that environmental protection and conservation is only possible if governments, businesses, organizations and individuals develop guidelines which restrain them from exploiting the environment and which require adherence in law and practice.

Stewardship invites us to “relook at our attitude towards wealth, economic growth and how we distribute and consume the goods of this earth” (ICBC, 2003:15). Pope John Paul II during the 1990 World Day of Peace message remarked:

Modern society will find no solution to the ecological problem unless it takes a serious look at its lifestyle. In many parts of the world society is given to instant gratification and consumerism while remaining indifferent to the damage which these cause... If an appreciation of the value of the human person and human life is lacking, we will also lose interest in others and the earth itself. Simplicity, moderation and discipline, as well as a spirit of sacrifice, must become part of everyday life, lest all suffer the negative consequence of the careless habits of a few (n. 13)

Echoing the above, Pope Benedict XVI’s statement in his “*Caritas in Veritate*” speaks of the crucial responsibility to pass on the environment to the next generations in a state that they can as well meaningfully live in it. He affirms:

[W]hat is needed is an effective shift in mentality which can lead to the adoption of new lifestyles in which the quest for truth, beauty, goodness and communion with others for the sake of common growth are the factors which determine consumer choices, savings and investments (n. 51).

This seems to imply that if we are to be proper stewards of the earth, then we ought to change our behavior, lifestyles and attitudes towards the earth through desisting from over-consumption and embracing restraint as well as moderation in the consumption of goods.

Stewardship involves treating the environment with care. Segun Ogungbemi (1997) asserts that:

Humans necessarily rely upon the natural world for existence and because of this reliance, we must treat the environment with due respect for the sake of current and future human well-being. The African traditional relationship with nature, men and women recognized the importance of the natural world including water, land and air management. As such they attached a lot of respect and care to the environment that they could not take more than they needed from nature. To them, this was a moral code and it could explain why the earth, forests, rivers, wind and other natural objects are traditionally believed to be both natural and divine.

Similarly, Samson Gitau notes that “the traditional African concept of nature is a rich one that views humanity as partner with, other than master over, nature as natural objects and phenomena are regarded as God’s revelation” (2000:4). This implies that the traditional and so-called primitive people understand their stewardship roles in relation to the environment, and through their beliefs have resisted the tendency towards desecration of nature for plunder and grandeur. Such traditional notions of the environment could offer insights into how the present generation can desist from desecrating nature.

Environmental stewardship is echoed further by Leonardo Boff when he expresses dissatisfaction with the scientifically dominated concept of development and progress which he believes basically regards the earth as infinite with unlimited resources thereby ignoring the cry of the poor and treating the environment as without worth. Lack of care for the environment has accelerated ecological degradation and created a powerful vortex of despair and destruction from which it is becoming increasingly difficult to escape. He argues that the only way humanity can come towards a future where meaning, hope and beauty can flourish is by taking a path which leads to peace, harmony and right relationships with nature (Hathaway and Boff, 2009). In my view, this is only

possible when we take our responsibility to the environment with utmost commitment and diligence.

JNK Mugambi in his foreword to Gitau's book points out:

When Charles Darwin alluded to the “law of the jungle”, to “the survival for the fittest”, these allusions were assumed to apply to plants and animals, since humans were “civilized” and “responsible”. However, there is great doubt about the capacity of human beings to think and act responsibly with regard to their habitat. The recklessness with which the environment has been and continues to be plundered makes one wonder as to whether there will be any habitat worthy talking about in the near future, unless there are conscious efforts now to reverse the trend of environmental degradation. The fact that planet earth has become an endangered habitat for flora and fauna can no longer be a matter of debate. It is evident to both the learned and the unschooled, that the environment in which we live is becoming more and more hostile to human habitation. It is also evident that human beings in every nation and culture are responsible for much, if not all the degradation of the environment (2000: i)

The above quotation points to the failure of humanity in its stewardship role. In order to come out of this environmental crisis, we must begin to treat the environment with care and not as a resource to be exploited. In treating the environment with care, we are exercising our stewardship role. Aiden Msafiri (2011) stresses the need to collectively develop a true ethos and culture of compassion, care, empathy and solidarity towards the earth. He also emphasizes developing life-caring values in bringing about deep change as a best practice to save our sick rivers, sick air, sick mountains, valleys, forests, depleted resources and the entire environment as a whole. Since humanity and nature are inseparable, a lack of a caring attitude towards the environment would imply that humanity is harming itself because it will suffer the adverse impacts of sick rivers, sick air, sick mountains, valleys, forests, depleted resources.

Daniel Quinn in his provocative novel *Ishmael* argues that “what is needed is for human beings to change the fundamental myth on which most of the civilized world operates: The old horror of Man Supreme, wiping out everything on this planet that doesn't serve his needs directly or indirectly” (1992:249). Quinn presupposes the creation of morally upright individuals through changing the story which most of us live by. Quinn's view is re-echoed by Gorman who states that “once we have internalized a new myth, we will know how to share resources, not just with other human beings but also with other species” (1998:202). Similarly, Max Nicholson argues that “the

first step of responsible environmental care must plainly be to reject and scrub out the complacent image of man as the conqueror of nature and of man as licensed by God to conduct himself as the earth's best pest" (1970:264). Ken Saro-Wiwa in his poem "*A Walk in the Prison Yard*" supports Quinn and Nicholson's standpoint when he asserts:

The environment is man's first right
We should not allow it to suffer blight
The air we breathe we must not poison
They who do should be sent to prison
Our streams must remain clean all season
Polluting them is clearly treason
The land is life for man and flora, Fauna and all:
should wear that aura,
Protected from the greed and folly
Of man and companies unholy (Westra,
1998:152)

Saro-Wiwa's poem points to the fact that without a safe and healthy environment, neither humans nor non-human beings can live or flourish. Furthermore for every right, there is a responsibility. As Saro-Wiwa above asserts, if the environment is man's first right, then it is clear that man has a responsibility to ensure that the environment is properly taken care of. This responsibility invites man to be a good steward to the environment. Our moral failures, negligence and lack of commitment towards environmental stewardship will heavily cost humanity.

From the perspective of governance, stewardship refers to "the attitude and behaviors that place the long-term best interests of a group ahead of the personal goals that serve an individual's self-interests" (Hernandez, 2008:122). Following the stewardship paradigm, the government is obliged to care for the wellbeing of its citizens. With regard to the mining industry, this implies that the welfare of the indigenous people and communities around mining sites should be protected by the Government and the leaders. Where the investors are violating and undermining the rights of the local community, leaders ought to stand in solidarity with the community and act as a voice for the voiceless instead of supporting the injustice caused by the investors on the people. In so doing, leaders are exercising their stewardship role towards the people. Ethical stewardship in governance therefore invites leaders to seek the best interests of all its citizens and to be accountable for their well-being. Ethical stewardship challenges Government as well as local leadership in the mining areas towards ethical leadership and governance.

2.3.2 The need for Stewardship

To commit a crime against the natural world is a sin. For humans to cause species to become extinct and to destroy the biological diversity of God's creation... for humans to degrade the integrity of the earth by causing

changes in its climate, by stripping the earth of its natural forests, or destroying its wetlands... for humans to injure other humans with disease... for humans to contaminate the earth's waters, its land, its air and its life, with poisonous substances... these are sins. We have become un-creators. Earth is in jeopardy at our hands (Patriarch Bartholomew, 2004: 229–230).

Environmental stewardship can aid in preserving natural resources and achieving sustainable outcomes.

The ethic of environmental stewardship creates an opportunity to reframe the way in which environmental problems are viewed and addressed. Rather than discussing environmental problems in conservative, conventional and often overly technical terms, we can view them as opportunities for improving efficiency, engaging in problem-solving, and sustaining clean water, clean air and other natural resources (EPA, 2005:10).

This could, in turn, lead to a sustainable biosphere - a model which demands a baseline quality of the natural environment through which the economy ought to be planned and implemented. Rolston Holmes argues further that “the environment is not some undesirable, unavoidable set of constraints but rather that nature is the matrix of multiple values, many of which are not counted in economic transactions” (2011:14). The value of the environment is not always considered in the economic calculations of GDP and GNP and yet it is fundamental in ensuring economic growth. The destruction of the environment has a great impact on the economy of any country. In order to achieve a baseline quality of the environment, we ought to embrace environmental stewardship.

Environmental Stewardship promotes intergenerational reciprocity.

Intergenerational reciprocity occurs in situations where people cannot directly reciprocate good or evil left to them by previous generations and so they “reciprocate” by behaving similarly to the next generation. This reciprocity is based on the moral argument that some obligations to future generations have their source in the good received from past generations; people cannot reciprocate directly to the people who have benefited them, instead they pass on the benefits by reciprocating as a matter of retrospective obligation for the good which they received from past generations (Wade-Benzoni, 2002:1014).

It is only when we act as good stewards to the environment that we are able to preserve it and pass on a pollution free environment to the next generation. According to Wade-Benzoni's “intergenerational reciprocity” concept, passing on a degraded environment to the next generation

would imply that the next generation will also pass on the same degraded environment to the next generation which will also do the same to the next generation and this will continue.

The idea of intergeneration reciprocity is therefore crucial in encouraging responsible environmental stewards. To avoid passing on a degraded environment to the next generations, the time to act is now. We ought to rise above the self and leave a strong legacy for the “others”. By “others” I mean the future generations (both human and non-human beings). We ought to show concern for the welfare of the forthcoming generations by placing their interests ahead of our own self-interests. In doing so, we shall be instilling stewardship in our successors, an impact that may be reciprocated as these successors become the future generation of stewards.

From the perspective of governance, stewardship can help in the “careful and responsible management of the well-being of the population since it is the very essence of good government” (Travis et al, 2002:3). Governments have the role of taking responsibility for the health and wellbeing of their citizens. One of the ways through which governments can ensure this is through enacting and enforcing environmental regulations and policies. Adherence to these would imply less stress on the environment thereby minimising environmental degradation and pollution. This could be a step towards a healthy environment for all.

From the perspective of governance, being good stewards towards others means standing in solidarity with them. Since relationships are the basis for human society, showing concern for others is a fundamental ethical duty. As Murove argues, “our interests should be linked to the interests of others so that we contribute positively towards those who will exist in the future” (2005:211). This is an indication of an ethical existence in which people show concern for the well-being of others leading to harmony, consensus and mutual understanding within the society (Hartshorne, 1974:204). Such empathy towards the plight of others (especially those discriminated against and whose voices regarding development projects are not heard) underscores our stewardship role. It could also be one way of promoting the common good because humanity is indivisibly one entity.

2.4 Linkage between Sustainable Development theory, Consequentialism and Stewardship

The ethic of stewardship calls for taking responsibility for both people and the environment. It offers a methodology to the protection and management of the environment, on which humanity

and habitats rely through sustainable practices. This perspective declares that as human beings we have a responsibility to look after the environment, to treat it with respect, maintain it as habitable, protect it from harm and preserve it not only for ourselves but also for future generations. This is linked with the SD framework which calls for development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. Both call for responsible action towards the environment and fellow humanity. The ethics of stewardship informs the theory of sustainable development because stewardship reinforces sustainable practices. Stewardship is in conformity with the concept of sustainable development. The two theories can help to optimize the balance between environmental quality, human health, social well-being and economic growth.

Consequentialism in the other hand is a moral theory that judges an action as right or wrong based on its consequences. Consequentialism demands producing the utmost equilibrium of pleasure over displeasure, ensuring that similar attention is given to the happiness and unhappiness of all those who are to be impacted by certain actions. How can happiness be produced when the environment is degraded and people are suffering the negative impacts of development projects? Negative consequences of mining activities on the environment, economy and society are an indicator of unsustainable mining practices while positive consequences are an indicator of sustainable mining practices. Therefore, the ethical theory of consequentialism informs both the framework of sustainable development and the ethic of stewardship.

2.5 Conclusion

This chapter has presented the theoretical framework which underpins the study. It has discussed the sustainable development framework; the ethical theory of consequentialism and the ethic of stewardship; and demonstrated that they are the appropriate for evaluating the contribution of mining activities on development, society and the environment in Uganda. The chapter has defined sustainable development according to the different schools of thought; presented the principles of sustainable development as outlined in the 1992 Rio Declaration on Environment and Development; detailed the three pillars of sustainable development namely the economy, environment and society using schematic illustrations of the SD framework; and reviewed the approaches to SD namely technocentrism and ecocentrism; as well as the major critiques of sustainable development including both the positive and negative critiques.

This chapter has also discussed the ethical theory of consequentialism. It has noted that the evaluation of the consequences of an action is ideal in dealing with environmental problems. It has further presented the strengths and weaknesses of consequentialism arguing that even though consequentialism is not a completely satisfying theory based on the objections raised by some scholars, it is still able to provide an ethical lens which can help us to understand the impact of mining on development, society and the environment. Finally, the chapter has discussed the ethics of stewardship and noted that it demands taking responsibility for both the environment and other members in society. In other words, we have a duty towards the environment and fellow humanity to ensure collective well-being. Owing to the fact that the study intends to ethically critique the contribution of Uganda's mining sector to development, society and the environment, the next chapter gives an overview of Uganda including the background information as well as the status of the different environmental components.

CHAPTER THREE: AN OVERVIEW OF UGANDA'S NATURAL ENVIRONMENT

3.0 Introduction

In the previous chapter, the study explored the three theories (sustainable development, consequentialism and stewardship) that will guide in answering the main research question: “What are the ethical implications of the contribution of investors in the mining sector to development, society and the state of environmental crisis in Uganda?” In order to answer this question adequately, it is important to first discuss in detail the nature of Uganda’s natural environment. This chapter therefore presents an overview of Uganda’s natural environment. It is divided into three major sections. The first section presents Uganda’s background information including location, relief, climate, vegetation, population, geology and soils, political development, as well as major economic activities. The second section presents the different components of Uganda’s natural environment, particularly biodiversity, land and forest resources, water resources, and atmosphere. The third section presents the environment crisis in Uganda with particular reference to the key environmental challenges and the factors contributing to the crisis. This is then followed with a conclusion.

3.1 Background information

3.1.1 Location and size

Uganda, named the “Pearl of Africa⁸” by Sir Winston Churchill, is a former British Protectorate located in the Eastern part of Africa within the East African plateau in the Great Lakes region (Monitor Publications, 2012). Uganda is a landlocked country and is bordered by Kenya in the East, Southern Sudan in the North, Tanzania and Rwanda in the South and the Democratic Republic of Congo in the West (Aspermont Media, 2012:3; UNDP, 2013). Uganda lies astride the equator at Latitude 4⁰12’N and 1⁰29’S and Longitude 29⁰34’E and 35⁰’W. The minimum altitude above sea level is 620 metres (Albert Nile) while the maximum altitude above sea level is 5,110

⁸ Sir Winston Leonard Spencer Churchill the former British Prime Minister in his book *My African Journey* referred to Uganda as the “Pearl of Africa” in 1908. He said: “The kingdom of Uganda is a fairy-tale. You climb up ... and at the end there is a wonderful new world. The scenery is different, the vegetation is different, the climate is different, and, most of all, the people are different from anything elsewhere to be seen in the whole range of Africa ... I say: ‘Concentrate on Uganda’. For magnificence, for variety of form and colour, for profusion of brilliant life - bird, insect, reptile, and beast - for vast scale- Uganda is truly the pearl of Africa.” (Monitor Publications, 2nd October 2012)

metres (Mountain Rwenzori peak). Uganda's total surface area is 241,550.7 km² of which 199,807.4 km² is under land and 41,743.2 km² is under water and swamps (Uganda Bureau of Statistics, 2015:1; 2014a:1). The country is divided into four major geographical regions namely Central, North, East and West. It is further divided into 112 districts which are the largest political and administrative units (Ministry of Local Government, 2014). A map indicating Uganda's location is illustrated below.

3.1.2 Nature of the landscape

The National Environment Management Authority (NEMA)⁹ indicates that Uganda is a country of varying relief. This is attributed to the fact that the country lies on the great African plateau, at an average altitude of about 1200m above sea level. The great African plateau is gradually broken by the Great East African Rift valley. As such, Uganda's relief is comprised of highlands (mountains and hills), flat lands (plateau) and low lands (valleys). It is divided into four major relief divisions namely relief below 900m above sea level - about 9%; relief between 900-1500m above sea level - about 84%; relief between 1500-2000m above sea level - about 5%; and relief above 2000m above sea level - about 2% (NEMA, 2010: xiii). An earlier report by NEMA shows that "most of Uganda forms part of the interior plateau of the African continent. It is characterized by flat-topped hills in the central, western and eastern parts of the country. The rise of the plateau in the eastern and western parts of the country is represented by spectacular mountainous topography found along the borders. These include the Block Mountains of the Rwenzori and the Mufumbira volcanoes in the West; and Mt. Elgon, Mt. Moroto, Mt. Morungole, Mt. Timu and Mt. Kadam in the East. Mt. Otce in Moyo District is the highest point from the Uganda border up to Cairo, Egypt" (NEMA, 2004/05: 11).

The Rwenzori Mountains, also known as the "Mountains of the Moon", form about 80 kilometres of the western border between Uganda and Democratic Republic of Congo. They are Africa's third highest mountains and are a host block elevated between faults (UN-WWAP, 2006:2). According to the Uganda Bureau of Statistics, while mountain Mufumbira marks the southern border with Rwanda and Democratic Republic of Congo, the Elgon Mountains mark the border with Kenya. Furthermore, the Imatong Mountains mark the border with South Sudan while mountain Moroto marks the boundaries of Uganda in the North East (UBOS, 2014a:1).

3.1.3 Climate

"Uganda has a diverse climate influenced by the country's latitudinal position, altitude and topography" (Obua, Agea ang Ogwal, 2010:2). The climate is mainly tropical characterized by strong seasonality in rainfall. According to McSweeney, New and Lizcano, the climate of Uganda

⁹ In this chapter am aware of my over-reliance on the NEMA documents. This is because NEMA is the body charged with environmental issues in the country and has undertaken viable comprehensive studies on Uganda's environment especially through its state of environment reports.

is “shaped by the Inter-Tropical Convergence Zone (ITCZ)¹⁰ and air currents such as the southeast and northeast monsoons. There are two main seasons, namely the rainy and dry seasons” (2008:1). Temperatures range between 16⁰C-31⁰C with mean temperatures of 21⁰C. The mean temperatures show great variation depending on elevation and landscape. As such, some regions have higher or lower temperatures than others during different seasons. (NEMA, 2010: xv). The mean annual rainfall for the country is 1300mm but shows great spatial variability, averaging from as low as 100mm in the semi-arid parts of Karamoja in north Eastern Uganda to over 3000mm on the slopes of Mount Elgon. The country experiences double maxima of rainfall between March and May and September to November. However, in the drier parts of the country, there is a uni-modal distribution of rainfall characterized by one long dry spell followed by one long wet season (NEMA, 2010: xv; UN-WWAP, 2006:2).

3.1.4 Vegetation

Derek Pomeroy et al argue that “vegetation is the most practical way of describing the ecosystems of a country, because the different vegetation types are most practical and, more easily observable than most other organisms” (Pomeroy et al, 2002). The vegetation of Uganda is divided into heath and moorland (Montane vegetation) in the mountainous regions; equatorial (tropical) rainforests in the areas of high rainfall such as Mabira, Budongo, Bugoma, Kibale, Bwindi, and Maramagambo among others; savanna vegetation (mainly the savanna grasslands and woodlands); semi-desert vegetation (bush lands) especially in the dry areas such as the Karamoja region; as well as swamp vegetation. These types of vegetation grow naturally in the various parts of the country and their growth as well as survival is influenced by unique factors such as climatic, biotic, topographic and latitudinal factors (UBOS, 2013: 1).

3.1.5 Drainage

Uganda’s drainage is comprised of fresh water bodies such as lakes and rivers, as well as swamps. Uganda shares Lake Victoria (the second largest fresh water lake in the world) with Kenya and Tanzania. A number of rivers in southern Uganda flow into Lake Victoria. Lake Victoria waters then flow through the Owen Falls dam into the Victoria Nile and Lake Kyoga and finally into Lake

¹⁰The ITCZ is a permanent low-pressure feature lying in the equatorial trough where surface trade winds, laden with heat and moisture, converge to form a zone of increased convection, cloudiness, and precipitation (Waliser and Jiang, 2014:1).

Albert through the Albert Nile and White Nile in Sudan down to the Mediterranean Sea through Egypt (NEMA, 2010: xiv). Uganda's drainage pattern is a representation of earlier geological modifications such as river reversal, especially for the rivers that originally drained in the western part of Lake Victoria. As a result of crustal warping and wetlands such as swamps, some of the areas experience an impeded flow. The country also has a number of crater lakes especially in the western part. These lakes are a result of faulting connected with the western arm of the rift valley (NEMA, 2004/05: 11).

Together with the Democratic Republic of Congo (DRC), Uganda shares Lake Albert and Lake Edward. In the interior there are the lakes such as Bisina, Bunyonyi, Wamala, Nakivale, Katwe, Mburo, George and Kyoga. Uganda has three main rivers and they are; Aswa, Kagera and the Nile. There are many other rivers and streams such as Mpologoma, Kafu, Katonga, Semuliki, Mayanja, Tochi, Mubuku and Birira that flow into wetlands and lakes or form tributaries and small outlets into to the major rivers. Within the Great East African basin majorly around Lake Victoria and Lake Kyoga, Uganda has extensive swamps (UBOS, 2013:1).

3.1.6 Geology and soils

Old rocks from the pre-Cambrian era (3000-6000 million years ago) make up most of the Ugandan soils. However, younger rocks of sedimentary and volcanic origin from the cretaceous era (135 million years ago) are also in existence. While more than "two thirds of the country has poor ferralitic soils that have nearly lost all their mineral content through prolonged weathering, most of the country has richer ferruginous and highly productive volcanic soils" (UN-WWAP, 2006:2).

3.1.7 Population

Uganda is a multicultural nation. The people of Uganda are heterogeneous and their traditions vary significantly from one part of the country to another, with each part claiming a unique identity and aspirations, as manifested through distinct languages and dialects, oral traditions, creative arts and indigenous knowledge and skills (Cross Cultural Foundation of Uganda, 2010:2). The four major ethnic groups are Bantu, Nilotics, Nilo Hamites and the Hamites. Of these, the Bantu are the majority. Other inhabitants include Indians, as well as several African and non-African peoples. There are 37 local languages spoken as mother tongues in Uganda and English is the official language. Following the revival of the East African Community (EAC), use of Kiswahili (a

regional language in East Africa) is also being encouraged in Uganda (Aspermont media, 2012:3). According to the 2014 National census report, Uganda's population is 34.9 million people. The annual population growth rate in Uganda is rather high at 3.2%, compared with 2.6% for sub-Saharan Africa. As a result of the high fertility rate of 6.7 children per woman, the country's population has greatly increased in the past 40 years from 9.5 million in 1969 to 34.9 million in 2014 (UBOS, 2014b: 12). It is also important to note that many of the people in Uganda (about 85.1%) are based in rural areas. About 14.9% of the population is urban based (Kokole, 2014).

3.1.8 Political development

Uganda achieved its independence from the British Colonial Government on 9th October 1962. Immediately after independence, Uganda was governed by a monarchial President and an Executive Prime Minister (UNDP, 2013). It had a semblance of a federal system of government but this was later abolished in 1967 when the country became a Republic, a status it has maintained to date. The period between 1971 and 1979 was characterized by political violence and the country went through a severe institutional and economic collapse (Golooba-Mutebi, 2008:9). Kasozi notes that "there was a small revival in the early 1980s, however, political stability did not return quickly as the country went through a succession of five different governments, two of which were through military coup" (Kasozi, 1994:104). Since 1986, Uganda has had a stable government led by the National Resistance Movement (NRM) under the leadership of Yoweri Kaguta Museveni. Many government institutions have been recovered and the economy is improving steadily compared with the past. The NRM Government adopted a statist approach to economic recovery. Implementation of economic programs was based on government control and regulation of the economy, hinging on a belief in Marxist theory (Ssejaaka and Kyeyune, 2013:7).

Following a referendum in July 2005, the country embraced multiparty governance in 2006. According to the United Nations development Program, this paved the way for a number of political parties to stand for leadership at the different levels (UNDP, 2013). Since then, Uganda has had three general elections which were held in 2006, 2011 and the recent one in 2016. Uganda has a decentralized system of government. While the Central Government consists of Ministries and statutory bodies within the Ministries at national level, Local Governments are at the District, and extend further to the sub-counties, parishes and villages (Mongaby, 2013; UNDP, 2013). It is the Local Government that is directly nearer to the areas where the mining operations take place.

3.1.9 Economic integration with regional bodies

Uganda is a member of the East African Community (EAC)¹¹, the Intergovernmental Authority on Development (IGAD)¹² and the Common Market for East and Southern Africa (COMESA)¹³. The Ugandan economy has experienced continuous economic growth, with GDP growing at an average annual rate of 7.1% from 1992 to 2011. This strong economic performance has been strengthened by the country's robust investment and substantial export growth in which the gross fixed capital formation is steadily increasing on average by about 8.6% per year (UNDP, 2013).

3.1.10 Major economic activities

Uganda's economy relies principally on natural resources. It is largely dependent on agriculture with the sector accounting for 22.5% of GDP, 48% of exports, 68% of household livelihoods, and it provides a large proportion of the raw materials for industry. The majority of the population practices subsistence farming making the country self-sufficient in basic foodstuffs (NEMA, 2012:1). The main traditional cash crops of Uganda include coffee, tea, cotton and tobacco. Coffee forms a major source of revenue for the country as it dominates the exports in terms of value. Uganda grows about 16 chief crops. These include cereals (millet, maize, rice and sorghum,); root crops (Irish potatoes, sweet potatoes, and cassava); pulses (pigeon peas, beans, field peas and cow peas,); oil crops (sesame, soya beans and groundnuts), and plantains (UBOS, 2014:42). Other economic activities include manufacturing, fishing, mining and quarrying, construction, and tourism. These have enabled the country to diversify its economy.

Having presented the general background information on Uganda, the next section discusses the components of Uganda's natural environment.

¹¹ EAC is a regional intergovernmental organization together with Kenya, Tanzania, Rwanda and Burundi. "The EAC aims to widen and deepen cooperation among the partner states in political, economic and social fields for their mutual benefit" (EAC Secretariat, 2012).

¹² IGAD was initially formed to address drought and desertification issues among the member countries but with time, its mandate has been extended to also address regional security and political dialogue issues.

¹³ COMESA comprises of 19 countries in eastern and southern Africa. It is meant to boost cross-border activities including trade.

3.2 Components of Uganda's natural environment

This sub-section discusses the major components of Uganda's natural environment. These include biodiversity, land and forest resources, water resources, mineral resources and the atmosphere.

3.2.1 Biodiversity

Biodiversity is one of the major components of Uganda's environment. The Convention on Biological Diversity (CBD) defines biodiversity as the variability amongst living organisms from all sources including inter alia terrestrial, marine, aquatic systems and the ecological complexes of which they are part. It embraces all forms of life from plants and animals to micro-organisms and water, land and air in which they live and interact, all of which are crucial for the survival and sustenance of humanity (CBD, 1992:3). It is clear from the definition that biodiversity supports an extensive variety of ecosystems, goods and services that humans depend upon. For instance, provision of harvestable goods such as food, medicine, building materials and is also responsible for the regulation of natural processes such as carbon sequestration, soil formation and water purification. As such, the conservation and protection of biodiversity is of great importance.

The Uganda Wildlife Society confirms that Uganda has substantial biodiversity. According to NEMA, this is attributed to the location of Uganda in a region where seven of the African continent's distinctive biogeographic zones or phytochoria¹⁴ meet. These phytochoria are the Afromontane (RCE¹⁵), Guineo-Congolian/Sudania (RTZ¹⁶), Guineo-Congolian (RCE), Lake Victoria (RM¹⁷), Somalian-Masai (RCE) and the Sudanian (RCE). It hosts an exceptional number of species due to the wide variety of aquatic and terrestrial ecosystems, ranging from mountains, rainforest, deciduous bush lands and extensive freshwater resources (2010:21). NEMA notes that

¹⁴Phytochoria is defined "as large areas (c. 10,000 km² or more) with largely homogenous plant species composition, which is different from that of other phytochoria" (Balslev, 2005). In other words, it is a large area of plant distribution having similar or shared characteristics throughout. The phytochorological classification of Africa was done by Frank White in his study "*The Vegetation of Africa*" and offers a logical methodology through which to condense factual data about the vegetation of Africa. The framework is a ready source of data on species richness, endemism, as well as unique features of the flora, vegetation or biota of all the parts of Africa (Linder et al, 2005:230-231).

¹⁵RCE - Regional Centre of Endemism "is a region with a high concentration of species, which are largely endemic to this region. It contains at least 1000 endemic or near-endemic species" (Linder et al, 2005:230).

¹⁶RTZ – "Regional Transition Zone has fewer than 1000 endemic species, and makes up less than 50% of the flora" (Linder et al, 2005:230).

¹⁷RM - Regional Mosaic constitutes a mosaic of vegetation types, and an intermingling of otherwise distinct floras (Linder et al, 2005:230).

the country's variance in altitude from 600 metres above sea level in the Albertine Rift to 5,100 metres above sea level in the Rwenzoris also supports a variety of ecosystems (NEMA, 2008:113). As a result, Uganda's biological diversity ranks within the top ten countries of the world (Uganda Wildlife Society, 2010:21). However, even with such a rich biodiversity, NEMA notes that some elements of Uganda's biodiversity (especially those underground) are not well known (NEMA, 2006/07:155).

In order to protect the country's biodiversity, the Government of Uganda proposed and declared the conservation and protection of certain areas. The group of gazetted protected areas in Uganda is under the management of the Uganda Wildlife Authority (UWA) and the National Forest Authority (NFA). These institutions are charged with the responsibility of conserving a substantial percentage of biological diversity and remaining tropical forests in Uganda (Gou, 1996; GoU, 2003). On the whole, animals are found within Protected Areas (PAs) and also outside PAs. Protected areas for wildlife PAs are then categorized into Wildlife Reserves and National Parks. According to NEMA, the country has 10 Wildlife Sanctuaries, 13 Wildlife Reserves, 10 National Parks and five Community Wildlife Areas which are managed by the Uganda Wildlife Authority and constitute about 13% of the total area (NEMA, 2006/07:156).

The most biologically diverse environments are forests (including high altitude forests, medium altitude forests and woodlands; savannah composed mainly of thickets dominating the drier areas of the country; mountains namely high altitude moorland and heath; wetlands especially areas with impeded drainage, papyrus and grass swamps; and freshwater (aquatic) particularly the five major lakes, 160 minor lakes and extensive river systems (NEMA, 2010:105). With such ecosystems, Uganda harbours over "18,783 plant and animal species namely 1,259 species of trees and shrubs; 402 (39%) species of mammals; 1,300 (35%) species of butterflies; 115 species of hawk moth (large moths); 175 (14%) species of African reptiles; 119 (19%) species of African amphibians; 128 fish species; 96 species of silk moths and 1,061 species of birds (10.2 % of the globally recognized bird species)" (UNEP, NEMA and EPRC, 2008; NEMA/MoWE, 2009:3-4). NEMA further notes that Uganda has more species of primates than any other country of similar area on Earth. For instance, it is reported that Kibaale National Park alone, covering about 760 Km², has more than 12 species of primates (NEMA 2006/07:154-155).

The Albertine Rift in western Uganda is another significant area for global wildlife conservation. The region harbours more varieties of vertebrates than any other area in Africa. The Albertine Rift is a home to more than a half of Africa's bird species and approximately 40% of Africa's mammal species. A study conducted by Mittermeier et al., (2004) shows that "there are more endemic mammals, birds and amphibians found in the Rift than any other site in continental Africa". Due to the combination of high species endemism and rates of habitat destruction in the area, the Albertine Rift is recognized as one of the world's most endangered spaces (Nantamu, 2005). Studies conducted by Perpetua Ipulet and Ryvardeen in 2005 on fungi in some forested areas within the Albertine Rift show the first African records of 41 species including 13 species new to science and 16 African endemics, many of which are possibly believed to be the Albertine Rift endemics. Ipulet and Ryvardeen documented about 173 species of Polypore Fungi in the Albertine rift. This is approximately 16% of the overall species recognized from North America, Europe and Tropical Africa (Ipulet and Ryvardeen, 2005a; 2005b). With such a rich biodiversity, Uganda is categorized amongst the top ten most bio-diverse countries globally (UNEP, 2015).

Biodiversity is of high importance to the country. NEMA indicates that biodiversity offers a variety of services that enhance human health, livelihoods and economic growth. For example, biodiversity directly or indirectly improves the livelihoods of the communities through ensuring wildlife-based tourism as well as being a basis of food security (NEMA 2010:97). This points to the fact that biodiversity constitutes a capital asset with prospects for bringing about sustainable benefits. Therefore, maintaining biodiversity is a key element in the realization of sustainable development. However, as the 1992 United Nations Convention on Environment and Development convened in Rio de Janeiro noted¹⁸, Uganda's biodiversity is disappearing. This is attributed to anthropogenic activities. Among the activities responsible for biodiversity loss in Uganda is mining. For instance, with the discovery of economically viable oil deposits within the Albertine region, biodiversity and ecosystem loss has been observed. Issues of concern remain regarding some of the drilling sites. For example, the Kaiso Tonya well has a substantial number of unanswered questions regarding the impact of flaring, volumes of emissions, discharges and wastes (Johnson, 2007:33).

¹⁸At the Rio conference, UNCED noted that conserving biodiversity and protecting the overall biosphere, while at the same time substantially increasing their productivity yield, is one of civilization's greatest challenges (UNCED, 1992:50).

A study conducted by Derek Pomeroy et al indicates that using the Uganda Biodiversity Index (UBI)¹⁹ and Living Planet Index for Uganda (LPIU)²⁰, Uganda's overall loss of biodiversity is estimated at 20 percent or about 30 percent respectively in the past 36 years (Pomeroy et.al., 2006:30). The National Biodiversity Data Bank (NBDB) shows that using the UBI and LPIU, Uganda is certainly doing worse on the global scale, even though there were improvements after the 1990s, which may be attributed to increased conservation efforts. Similarly, an earlier study conducted by Moyini Yakobo et al. estimated the cost of biodiversity loss to be UGX 506 billion annually (Moyini et al, 2002:4). Another report by NEMA shows that "the annual contribution of biodiversity to Uganda's GDP is estimated to have decreased from US \$5.097 million in 2005 to US \$4.405 million in 2010" (NEMA, 2010:97). Moyini's study was undertaken thirteen years ago before the exploration and extraction of commercial oil had commenced. In addition, at that time, an airborne geophysical survey²¹ had not yet been undertaken. With such considerations, the figures for habitat loss may have risen while those of biodiversity's contribution to the economy may have decreased further. If such losses go unchecked, by the end of the century, the country may have very little or nothing to boast of in terms of biodiversity.

Another great loss of biodiversity is noted in Lake Victoria. Frans Witte et al note that the reduction of fish species especially in Lake Victoria is believed to be the biggest recorded biological diversity loss ever perpetrated by humanity on a natural environment (Witte et al., 1999). The loss of water biodiversity in Lake Victoria has been attributed to high nutrient inputs which have increased eutrophication levels in the lake. It is also attributed to algal biomass which has increased 5 times compared to more than 40 years ago making nearly half of the lake bottom waters to become anoxic for several months each year (Oguttu et al., 2008:89). These factors have adversely affected the lake's ecology. The National Biodiversity Data Bank indicates that another worrying situation is that of large mammals. Five mammal species are now extinct in the wild in Uganda. These

¹⁹UBI is arrived at by "combining the indices for species richness, species populations and habitat cover. Species richness is a reflection of the total number of species in Uganda; species populations refers to the weighted population data (numbers of individuals) for groups, e.g. of land birds or mammals, mostly made up of more than one species; and habitat cover is a reflection of the extent of forests and wetlands" (Loh et al, 2008:31).

²⁰LPIU means "unweighted data for all Ugandan vertebrate species (terrestrial and freshwater) with population data, for direct comparison with the global Living Planet Index" (Loh et al, 2008:3).

²¹ An airborne geophysical survey was carried out in 2006 with an objective of generating high quality, purpose oriented geophysical data, create new exploration targets and provide basic geological information to delineate high mineral potential areas. Following this survey, there was discovery of substantial mineral deposits of commercial value in over 80 percent of the country (DGSM, 2008).

include the Bongo, Derby's Eland, the Black Rhino, the White Rhino and Oryx. Those to watch include the Greater Kudu, the Lesser Kudu, the Roan Antelope, the Mountain Reedbuck and the Red-flanked Duiker (NBDB, 2012). Such loss of biodiversity has implications for development of the country, especially the tourism industry.

NEMA notes that the key causes of biodiversity loss in Uganda are exploitation and over-harvesting; over population and habitat alteration; infringement on natural ecosystems and land use changes; invasion by introduced species; and pollution/contamination; exploration of oil and gas in the Albertine graben; climate change, genetically modified organisms as well as armed conflict (NEMA, 2009:25-30; NEMA, 2006/07:159). These causes often result from human activities, among which are those undertaken in the name of development. For instance, the increasing demand for land for agriculture at all levels, minerals and energy development has led to degazetting land in protected areas for development activities (NEMA, 2010:110). There is no doubt that there is conflict between development and environmental conservation. Mining in particular has put pressure on Uganda's land resources, especially the forests and the general landscape, leading to their deterioration. It involves clearing forest cover in areas assumed to have mineral deposits. The cleared vegetation is lost forever while the animals, birds and insects in the mineral rich areas, if not accidentally killed, are forced to migrate to other areas.

Such threats lead to an extinction of biodiversity. Kenton Miller et al argue that:

Extinction is the most irreversible and tragic of all environmental calamities. With each plant and animal species that disappears, a precious part of creation is callously erased. Whereas many forms of environmental degradation can be reversed, the extinction of species is final (1985:338).

This is especially so because when species are extinct, they are gone forever and cannot be restored. Jennifer Hinton argues that since the natural environment is a key pillar of sustainable development, biologically significant and sensitive ecosystems ought to be protected in order to create diverse livelihoods, support strong economies, good health, vibrant culture and in many cases, a peaceful existence in the short and long-term (2011:139). Development is needed but even so, in pursuing development, biodiversity ought to be preserved. How then should development activities be carried out while minimizing biodiversity loss? This therefore calls for exercising maximum care while undertaking development projects.

3.2.2 Land and forest resources

The United Nations Conference on Environment and Development notes that land is a complex system which provides much of the basic capital and resources on which development is built. It satisfies primary human requirements for food, fiber and fuel, supplies many basic materials for industry and manufacturing, and provides space for human habitation and activities. Land also meets the needs of all other terrestrial species, be they wild or managed (UNCED, 1992).

Uganda's land area is 199,807.4 km² and it consists of a considerable natural resource endowment that supports many livelihoods with respective land-uses (UBOS, 2014a:1). As such, land-use is part and parcel of man's efforts to exploit land in search for better livelihoods. However, since land is a limited resource which cannot provide for the growing intensity of human activities as well as increasing population, there are increasing conflicts between humans and the environment. A study conducted by NEMA shows that both commercial agriculture and built-up areas are increasing in Uganda. The built-up area has almost doubled²² while that under commercial agriculture has increased by over 25 per cent (NEMA, 2008:137). This increasing demand causes strains and stresses on the land resource and if left unchecked, it could even lead to encroachment on marginal lands.

Eilu and Olanya note that the threat to Uganda's forests has mainly been from plantations of palm oil, sugarcane and tobacco as well as encroachment by local people with the support of politicians (Eilu and Olanya, 2008:10). Similarly, the NFA notes that the changing land-use in Uganda is fuelled by the growth in commercial activity which is evident in degazetting protected forests to provide land for commercial agriculture. For example, forests on Kalangala Island were cleared to give way for growing of palm trees for oil production. A study by the National Forestry Authority indicates that Kalangala had no commercial agriculture in 1990. By 2005, over 31,000 ha of land had been put under commercial agriculture (NFA, 2009). This land was originally occupied by forests and giving it up for palm oil plantations resulted in a number of adverse effects such as climate modification and biodiversity loss, among others.

²² NEMA indicates that the most dramatic built-up area growth has occurred in towns and cities especially Kampala, Mukono and Wakiso. The increment is also a warning for a higher demand for natural resources in general and food and energy in particular.

Forests loss was further manifested when a planted forest in Namanve area was given away for industrial development. In the 1990s' Namanve was covered by forests but it is currently occupied by industries. All the forests have been cleared to pave way for manufacturing industries. Furthermore, in 2007 part of the Mabira forest along the Kampala - Jinja highway was given away to Mehta Group to expand their sugar operations in the country. Many more cases of degazetted forest areas in Uganda have been reported in the media. The President of Uganda H.E Yoweri Kaguta Museveni has this to say about the giveaway of forested land to investors:

You must have been following the controversy surrounding our decision to give some forest land to the manufacturers. I have been involved in these land allocations. Why? It is on account of the urgent need for industrializing our very backward but rich country in terms of natural resources and raw materials. Our backwardness, at this stage, is on account of the absence of industries.... The problem of Africa is not lack of forests but lack of factories, hotels, real estate, and professional services. We are giving forest lands to investors because there is no free land. Otherwise, we shall lose opportunities which will be taken up by others. I converted Namanve forest into an industrial park. When it is finished, it will accommodate about 1,000 factories. Obstructing investors is a form of backwardness. I request you to support our move on these limited portions of our forest reserves that are not part of the core ecosystems (New Vision Archive, April 19th 2007).

The President's remark is an indication that the giveaway of forests is a deliberate move despite its environmental implications. In as much as degazetting forest land for commercial agriculture and other economic activities is seen as a step towards economic development through provision of jobs for the local people, foreign exchange earnings and increased revenue collections, it nevertheless has severe environmental implications. Some of these include large scale forest conversion; destruction of critical habitat for many endangered species; increased concentration of carbon dioxide in the atmosphere; and pollution which contribute to climate change. As such, the environmental impacts ought not to be over-looked when considering any development projects. Many people opposing the giveaway of forested lands to investors citing environmental implications have been considered "enemies of development who do not want Uganda to transition from backwardness to modernity".²³ Development is needed, however it becomes an issue of concern when it leads to destruction of the environment and adversely affects the quality of life of

²³This remark was made by the President of Uganda Yoweri Museveni in an article he wrote regarding the giveaway of Mabira forest land to Mehta group. His full article is archived with the New Vision Publishing and can be accessed on <http://www.newvision.co.ug/D/8/20/560792>.

both human and non-human beings. In pursuing development, consideration should be given not only to the economic dimension but also the social and environmental dimensions.

A study by the Ministry of Water and Environment shows that forest and woodland cover in Uganda has decreased over the years (MoWE, 2001). Of the 4.9 million hectares of forests and woodland in Uganda, 64% (1,265,471 ha) are found outside the permanent forest estate (PFE).²⁴ “The PFE is 1.9 million ha, of which 61% is managed by National Forestry Authority (NFA), 33.6% is managed by Uganda Wildlife Authority (UWA), 4.7 % is jointly managed by NFA and UWA while 0.3% by local governments” (Obua, Agea and Ogwal, 2010:2). Tropical High Forests (THF) cover 924,208 hectares (9,242.08 km²), forest plantations cover 35,066 hectares (350.60 km²) and woodlands cover 3,974,102 hectares (39,741.02 km²)²⁵. 30 percent of the total forest cover is in protected areas, namely forest reserves, national parks and wildlife reserves and 70 percent are found on private land. NEMA notes that whereas the National Forest Authority (NFA) oversees the central forest reserves, the forests on individual property can be over-exploited, degraded and changed to other uses. Meanwhile the forests in national parks are not accessed by the people for timber harvesting and provision of other forest products (NEMA, 2006/07:156).

The NFA estimates that 88,638 hectares of forest cover are lost every year due to agricultural expansion (NFA, 2010). It should be noted that this figure does not include forest loss as a result of other activities such as industrialization, mining and quarrying, settlement and road construction which are also predominant activities. The Food and Agriculture Organization (FAO) report indicates that Uganda’s reliance on and the increasing harvest of forest resources has placed a lot of stress on the natural vegetation and has therefore increased the rate of deforestation in the country. Another danger to Uganda’s development is the manner in which energy is consumed, especially for the forests outside the protected areas (FAO, 2005). While the total economic value of forests in Uganda is 593.24 billion shillings (equivalent to 5.2% of the GDP), it is most likely

²⁴ PFE refers “to the land set aside for forestry activities in perpetuity, managed by private land owners and regulated by local governments” (Obua, Agea and Ogwal, 2010:2).

²⁵ I am aware of the long duration between the time of my research and the time NFA undertook a study on Uganda’s forest cover. One would expect the country to have up to date data but this is not the case with Uganda. By the time of the research, the only available statistics from a viable source was undertaken in 2010. Nevertheless, the statistics are still significant. With the current commercial activity in the country such as mining, agriculture, and industry, more forest land is being lost to investors. This is especially clear from the President’s communication on why the government is giving forested land to investors.

to reduce. Over 30% of the tropical high forests in Uganda are now degraded with private forests shrinking more rapidly than forests managed by the government (Bush et al, 2012: 8).

Forest resources are essential for both development and preservation of the global environment. Mismanagement of forests is linked to the degradation of soil, water, loss of wildlife and biological diversity, pollution and global warming. In the context of environmentally sound and sustainable development, forests play a vital role in soil conservation, exchanges of gases and nutrients, regulation of the hydrological cycle, as well as maintenance of reservoirs for biodiversity (UNCED, 1992:49). A range of threatened and uncommon bird species are said to be forest specialists and are believed to be attached to a specific vegetation. Bennun, Dranzoa and Pomeroy's study conducted in 1996 showed that 187 of Uganda's bird species at that time were associated with a particular vegetation type (1996: 25). This implies that the clearance of particular forests will eventually lead to extinction of such bird species. This then calls for embracing more effective practices to promote ecologically and economically efficient management of the land resources.

3.2.3 Water resources

Water resources are important components of the environment that could significantly contribute to development. Across the globe, water has been acknowledged as crucial and a prerequisite for social and economic development as well as environmental diversity (Ashton et al, 2001: xxvii). The United Nations Conference on Environment and Development notes that fresh water is a finite resource, not only indispensable for the sustenance of life on earth but also of vital importance to all socio-economic sectors (UNCED, 1992:54). It is undoubtedly an important resource which we cannot live without. This is reiterated by Nick Middleton that

Since its earliest inception, human society has seen fresh water bodies as a vital resource and the entire ancient 'hydraulic civilizations' developed on river systems, notably the Tigris - Euphrates, the Nile and the Indus. Society today is no less reliant on this natural resource (Middleton, 1999:155).

Fresh water plays an integral role in the functioning and operations of all societies and environments. This is an indication that water is a key strategic resource whose quantity and quality ought not to be compromised.

Uganda is endowed with extensive water resources that cover about 16 percent of the country's total area (UNDP-UNEP, 2004:1) ranging from surface water to ground water resources. There are eight surface water catchment basins namely, Lake Kyoga, Lake Victoria, Kidepo valley, Albert Nile, Victoria Nile, River Aswa, Lake Albert and Lake Edward. These catchments differ in size. For example the catchment discharging into Lake Victoria covers an area of 59,858 km², while the Kidepo Basin in the north-eastern part of the country covers an area of 3,129 km². The yield from these basins, though small compared with the total Nile flow, dominates the water resources potential within the country (NEMA, 2010:71).

The constitution of the Republic of Uganda indirectly acknowledges the need for protecting water resources. For instance, Chapter Fifteen, Article 245 on the Environment states that “the State shall protect and preserve the environment from abuse, pollution and degradation” (GoU, 1995b). Although no particular mention is made of water resources in this constitutional provision, the fact that water is a key component of the environment definitely implies that the State must protect water resources and manage them in a way that ensures sustainable development. Uganda's water resources are generally classified into fresh water, ground water and wetlands. These are discussed in the next sub section.

3.2.3.1 Fresh water resources

Uganda has a number of fresh water resources, mainly lakes and rivers. The major fresh water bodies include Lakes George, Albert, Victoria, Kyoga, Edward as well as other smaller lakes spread across the country covering an area of 38,500km² in total (WRMD, 2004). The lakes are interconnected by a river system, resulting from river reversal and ponding (NEMA, 2008:92). In the north eastern part of the country, many of the water courses are seasonal (Nsubuga, Namutebi and Nsubuga-Ssenfuma, 2014:1299). Lake Victoria is the major hydrological feature in Uganda. It is Africa's largest as well as the world's second largest fresh water lake (Anyah and Ssemazzi, 2004:56). It is also a significant fresh water resource shared by the three East Africa countries (Uganda, Kenya and Tanzania) and has catchments draining into Burundi and Rwanda (NEMA, 2006/07:119).

Major rivers in Uganda include Kafu, the Nile, Katonga, Mpologoma, Ruizi and Achwa (UN-WWAP, 2006). The north-western slopes in Uganda flow into Lake Edward via the Ishasha,

Chiruruma, Nchwera and Nyamweru rivers, and also by numerous tributaries which enter the western flowing part of the Katonga River. The north-eastern part of the Virunga ranges on the other hand flows directly to Lake Victoria via a series of swampy lakes and streams pouring into Kibale River, which enters Lake Victoria through the swamps at Sango Bay (NEMA, 2008:92). The Ugandan slopes of the Ruwenzoris drain to the westward flowing section of the Katonga and thence to Lakes George and Edward, while the plateau immediately to the north of the Ruwenzoris drains to Lake Albert via the Muzizi River. The Ugandan slopes of Mt. Elgon and the central highlands along the Kenyan border drain via rivers with swampy valleys or seasonal floodplains to Lake Kyoga, while the north-eastern highlands and most of the northern plateau drain directly to the Bahr el Jebel in Sudan via the Achwa River (NEMA, 2008:92).

Besides the above mentioned five major lakes, the country also boasts of 160 small and minor lakes. Collectively, Uganda's water bodies comprise one of the biggest assemblages of diverse freshwater fish species in the world (NEMA/MoWE, 2009:9). A study by Arinaitwe, Pomeroy and Tushabe indicates that in Lake Victoria alone over 600 species of cichlid fish were found in the early 1990s, with as many as 102 species found in a single study of southern lake waters (Arinaitwe, Pomeroy and Tushabe, 2000). Besides fish, Uganda's freshwater ecosystems are also home for invertebrates and molluscs. This shows the country's rich aquatic biodiversity. However, a study by NEMA shows that much of the aquatic biodiversity is in danger of extinction due to habitat degradation and effect of the introduction of invasive species (NEMA/MoWE, 2009:10).

3.2.3.2 Ground water resources

Globally, ground water is considered the primary source of fresh water for drinking and irrigation. It supplies 75% of all safe sources of drinking water in sub-saharan Africa (Mileham et al, 2009:724). Besides the earlier mentioned fresh water resources, Uganda also has ground water resources. Of the total volume of water in Uganda 61% is from underground water sources accessed from springs, shallow wells and deep boreholes (Nsubuga, Namutebi and Nsubuga-Ssenfuma, 2014:1304). NEMA notes that Uganda's groundwater resources consist of "five aquifer systems. They include the gneiss complex which has a depth zone of 50-60 meters, the granite which has a depth zone of 50-60m, the Toro with 30-50m, Karagwe Ankole with 50-60m, and Bunyoro with 110-135m. Apart from the Toro where the system's static water level is much deeper, the rest of the aquifer systems are 8-15m deep" (NEMA, 2008:92). The occurrence of

aquifers in a number of regions around the country is “related to respective geological characteristics of the areas. Many productive aquifers are found in in-situ weathered bedrock, the regolith overlying the bedrock and in faults and fractures in the basement” (UN-WWAP, 2006:45). However, although underground water is a key source of water supply especially in the rural areas, a number of aquifers are limited in yield with a low recharge in certain parts of the country (Nsubuga, Namutebi and Nsubuga-Ssenfuma, 2014:1312).

3.2.3.3 Wetlands

Wetlands in Uganda are widespread and complex. They are categorized into lacustrine (those associated with lakes) and riverine (those associated with rivers). Almost “13 percent of the country, or approximately 29,000 km², is covered by wetlands (swamps), of which about one-third is permanently flooded” (NEMA, 2004:113). About “69 percent of the total area under wetlands have impeded drainage (20,392km²), while swamps constitute 30% (8,832km²) and swamp forests constitute 1 percent (365km²)” (Nsubuga, Namutebi and Nsubuga-Ssenfuma, 2014:1300). While in the southern and western parts of Uganda they form a “widespread low gradient drainage system in steep V-shaped valley bottoms with a permanent wetland core and relatively narrow seasonal wetland edges”, in northern Uganda they comprise wide flood plains. “In the east, they exist as a network of small, vegetated valley bottoms in a slightly undulating landscape” (NEMA, 2010:79). Uganda’s wetlands consist mostly of permanently flooded papyrus and grass swamps, swamp forests, upland bogs and areas of impeded drainage. The wetlands range in altitude from 1,134m at Lake Victoria to over 4,000m in the Rwenzori Mountains. “As a result of the vast surface area and the narrow river-like shape of many of the wetlands in Uganda, there is a very extensive wetland edge” (NEMA, 2008: 95).

The most valuable attribute of wetlands is “their capacity to store, filter, distribute and gradually release large quantities of Uganda’s fresh water stock” (NEMA, 2004:113). Uganda’s wetlands “are known to support 43 species of dragon flies (of which 8 are known to occur in Uganda only), 9 species of molluscs, 52 species of fish, 48 species of amphibians, 243 species of birds, 14 species of mammals, 19 species of reptiles, and 271 species of macrophytes”. In addition, eleven spots have been gazetted as Ramsar sites and they are being given special protection” (NEMA/MoWE, 2009:9). Besides “providing seasonal breeding and reproductive ground for various fish species including *Labeo* sp., *Barbus* sp., *Clarias* sp., and *Mormyrus* sp., Uganda’s wetlands also provide

habitats for feeding endangered fish species, a buffering capacity against pollution, flooding and siltation, and seasonal pasture as the water table recedes during the dry seasons. They also provide critical ecological services such as habitat for migratory birds” (NEMA, 2008:95). There is no doubt that wetlands are very important components of Uganda’s natural environment.

However, despite their usefulness, a lot of pressure is put on Uganda’s water resources. NEMA indicates that water resources in Uganda are susceptible to abuse and pollution given the fact that they are communally owned and used by everybody yet practically owned by none (NEMA, 2006/07:123). For instance, many wetlands in Uganda are undergoing rapid conversion to other land uses while others are being overharvested. The major forms of wetland conversion include sand and clay mining for making bricks (NEMA, 2004:116). “About 30 percent of the original wetland area has been converted to other uses. The rate of conversion varies and ranges from as high as 53.8 percent in the Lake Victoria drainage basin to as low as 14.3 percent in the Lake Albert drainage basin” (Wetlands Management Department, 2011). The depletion and degradation of the country’s water resources has been attributed to “the challenges of rapid population, increased urbanization and industrialization, uncontrolled environmental degradation and pollution” (UN-WWAP, 2006:38). All these point to the fact that the management of water resources in Uganda has not been effective. The poor management of water resources has implications not only for the environment but also on human health. It should be noted that water resources, however crucial, are also carriers of disease and pose serious threats to human health when polluted. Water resources are thus a fundamental aspect of the ecosystem, a natural resource as well as a social and an economic good whose quality ought not to be compromised.

3.2.4 Atmosphere

The atmosphere is another vital component of Uganda’s environment. NEMA notes that although the atmosphere provides important “life-supporting resources” that have an impact “development opportunities, livelihoods and human wellbeing”, it is poorly recognized. Human activities have over the years combined with natural phenomena to cause environmental changes to the atmospheric environment. These changes are most evident in the quality of air and changes in Uganda’s weather (NEMA, 2008:72). The changes in Uganda’s weather patterns also have severe implications for the country’s climate. For instance, an analysis of Uganda’s climate shows that the seasons are changing and becoming more unreliable. While the wetter areas are tending to

become wetter, droughts are also more frequent (EA/GEF/ UNEP, 2007). The onset and cessation of the rains are increasingly erratic and when the rain does come, it is heavier and more violent (NEMA, 2008:73).

A study by Oxfam shows that Uganda's minimum temperatures are steadily rising upward faster than the maximum temperatures at a rate of about 10⁰C. This is attributed to the changes and disruptions in the atmosphere (Oxfam, 2008). Such climatic variations and changes are responsible for the frequent and severe droughts in most parts of the country in recent years²⁶ (NEMA, 2008:73). NEMA further notes that Uganda's air pollution is a result of anthropogenic activities such as industrialization, the use of charcoal and firewood for energy, bush burning, and other municipal sources such as the open burning of waste (NEMA, 2008:75). However, although mining is not listed among the anthropogenic activities responsible for air pollution in Uganda, it should be noted that mining has the potential of contributing to atmospheric pollution through emissions of carbon dioxide from fossil fuel combustion and gas flaring.

The last National Green Gas Inventory carried out in 1996 shows that:

A total of 708.61 Giga-grams of CO₂ were emitted from a total carbon content of 195.07 Giga-grams. This excludes 105.5 Giga-grams of CO₂ which was an emission due to jet fuel; and emissions from bio-fuels. The total CO₂ emission from wood-fuel, charcoal, and from wood to charcoal were 11605.42 Giga-grams, 773.67 Giga-grams and 1384.64 Giga-grams, respectively. Smaller amounts of emissions from bagasse were estimated at about 76.28 Giga-grams. The energy sector is the major contributor of non-methane volatile organic compounds (NMVOCs), contributing 4.9956 Giga-grams out of the total 5.9876 Giga-grams of NMVOCs (NEMA, 2004:51-52).

This study assumes that the current concentration of greenhouse gases in the atmosphere in Uganda could be higher in volume. This assumption is based on the fact that the last national inventory was undertaken 19 years ago before most of the vegetation was cleared, before a number of industries were established, and above all before the commercial oil exploration and drilling in the country. Since then, Uganda has undergone noticeable economic changes.

²⁶ The researcher is aware that the study is dated. However, although the study was conducted 7 years ago, and showed that the climatic variations in Uganda were responsible for frequent and severe droughts in the country then, famine and drought are evident in many parts of the country today. So this study is still significant.

It is noted that greenhouse gas emissions arise during both downstream and upstream activities. Daniel Weisser notes that “GHG emissions arising during downstream activities are typically negligible. However, upstream GHG emissions between coal, gas and oil can be significant but vary mainly due to the different modes and processes involved in extraction, fuel transportation and fuel-preparation” (2007:1547). In Europe for instance, life cycle assessments indicate that “significant upstream emissions arise mainly at the stages of oil transport, refinery, exploration and extraction, which are in the range of 40-110 gCO₂eq/kWhe” (Weisser, 2007:1548). Another study by Dones et al (2005) shows that “on average upstream GHG emissions from oil in UCTE countries²⁷ are 12% of the cumulative emissions. Cumulative emissions lie roughly between 500-1200 gCO₂eq/kWhe”. These figures are indicative of the magnitude of greenhouse gas resulting from burning fossil fuels in the atmosphere- a major threat to the environment.

3.2.4 Mineral resources

Uganda has a range of mineral resources (both metallic and non-metallic) in significant amounts (Revenue Watch Institute, 2012). During the 2014 State of Nation address, His Excellency Kaguta Museveni²⁸ noted that some of the minerals in Uganda include iron-ore - more than 200 million metric tonnes of proven ore in Kabale and Kanungu areas; phosphates - 230 million metric tonnes of proven ore in Sigulu hills, Tororo; cement - more than 300 million tonnes of limestone in Karamoja areas in addition to the one in Hima; aluminium clays - more than 3 billion tonnes of ore in Makuru areas in Bugweri; copper - more than 9 million tonnes in Kilembe areas; cobalt - more than 5.5 million tonnes in Kisoro areas; wolfram - more than 800,000 tonnes, in some parts of Kabale; tin - more than 1 million tonnes in Ruhaama Ntungamo areas; gold - more than 8.2 million ounces in different parts of the country; vermiculite - more than 54.9 million tonnes in some parts of the country; columbite-tantalite (Coltan) 133 million tonnes; rock salt and brine - 22 million tonnes in Katwe; as well as uranium - in some parts of the country (Museveni, 2014:14). All these minerals point to the country’s rich resource base.

²⁷ UCTE stands for Union for the Coordination of the Transmission of Electricity.

²⁸ H.E Kaguta Museveni is the current president of Uganda

Having presented the major components of Uganda's environment as well as their current status, the next section discusses the environment crisis in the country examining the key environmental challenges as well as their causes and contributing factors.

3.3 The current environmental crisis in Uganda

The environmental crisis is a pressing modern challenge. It is not only a national problem, but rather a global problem. This section presents the environmental crisis in Uganda, particularly the key environmental challenges and the contributing factors to the crisis.

3.3.1 Features of/ and key environmental challenges in Uganda

The National Environmental Management Authority notes that Uganda is currently facing an unprecedented acceleration of environmental challenges, which include among others land degradation, deforestation, desertification, loss of biodiversity, land, air and water pollution, climate change, habitat destruction, poor garbage disposal and clearing away of wetlands. A discussion of some of these key environmental challenges is presented below.

3.3.1.1 Land degradation

“Land degradation refers to a decline in the capacity of the land to provide valuable goods and services (including environmental services), and may involve changes in vegetative cover or topographic features as well as physical, chemical or biological degradation of the soil” (Scherr and Yadav, 1996). Despite the usefulness of the land resource in terms of higher agricultural productivity, ecosystem stability, and climate resilience, land degradation remains a major threat to Uganda's land resource. A study by Martha Barungi et al shows that “Uganda is one of the countries with very high rates of land degradation” in Sub-Saharan Africa (Barungi et al, 2013:10). Another study by Noble Banadda's shows that 97% of Uganda's land area suffers from some form of human-induced land degradation (Banadda, 2010:3572) suggesting that human activities continue to affect the land negatively.

Studies show that “although land degradation in Uganda is widespread, it varies in magnitude from one part of the country to another depending on farming practices, population pressure, vulnerability of the soil to denudation and local relief” (Matagi 2002; Ministry of Agriculture Animal Industry and Fisheries, 2010). For instance, many of the farming practices in Uganda have

had serious negative effects on soil fertility. This is reiterated by Ephraim Nkonya et al that “the rate of soil fertility depletion in Uganda is among the highest in sub Saharan Africa. Soil fertility depletion therefore represents a substantial loss in Uganda’s natural capital, and reduces agricultural productivity as well as income” (Nkonya et al, 2005:2). Where there is low agricultural productivity, there is often food insecurity. This is evident in a number of areas in Uganda. Many cases of food insecurity have been reported by the media.

Land degradation has had and continues to have long term effects on the economy. This is evident in a study by Emerton and Muramira which reveals that the annual macro-economic cost of environmental degradation in Uganda is up to US\$169-457 million (Emerton and Muramira 1999:52). Similarly, Yakobo Moyini et al’s study estimated the cost of land degradation in the country as 4%-12% of the gross national income each year (Moyini et al, 2002:4). These statistics and many more available are indicative of the magnitude of the environmental crisis in Uganda. Studies further show that the worst affected areas by soil fertility depletion are the “highlands of Kapchorwa, Bukwo, Kween and Mbale in Eastern Uganda, and Kabale and Kisoro in Western Uganda” (Zake, Nkwiine and Magunda 1999; Olson and Berry, 2003). However, while this is true for the highland areas, land degradation is also evident in low lying areas of Uganda and is manifested in the form of soil erosion and changes in vegetation cover. While driving through the central region, one can clearly observe vast pieces of degraded land.

3.3.1.2 Level of soil erosion

Soil erosion is another serious environmental challenge in Uganda. This is reiterated by Nkonya et al that “soil erosion is the most serious and widespread form of land degradation in Uganda with estimated average annual soil losses of more than 30 tons per ha in the highlands” (2005:43). Soil erosion affects 60 to 90 percent of the highland areas (NEMA, 2010). The most affected highland areas are Kisoro, Bundibugyo, Kapchorwa and Mbale districts (Magunda and Tenywa, 1999). However, although highland areas are highly susceptible to erosion, even in relatively flat areas of Uganda soil erosion has occurred at high rates mainly through rill and sheet erosion. Zake et al argue that in the semi-arid areas of Uganda where fragile vegetation cover has been degraded by overstocking from nomadic grazing, sheet and rill erosion are severe. For example in Karamoja, Soroti, Katakwi, Mbarara, Rakai, and North Luwero. Zake et al., 1997 note that wind erosion is also evident in Kumi, Soroti, Katakwi, Kotido, and Moroto during the dry season because soils

remain exposed during prolonged dry months after the cultural practice of uncontrolled bush burning. On the whole, soil erosion in Uganda is estimated at above 5 tons per hectare per year (NEMA, 2010). Where there is soil erosion, there is low crop productivity. This is because with soil erosion, key nutrients found in the soil such as phosphorous, potassium and nitrogen are lost. This then implies that soil productivity has to be enhanced using artificial means such as inorganic fertilizers which are also hazardous to the environment.

Soil erosion in Uganda has contributed to siltation and eutrophication of water bodies. For instance, siltation and eutrophication are among the factors responsible for the “declining fish harvest from Lake Victoria is resulting” (Okwerede et al., 2005). Such erosion is costly to the country. The cost of soil erosion in form of soil nutrient loss in Uganda is approximately 625 million USD each year in Uganda (Bush et al, 2012:13). This is a colossal loss to the country. Given the fact that Uganda is a low developed country, such degradation costs could be invested in other sectors of the economy.

3.3.1.3 Deforestation

Another major challenge facing Uganda’s environment (especially the forest resources) is deforestation. Richard Spilsbury defines deforestation as the clearing of forests or woodlands to access resources such as timber and space for other activities, including farming (2012:6). Besides timber, resources such as fuel wood and charcoal are also by-products from forests. A study by NEMA and the Sustainable Development Centre indicates that:

“Forest degradation in Uganda has been on the increase since 1990. The deforestation rate in Uganda is very high (2.3 percent), well above world and sub-Saharan average (0.6 percent) with negative repercussions for biodiversity conservation, soil conservation, water and micro-climate regulation and agricultural productivity. Much of the deforestation has taken place on private land where 70 percent of forests and woodlands are located” (NEMA and SDC, 2005:13).

A study by International Research Group (IRG)²⁹ shows that the deforestation rate in Uganda is estimated to be 55,000 ha per year. About “25 million tons of wood are consumed annually in

²⁹ This study is dated because it was conducted in 2006. However, it is still relevant to the study because it is the only current data there is on the topic. Secondly, with the current decrease in forest cover resulting from human activities, the figures could have increased further.

Uganda, which translates to about 1.1 ton per capita per year. The majority of the wood (65 percent) is used as household firewood: 16 percent as charcoal while 14 percent as commercial and industrial firewood” (IRG, 2006:20). The 2013 Uganda Bureau of Statistics report on socio-economic indicators indicates an increase in value for consumption of charcoal and firewood from 32.3 billion in financial year 2005/06 to 409.1 billion in financial year 2009/10 (more than 10 times), while round wood production increased 1,728,000 tons (4.2%) to 42,889,000 tons in 2012 (UBOS, 2013:2). This is an indication that forest conservation in Uganda is increasingly being out-competed by alternative land use options.

The two major causes of deforestation in Uganda include conversion of forests into agriculture and grazing land due to population expansion and extensive pastoral systems as well as over-harvesting - mining of the forest resource for fuel, wood, timber and charcoal as a result of over reliance by mainly rural communities to sustain their livelihoods (Bush et al, 2012:10). Walking through many of the forests in Uganda, one is able to observe vast pieces of forest land cleared for crop growing. In some cases, there are small gardens planted in the middle of the forests. This is especially the case for public forests where security personnel are deployed to ensure that no trees are cut down. Before entering through these forests, the picture is of a thick forest but as one enters and goes further, the picture is completely different as people have gardens in the forests. Furthermore, driving along the major high-ways, sacks of charcoal and stacks of firewood are packed by the road-side ready for sale.

The deforestation of swamp forests for wood and other craft products is another challenge facing Uganda’s forest resources. The deforestation of swamp deforestation is evident “in the wetlands of Mukono and Mpigi districts and Sango Bay in Rakai District. Rattan and Phoenix palm are some of the raw materials harvested for making crafts” (NEMA, 2004:117). Many of the swamps in Uganda have been over harvested at rates exceeding their replenishment. This is observed when one walks along the swampy areas. Some swamps have been reclaimed for craft making and subsistence farming, especially growing of yams, sugar canes and rice. Crafts made from the raw materials provided by the swamps include mats, baskets, bags, chairs and tables and are usually displayed by the roadsides to attract clients. People are using swamps as a form of livelihood generation.

3.3.1.4 Declining water resources and wetlands

In addition to the mentioned environmental challenges, there are a number of challenges surrounding water resources and wetlands in Uganda which are escalating their decline. Nsubuga, Namutebi and Nsubuga-Ssenfuma argue that these challenges are worsened by changes in climate (Nsubuga, Namutebi and Nsubuga-Ssenfuma, 2014:1298). Climate change has substantially impacted the evaporation rates in the country. Jennifer Oslon notes that evaporation rates in Uganda are generally high and exceed precipitation in 90 per cent of the country. Such evaporation rates reduce runoff, groundwater recharge and dry season stream flow (Oslon, 2004). They have further led to changes in precipitation. Spatial and temporal variability in precipitation has resulted in floods, landslides and droughts (Nsubuga, Namutebi and Nsubuga-Ssenfuma, 2014:1298). Several episodes of floods and droughts have been experienced in Uganda especially in the Karamoja sub region, Teso sub region, and some areas in the central region.

Ecosystem change has greatly influenced the quality and quantity of water resources in Uganda because most of the water resources are closely linked to forests, grasslands and other ecosystems (Kaggwa, Hogan and Gowa, 2004:1). When vegetation cover is tampered with, many water points and sources are also affected. Furthermore, the pollution of water resources has implications on their quantity and quality. According to a report by the Uganda Wildlife Society (UWS), pollution arising from diffuse and point source pollution discharges alters the natural hydrology of catchment areas. There are reported cases of siltation of Uganda's rivers and lakes and loss of water catchment basins which have had a bearing on water quality and resource availability (UWS, 2010:31). A number of lakes are covered with water hyacinth. This is observed when one stands by the shores, or sails along the lakes. There is a green, viscous and odourous substance at the margins of some lakes in Uganda. According to UWS, this substance is observed on Lake Victoria and it is known as blue-green algae - eutrophication of the lake as a result of increasing organic pollutant discharges (UWS, 2010:33). Eutrophication has health implications, not only to human beings but also aquatic life.

The major stress on Uganda's water resources is attributed to the increasing population growth and inadequate "waste management practices of industries located near the water system" (NEMA, 2006/07:123). For instance, a report by the Ministry of Water and Environment shows that "49,500 tons of nitrogen and 5,700 tons of phosphorus are loaded into the lakes annually through non-point

sources from atmospheric deposition and river catchments” (MoWE-DWD, 2006; NEMA, 2008:95). Most industries in Uganda “have no pre-treatment facilities at their premises. As such, they do not meet national standards for discharging effluents into the receiving environment” (NEMA, 2006/07:123). This poses serious environmental hazards. One wonders how such industries are given operating licences when they do not comply with the environmental standards and regulations. Nsubuga, Namutebi and Nsubuga-Ssenfuma note that “current water management practices in Uganda are not robust enough to cope with the challenges and as such, have impacted the water resources and increased the water use requirements” (2014:1298). Sustainable water resource management is fundamental for national growth and development.

3.3.1.5 Loss of biodiversity

There are a number of issues that affect biodiversity and its conservation in Uganda today. The Uganda Wildlife Society notes that the reduction in forest estates, the continued wetland reclamation, acts such as bush burning and such other related human activities are ongoing at the peril of biodiversity. In addition, some permitted activities such as the spot hunting practiced in protected areas have no guiding legal foundations in Uganda, yet it impacts a sector that generates the highest foreign exchange (UWS, 2010:21). According to NEMA and SDC, “Uganda’s biodiversity richness has declined steeply from that of the 1960s. The decline in fish species is probably the most documented loss of biodiversity in Uganda. Indications are that up to 200 species originally endemic to Lake Victoria have disappeared” (NEMA and SDC, 2005:13). Pomeroy et al, note that the country is rapidly losing its biodiversity at “an estimated overall rate of loss of about 1% per year. Planned agricultural development, urgently needed to improve peoples’ lives, will further reduce the habitats of many species, whilst a wide range of human activities continue to degrade non-farmland areas, especially (but by no means only) outside protected areas” (Pomeroy et al, 2002).

While Uganda’s Protected Areas (PAs) are in the form of Forest Reserves and National Parks, Wildlife Reserves as well as Birds and Animal Sanctuaries, these PAs are not representative of all the key ecosystems in Uganda. It would be worthwhile to establish a PA system that represents all key ecosystems including aquatic resources, wetlands and montane ecosystems. In addition the biodiversity outside protected areas should be protected in order to retain a network of biologically diverse ecosystems

throughout Uganda that are linked and essential to the survival of existing protected areas (UWS, 2010:21).

A further study indicates that “woody biomass in all its forms continues to decline, together with all the biodiversity that depends upon trees, and biodiversity loss seems to be an almost-inevitable consequence of agricultural intensification” (Pomeroy and Tushabe, 2004). As long as there is continued conversion of forests land to other land use options, the rate of biodiversity loss will continue to escalate.

Furthermore, uncontrolled mining and drilling have been listed among the factors contributing to habitat conversion or destruction (NEMA, 2004:162). This is especially so with the forest resources where extraction for timber and other products has led to the alteration of the ecosystems as biodiverse habitats are destroyed and even converted into other land use options. In addition, habitat destruction in Uganda is also evident with water resources as a result of water pollution due to human activities.

3.3.1.6 Garbage and waste management

Indiscriminate dumping of garbage is one of the most visible environmental challenges in Uganda today. It is a high risk to both the environment and public health. Solid waste collection in Uganda is critical and has caused serious public outcry, especially in the urban areas (Nyakaana, 2009). The 2010 Sector Review Report by the Ministry of Water and Environment indicates that Uganda’s rapid urbanization and increasing population at a rate of 5.1% and 3.2% per annum respectively, is responsible for overcrowding, development of slums and informal settlements coupled with poor waste management practices (MoWE, 2010). Another report by UN-Habitat indicates that urban authorities are overwhelmed by the sheer volumes of garbage generated (UN-Habitat, 2010:25). The huge quantities of waste generated daily cannot be over-looked as key contributors to environmental degradation especially in Uganda’s urban centers.

A study conducted by Okot and Nyenje indicates that:

The national strategy for solid waste management is failing because environmental management is not fully mainstreamed into local development plans while at the same time budgetary allocations for waste management are low. Waste management receives less than 10 percent of urban council budgets compared to other policy areas (2011:541).

The irony is that on the one hand the government seems to be concerned about the state of environmental degradation and yet on the other hand, conservation of the environment is not mainstreamed into local government development plans and is therefore under-budgeted.

A report on solid waste disposal in Kampala reveals that “Kampala Capital City Authority -KCCA (the body charged with administration and planning for the city) is overwhelmed by the amount of solid waste generated in the city daily. Out of 1,200–1,500 tons of garbage generated per day, only 400-500 tons are collected giving a collection efficiency of only 40%” (WAU, 2011a:2). Yet even with designated garbage disposal centers, people still dump garbage indiscriminately by the roadside, in the trenches and drainage channels (WAU, 2011b:9). A walk through most urban centers in Uganda confirms the presence of garbage in form of plastics, food peelings, bottles and cans dumped in ungazetted areas. In addition, some people are seen throwing garbage and waste from moving vehicles on to the roads. Even where some people are next to the garbage bins, they choose to dump the garbage on the ground. Plastics and polythene bags are widely used in Uganda. While they are useful in the carrying of products, they are a great menace to the environment because they are often poorly disposed of. Plastics are usually disposed of in the drainage channels and have blocked the drains. This is especially so in the urban centres. Furthermore, some people choose to burn the plastics as a way of disposing them but this still poses environmental hazards. Burning plastics may create a perception of a “cleaner” environment. This is an indication of a lack of understanding about the impacts of poor waste disposal as well as ignorance and a lack of appreciation for a clean environment.

The National Environmental Management Authority of Uganda is trying to enforce a phased ban on the use of plastic bags. This ban is provided for in the 2009 Finance Act and it prohibits the local manufacture, importation, sale or use of bags and sacks of polymers of ethane and polythene (GoU, 2009b:3). However, there is still a strong resistance, especially from plastics manufacturers and recyclers. In an interview with *The East African*, a local newspaper, the Uganda Plastics and Recyclers Association (UMPRA) had this to say:

We are in a dilemma because on the one hand we have been told to invest in the recycling capacity and appeal for the amendment of the law to accommodate those efforts, and on the other hand, we now see NEMA ordering a ban without considering the fact that there is a process in progress

to harmonize the law with the reality on ground (The East African Monday 13th April, 2015).

This seems to point to a lack of collaboration between the different Government institutions. For instance, the Ministry of Trade and Industry that issues trading licences, and the Ministry of Water and Environment that is charged with ensuring that environmental standards are adhered to. On the one hand, laws on environment are enacted by the Government and on the other hand, the laws are violated by the same Government. Why in the first place did the Ministry of Trade and Industry have to issue operating licences to companies whose products are dangerous to the environment? This calls into question the credibility of Uganda's licensing bodies. The Ministry of Trade and Industry would have proposed alternative packaging such as paper bags. This would also be one of the ways of promoting the paper industry. Further still, a number of people are employed in the plastics industry. According to *The East African*, the plastics industry employs about 6000 people (The East African, Monday 13th April 2015). However the ban on the plastics means that these people will be left jobless. But at the same time, the health of environment should not be compromised because its effects are grave to both humans and non-human beings in the present as well as in the future.

It should be noted that while paper bags have been considered a better option to plastics bags for a long time, their production also greatly adversely affects the environment. In their study on Paper vs. Plastic, Rachel Decker and Anders Graff note:

Paper comes from trees, and the pulpwood tree industry is large. It begins with logging, where select trees are found, marked, and felled. After they're cut, roads are built into the forest on which the large machinery, used to load and transport the timber, can be moved. This process creates a tremendous scar in the forests natural habitat(s), for both plant and animal. It can take over a century for nature to recover from even a small logging operation. Addedly, if the small operation clears only 10 acres, many hundreds of acres surrounding are affected due to the extreme interplay/interdependency in nature. Heavy machinery needs a lot of fossil fuel to operate. Logs are "digested" with a limestone and sulphurous acid for eight hours. The steam and moisture is vented into the outside atmosphere, and the original wood becomes pulp. For every ton of pulp made it takes over three tons of wood, initially. The pulp is washed and bleached, both stages requiring thousands of gallons of clean water. After this, coloring is added to more water, and is then combined in a ratio of 1 part pulp to 400 parts water to finally make paper. The pulp/water "brew" is dumped onto a web of bronze wires, the water showers through, leaving

the pulp, which, in turn, is rolled into finished paper (Decker and Graff, 2013).

Therefore in the present era of environmental awakening, the question of use of paper bags or plastic bags is very critical. This is attributed to the fact that a number of emerging ethical issues surround the production of both paper and plastics not only from the economic and social standpoints but majorly from the environmental perspective.

3.3.1.7 Pollution

Pollution is basically defined “as the addition of any substance (solid, liquid, or gas) or any form of energy (such as heat, sound or radioactivity) to the environment at a rate faster than it can be dispersed, diluted, decomposed, recycled, or stored in some harmless form” (Nathanson, 1986). In other words it is the “contamination of the earth’s environment with materials that interfere with human health, the quality of life, or the natural functioning of ecosystems (both living organisms and their physical surroundings)”. Uganda’s National Environmental Act describes pollution as

Any direct or indirect alteration of the physical, thermal, chemical, biological or radioactive properties of any part of the environment by discharging, emitting or depositing wastes so as to affect any beneficial use adversely; to cause a condition which is hazardous or potentially hazardous to public health, safety or welfare; or to animals, birds, wildlife, fish or aquatic life, or to plants; or to cause a contravention of any condition, limitation or restriction which is subject to a license under the Act (GoU, 1995a).

Human activities such as industry, agriculture, mining transport and urbanization have greatly contributed to the pollution problem in Uganda, especially through water, soil and air pollution. According to the World 2014 Pocket Book, carbon dioxide emissions in Uganda were estimated at 3781/0.1 metric tons per capita in 2010 (UN, 2014:204). Serginho Roosblad argues that the effects of pollution on people in Uganda are becoming more visible. With rapid urbanization and economic growth come fears that these numbers will only rise in years to come (Roosblad, 2015). Gerald Sawula³⁰ notes that water pollution in Uganda (especially of Lake Victoria) “is a real crisis; the water has turned completely green with algae blooms swamping the whole area. The water has become thick from effluent that is being discharged directly into the lake, because the wetlands that used to filter it have all been destroyed by developers”. “As more algal blooms, phosphates,

³⁰ Sawula Gerald the Deputy Executive Director of NEMA was interviewed by the Reuters on the situation of Lake Victoria (Biryabarema, 2010).

nitrites, heavy metals and fecal matter are discharged into the lake, it is becoming harder and harder to clean the water” (Biryabarema, 2010).

Elias Biryabarema further argues that “it is very obvious that in future the National Water and Sewerage Corporation³¹ will not be able to treat water from Lake Victoria to a level safe enough for domestic consumption. Currently, pollution near the shore exceeds treatable levels. It is also noted that heavy concentrations of pollutants are killing certain fish species” (Biryabarema, 2010). It is unfortunate that waste continues to be discharged into the environment even though having a pretreatment facility for waste is one of the requirements before investors are granted operating licences. The death of particular fish species is a great loss to the country’s biodiversity.

Pollution in Uganda is also observed in form of air pollution. Studies have indicated that about 75 percent of air pollution in Uganda is due to transport related activities. This is attributed to the increasing incomes among the people that have enabled them to own private vehicles (Kiggundu, 2015:616). Between 1991 and 2008, the number of registered vehicles in Uganda increased from 53,000 to 450,000 (Bateebe, 2011:2). The motor vehicle fleet in Uganda is currently 800,000 (Kiggundu, 2015:616). Irene Bateebe notes that there are no regulations regarding the age of motor vehicles and that majority of imported vehicles in Uganda are not fitted with catalytic converters that reduce carbon emissions. In addition, diesel and petrol are among the highly consumed products in the country (Bateebe, 2011:23). Increased dependence on fossil fuels such as petrol and diesel implies an increase in pollution of the atmosphere.

3.3.1.8 Climate Change

The Intergovernmental Panel on Climate Change (IPCC) notes that scientists are no longer in doubt that the climate is changing. This is evident by the alteration in the weather patterns as well as the increasing heating of the earth (IPCC, 2007). McSweeney, New and Lizcano note that:

Although in East Africa average temperatures have increased by about 0.5⁰C over the last century, there is evidence that average temperatures in Uganda have increased by as much as 1.4⁰C at an average rate of 0.28⁰C per decade since the 1960s. Daily temperature observations show

³¹ National Water and Sewage Corporation is a government owned parastatal under decree No.34 of 1972 (NWSC, 1995: No.7).

significantly increasing trends in the frequency of hot days³², and much large increasing trends in the frequency of hot nights. The average number of ‘hot’ days per year in Uganda has increased by 74 (an additional 20.4% of days) between 1960 and 2003. The rate of increase is seen most strongly in JJA where the average number of hot JJA days has increased by 8.6 days per month (an additional 27.8% of JJA days) over this period. At the same time, the average number of ‘hot’ nights per year increased by 136 (an additional 37.4% of nights) between 1960 and 2003. The rate of increase is seen most strongly in JJA when the average number of hot JJA nights has increased by 14 days per month (an additional 44.3% of JJA nights) over this period (2008:1).

On the other hand, “the frequency of cold³³ days in Uganda has decreased significantly in all seasons except DJF”³⁴. It is observed that the occurrence of cold nights has speedily reduced in both the wet and dry seasons. “The average number of ‘cold’ days per year has decreased by 20 (5.5% of days) between 1960 and 2003. This rate of decrease is most rapid in SON³⁵ when the average number of cold SON days has decreased by 2.2 days per month (7.1% of SON days) over this period”. Furthermore, the duration of ‘cold’ nights annually has decreased by 42 (11.3% of days). McSweeney, New and Lizcano note that “this rate of decrease is most rapid in DJF where the average number of cold DJF nights has decreased by 3.4 nights per month (11.1% of DJF nights) over this period” (2008:1).

Observations of rainfall over Uganda show statistically significant decreasing trends in annual and MAM³⁶ rainfall. Annual rainfall has decreased at an average rate of 3.4mm per month (3.5%) per decade. MAM rainfalls have decreased by 6.0mm per month per decade (4.7%). The general circulation (GCM) model³⁷ projections for Uganda’s future climate indicate the mean annual temperature to increase by 1.0 to 3.1°C by the 2060s, and 1.4 to 4.9°C by the 2090s (McSweeney, New and Lizcano, 2008:2).

³² According to McSweeney, New and Lizcano, “hot’ day or ‘hot’ night is defined by the temperature exceeded on 10% of days or nights in current climate of that region and season”.

³³ According to McSweeney, New and Lizcano, ‘Cold’ days or ‘cold’ nights are defined as the temperature below which 10% of days or nights are recorded in current climate of that region or season.

³⁴ DJF refers to the months of December, January and February

³⁵ SON refers to the months of September, October and November

³⁶ MAM refers to the months of March, April and May

³⁷ GCM model is a type of climate model of the general circulation of a planetary atmosphere or ocean and based on the Navier–Stokes equations on a rotating sphere with thermodynamic terms for various energy sources (radiation, latent heat).

Since Uganda's economy is bound to its climate, the current climate change could adversely affect economic development. The changes in climate have had substantial consequences for human health, food security, water resources and natural resource management. McSweeney, New and Lizcano's study further observed that:

The range of projections by the 2090s under any one emissions scenario is 1.0-2.0°C. The projected rates of warming are greatest in the coolest season, JJAS³⁸ increasing by 1.5 to 5.4°C by the 2090s. All projections indicate increases in the frequency of days and nights that are considered 'hot' in the current climate. Annually, the projections indicate that 'hot' days will occur on 15-43% of days by the 2060s, and 18-73% of days by the 2090s while there will be decreases in the frequency of days and nights that are considered 'cold' in current climate. Projections of mean rainfall are broadly consistent in indicating increases in annual rainfall. The increases range from 0 to 15% in annual rainfall by the 2090s and affect the whole country throughout the year. The largest increases are seen in the rainy seasons, MAM and OND³⁹ (2008:2)

The projections show that "Uganda is highly vulnerable to climate change and variability due to the fact that its economy and the wellbeing of its people are tightly bound to climate. With agriculture being the backbone of the country's economy" (CIA, 2015), and the country relying on rain-fed agriculture for food security, economic growth, employment and foreign exchange earnings (Orindi and Eriksen, 2005), such changes could lead to low crop yields, famine and droughts. This is echoed further by Hepworth and Goulden who note that climate change in Uganda "is likely to mean increased food insecurity; shifts in the spread of diseases such as malaria; soil erosion and land degradation; flood damage to infrastructure and settlements; and shifts in the productivity of agricultural and natural resources" (Hepworth and Goulden, 2008:11).

In the recent past, the media has reported many cases of food insecurity as a result of famine, drought, floods and high rates of soil erosion in Uganda - all of which are induced by human activities. Such human-induced climate change "has the potential to halt or reverse the country's development trajectory. For instance, a rise in temperature from 1.4 to 4.9°C by the 2090s" McSweeney, New and Lizcano (2008:1) would have even greater disastrous consequences for Uganda. The 2008 CIA World Fact Book shows that "while Uganda's climate offers great potential for food production, prolonged and frequent droughts and floods in several regions of the country,

³⁸ JJAS refers to the months of June, July, August and September

³⁹ OND refers to the months of October, November and December

have led to food shortage” (CIA, 2008). This is an indication of the seriousness of the problem of climate change in the country. It also calls for drastic measures to curb the climate change problem.

It should be noted that the aforementioned environmental challenges in the country are a result of several factors. The next subsection presents the major causes and contributing factors to the current environmental crisis in the country.

3.3.2 Causes of the environmental crisis

Uganda’s environment is under threat. The discussion in the previous subsection shows that this threat is in the form of climate change, pollution, loss of biodiversity, deforestation, poor waste management and declining water resources. Many of these environmental challenges (as has been mentioned earlier) are human-induced. This subsection thus discusses the major causes and contributing factors to the environmental crisis in Uganda.

3.3.2.1 Poverty

As indicated by the Brundtland Commission, poverty affects efforts aimed at addressing the environmental crisis because those who are poor and hungry will very often resort to their immediate environment for survival. They will cut down trees, overgraze the land, cultivate on marginal lands, and in growing numbers, they will crowd congested cities (WCED, 1987:28). This could imply that in order to survive and make ends meet, the poor often resort to over exploitation of the natural environment. This is echoed further by Kantè who aptly noted that for the poor, nature offers a series of goods of inestimable value, on which they absolutely depend (Kantè, 2004).

In Uganda, the rate of poverty is very high. The 2012 Uganda Poverty Status report indicates that the poverty level in the country is at 24.5% (MoFPED, 2012). Additionally, the 2012 expenditure review for Uganda indicates that 67% of the population is either poor or highly vulnerable to poverty (MoGLSD, 2013). Given the fact that many poor people depend directly on land and other natural resources as a source of livelihood (UBOS, 2011), they tend to exploit the environment. However, in as much as it is true that poverty could contribute to the environmental crisis, this does not mean that it is only the poor who are entirely responsible. Self-interested and rich individuals contribute to the crisis at levels that could even be worse than those of the poor. For

instance, many of the established investments in former forested areas and wetlands are for the rich. Vegetation has been cut down to pave way for commercial agriculture, floriculture and industry.

3.3.2.2 Population growth

The 2014 national population census report shows Uganda's population at 34.9 million. The country's population has grown by 10.7 million from 24.2 million since the last census in 2002. At an average annual growth rate of 3.03 per cent, Uganda's population is projected to increase to 35.0 million in 2015 and to 47.4 million in 2025 (UBOS, 2014b:12). Obviously more people would mean a greater need for natural resources. Nicholas Middleton argues that as the population grows, more resources are used and more waste is generated (Middleton, 1999:18). Similarly, Nyakaana, Ssengendo and Lwasa note that “an increase in total population *ceteris paribus* leads to an increase in the demand for goods and services and in turn an increase in demand for environmental resources” (Nyakaana, Ssengendo and Lwasa, 2009:4). Some of the goods and services include food and land for settlement. With an increase in demand for food in a country such as Uganda where agriculture is not intensified, more land may be converted to crop growing. Secondly, some of the people could even resort to cultivating marginal lands, for example steep slopes, thereby exacerbating soil erosion and contributing further to the crisis.

Furthermore, in the search for land for settlement, there has been development of many informal and unplanned settlements, especially in Uganda's urban centres. Walking through Kampala district (the capital city of Uganda) one observes many informal settlements in the form of shanty houses and slums. These are associated with poor waste disposal and management, among other challenges, thereby escalating the environmental crisis in the country.

NEMA and the MoWE note that the principal cause of habitat conversion in Uganda is human population pressure. “The increased demand for agricultural land has led to land fragmentation, which is a generalized pattern observed across all of Uganda. Fragmentation eliminates connectivity between natural habitats and negatively impacts wildlife movements. This causes severe loss of habitat and biodiversity annually” (2009:26), and contributes to the environmental crisis in the country. Morrison Rwakabamba's study shows that by 2011, “the economic cost of forest loss amounted to over USD 819,178,400, a trend attributed to the rising population and

demand for arable land for cultivation” (Rwakabamba, 2014). This statistics is alarming for Uganda, a country known as the “pearl of Africa” because of its natural beauty. The natural beauty seems to be disappearing and if nothing is done to address the environmental challenges in the country, Uganda may have nothing to boast about in the future. When forests are cleared, biodiversity is affected and so is climate.

3.3.2.3 Urbanization

The 2014 National Census report shows that Uganda has 197 urban centres with an urban population of 6,426,013 people. Urbanization growth rate is estimated at 5.5% and is largely influenced by rural-urban migration (UBOS, 2014b:11). With population increase in the urban centres, there is “increased demand for employment, land for housing, social services and infrastructure that have stimulated spatial urban development and industrialization” (Nyakaana, Ssengendo and Lwasa, 2009:1). However, “although the current urban development can be applauded due to the increase in employment opportunities, housing stock, social services and expanding infrastructure; such development is occurring in a haphazard manner largely dominated by the urban informality in most of the sectors”. Vivian Matagi and Walter et al note that:

Urbanization has greatly contributed to the unsustainable utilization of natural resources within the metro area resulting in environmental degradation through solid waste accumulation, wetland encroachment and destruction, water pollution and land use and cover change, all reducing the ecological services from the natural environment of the urban areas (Matagi, 2002; Walter et al., 2005).

Some of the resulting impacts of the unsustainable use of Uganda’s urban environment include “poor sanitation, inadequate housing, poorly managed solid and human wastes, increased water pollution and reduction in ecological services” which have consequently exacerbated “vulnerability of the urban population and communities to natural disasters”. In order to meet the housing needs for the increasing urban population, “tenements locally known as “*mizigo*” have been constructed” (Nyakaana, Ssengendo and Lwasa, 2009:1). Many of these structures lack proper sanitation and drainage channels. In cases where the “*mizigo*” are erected in wetland areas, there is a high susceptibility to flooding.

As one moves through most of Uganda’s urban centres, one cannot fail to see garbage dumped on the streets, informal settlements established in wetlands, industrial smoke released into the

atmosphere, and crop cultivation in the wetlands. During heavy rains, flooding occurs in many of the urban centres (Ziervogel and Smit, 2009; Jha, Bloch and Lamond, 2012; 58). There have been several cases of floods, especially in Kampala city, reported by the media that have claimed lives and damaged property.

3.3.2.4 Government commitment to environmental conservation

Matagi notes that in addition to population growth and poverty, the other underlying cause for the environmental crisis in Uganda is poor government policies and low commitment (Matagi, 2002). Matagi's study is supported by Morrison Rwakabamba who argues that in Uganda there is "a glaring gap between the existence of environmental laws and policies on the one hand and the reality of implementation on the other". He notes that the "desire for modernization and rapid economic growth emphasized in Uganda's development programs such as the Poverty Eradication Action Plan (PEAP) and the Plan for Modernisation of Agriculture (PMA) has seen degazetting of forest areas, wetlands, and other water catchment areas previously recognized as gazette reserves" (2009:125). This has led to appropriation of reclaimed land for increased agricultural production with little public debate or prior consultations. Examples include Butamira and a central forest reserve on the Kalangala Islands, Sango Bay and Mabira forests. This reveals a discrepancy between development aims and environmental conservation (Rwakabamba, 2009:125). This seems to point to the fact that economic development is prioritized over the environment and social development. As long as this is the case, sustainable development may remain mere rhetoric because there cannot be genuine development amidst a "sick" environment.

The government's lack of commitment to conservation of the environment is also demonstrated through meagre budget provisions and allocations. Despite legislation and policy provisions on the environment, low budgetary allocations prompt one to question the commitment of the government towards environmental conservation. Rwakabamba notes that for instance,

MTEF ceilings for the 2006-2007 and 2007-2008 financial years, which originally stood at 34.45 billion and 32.38 billion shillings, were slashed to 25.6 billion shillings (2006-2007) and 24.47 billion shillings (2007-2008). Moreover, these figures are usually slashed further in the annual budget allocation process, and so finally, when money is released, the sums are often even less than allocated (2009:125).

The implication of this quotation is that without an adequate budget, efforts towards environment conservation will be futile. The compliance to environmental laws will be low as a result of lack of inadequate monitoring. As such the presence of environmental standards, regulations and laws will not have a positive impact. This is reiterated by Rwakabamba that:

It should be noted that the seriousness of and commitment to combating environmental degradation cannot be judged by the mere existence of laws and provisions in the Constitution or law books. It depends on action relating to implementation, financing and budgeting, providing personnel and human resources to do the job, and a comprehensive and sustainable effort geared toward sensitizing the general public, and convincing them to become custodians of their own environment (2009:125).

In this quotation Rwakabamba offers insights that can help the country move from theory to practice. Unless there is proper action evidenced through a shift from “paper” to “application”, conservation of the environment will always remain a desired ideal.

The National Environmental Management Authority (the body charged with environmental conservation and protection) is also faced with underfunding from the government and usually depends on donor aid to run its activities. Young notes that “a government’s primary duty is to protect its people and therefore environmental security is intrinsic to that duty. Yet Uganda’s own National Environmental Management Authority is underfunded and understaffed” (2013:15). The implication of this is that NEMA as an environmental watch dog cannot adequately undertake its roles and responsibilities in terms of environmental monitoring, conservation and protection because of staff and budget restraints. This points to the irony on the part of government because it seems to “dance to two different tunes” at the same time. On the one hand, the government claims to be involved in environmental conservation through enacting legislations. On the other hand, government is failing its own efforts through degazetting forest lands, and under budgeting environment issues, among other matters. This raises questions on the position of the government in as far as environmental conservation and protection is concerned. Government ought to show its commitment to protect the environment by not only enacting environmental legislation but also ensuring that these are enforced as well as providing sufficient funds to environmental conservation efforts by NEMA to enable it to effectively undertake its mandate of protecting the environment.

Similarly, Ben Kiromba Twinomugisha notes that:

There is minimal judicial capacity in the jurisdiction involving violations of the right to a clean and healthy environment. The hearing of such cases is restricted to the High Court and does not extend to magistrates courts and yet the High Court of Uganda has very few judges, who attend to many other urgent and competing interests (Twinomugisha, 2009:258).

This indicates that there could be a backlog of cases of environmental abuse when they are not attended to by the courts in a timely manner. It could even aggravate the problem further because as long as the offenders are not convicted and punished, they may continue with environmental abuse, and others may also engage in the different forms of environmental abuse.

Another study conducted by George Matovu reveals that:

There are challenges in the monitoring and enforcement of environmental laws in Uganda because the very institutions entrusted with the protection of the environment have in some cases not assisted the crusade for their conservation. The very institutions that are charged with this responsibility are the very ones who alienate these wetlands and even issue land titles (Matovu, 2006:10).

The fact that the very authorities entrusted with protecting the environment are the ones abusing their mandate seems to suggest that there is low or lack of political will towards environmental conservation.

More still, the Government has developed a number of strategies intended to encourage growth of the economy and stabilize the country from inflation. According to NEMA and SDC, these strategies include price controls and quotas, removal of subsidies, privatization and liberalization of trade as well as labour and foreign exchange. While these strategies are well intentioned, “they are not always environmentally benign” (NEMA and SDC, 2005:31). Environmental provisions in economic development policies are still lacking. The policies are geared towards economic interests with little or no mention of the environment. The implication of this is that such policies and strategies should be reviewed periodically in order to refine those that are found lacking, especially in terms of their impacts on the environment and livelihoods.

3.4 Conclusion

This chapter has presented an overview of Uganda's natural environment. It has given general background information on Uganda and further discussed the components of the country's natural environment, particularly biodiversity, water resources, land and forests resources, minerals, and the atmosphere, including their current status. The chapter has also examined the key environmental challenges in Uganda as well as the contributing factors to the environmental crisis. What is clear from this chapter is that Uganda's natural environment is deteriorating in quality and quantity. This is evident through the loss of biodiversity, declining quality of water resources, deforestation, land degradation, soil erosion, pollution, climate change and poor waste disposal, among other issues. The chapter has noted that these environmental challenges are primarily attributed to human activities; amongst which is mining - the focus of this study. The next chapter therefore discusses Uganda's mining sector.

CHAPTER FOUR: MINING AND THE INVESTMENT CODE IN UGANDA

4.0 Introduction

Chapter Three presented an overview of Uganda's natural environment. It discussed the causes of environmental crisis in the country and noted that much of the environmental crisis is human induced. Among the human activities contributing to this phenomenon is mining. The current chapter therefore discusses Uganda's mining sector as well as its investment code. It seeks to answer the first research question: What are the activities of investors in Uganda's mining sector? The chapter is divided into three major sections. The first section presents the nature of mining activities in Uganda. It discusses the history of mining in Uganda, as well as the country's mineral occurrences. The second section presents the mining regulatory framework in Uganda including the institutional, legal as well as the fiscal policy frameworks. The third section examines the country's investment code. It is then followed by a conclusion.

4.1 Mining activities in Uganda

According to the Oxford Advanced Learners Dictionary of Current English, mining refers to all the processes through which both metallic and non-metallic minerals are extracted from the earth crust/ ground (Hornby, 2005:935). It is an important and long standing human activity. This is reiterated by Nick Middleton who states that:

People have been using minerals from the earth crust since Homo habilis first began to fashion stone tools 2.5 million years ago. And today, more than ever, we are more dependent upon the extraction of minerals from the earth because virtually every material thing in modern society is either a direct mineral product or a result of processing with the aid of mineral derivatives (1999:237).

Middleton's statement illustrates the importance of mining from ancient times up to present times. The fact that every material thing is dependent on minerals means that we cannot do without them. Minerals form the basis for a number of other human activities such as agriculture and industry which are fundamental in the modern era. However, in as much as minerals are very important, their rapid use today could result into their imminent depletion. This sentiment was strongly expressed by "the Club of Rome" in 1972 (Meadows et al, 1972). The implication of this is that the exploitation of minerals should be done in such a way that there is a continuing supply of

minerals for society's needs. However, in as much this could ensure sustainable supply of minerals, I argue that the exploitation must be done in ways that are friendly to both the environment and the local people. This is because mineral resources are just one component of the natural environment, and if caution is not taken during their extraction, the other components may be affected.

In presenting an overview of mining activities in Uganda, it is important to know how mining has evolved in the country. This is therefore the point of discussion in the next subsection.

4.1.1 History of mining in Uganda

Mining in Uganda was started in ancient times by artisans. However, formal mineral exploration, mining and processing started during the colonial times with the arrival of the British explorers (Data, 2013:2; World Folio, 2014). Gabriel Data notes that the mining industry in Uganda was at its peak during the 1950s to the 1960s and was ranked among the country's top economic activities and foreign exchange earners (2013:2). Detailed below therefore is an explanation of the evolution of mining in Uganda.

Jobs⁴⁰ notes that the first prospecting concession made in Uganda dates back to 1902 when the East Africa Syndicate took up an area of 100 square miles around Butiaba in Bunyoro, for gold exploration. Between 1908 and 1920, various mineral concessions were secured by a number of companies to explore more minerals within different parts of the country. In 1925, cassiterite was discovered and in the same year, the petroleum potential of Uganda was documented by Wayland based on oil seepages which he mapped at that time (Jobs, 1967:3-4). Over the years, minerals such as tin, copper, nickel, tantalite, bismuth, columbite and gold were discovered in Southwestern Uganda. The establishment of a number of colonial gold and tin mines across Southwestern Uganda introduced mining to the local people in the area. These were mainly Bantu language speakers namely Bakiga, Batoro and the Banyankore, Batoro (Hinton, 2011a:79).

The 1939-1945 period was characterized by war (Second World War) and mining interests centred on wolfram, tantalite, columbite, mica and phosphates - all of which were required for the war

⁴⁰ In this section, I have 'over used' the work by A.L Jobs because he is the only author who has thoroughly written about the history of mining in Uganda. His work is archived with Department of Geological Survey and Mines in Entebbe (DGSM).

effort (Jobs, 1967:7). Jobs further notes that the need for these minerals was advertised in the local press and circularized. An East African committee was set up with the objective of utilizing the minerals resources of East Africa for the prosecution of the war. The production of tantalite/columbite ores showed an increase as a result of private and governmental prospecting and mining, with 11 tonnes exported in 1943. Mica was exported for the first time in 1944. In the same year rock phosphate production and exports also began. Beryl was also exported in 1944 and 1945. At the same time, tungsten exports increased on a notable scale to 80 tonnes in 1945. The war had the effect of increased production and export for tantalite and columbite ore, wolfram, mica, beryl and rock phosphates (Job, 1967:7).

During 1946, there was a general return to normal after the war years. The Ministry of Supply ceased purchasing metals because of the rise in prices. In 1947 and 1948 considerable road development was accomplished by the miners to ease the transportation of minerals. Some of the roads developed included the road to Nyamulilo mine, the road to Luhisa mine and the road to Ishasha flats - all in Kigezi district; the road to Lake George flats in Ankole district; reconditioning of the Kakkasi track and the Kilembe road for heavy vehicles in Toro district (Jobs, 1967:8). In 1950 wolfram exports reached an all-time high of 186 tonnes. A pilot mill was erected at Kilembe. The Korean war of 1950-1953 resulted in an increased demand for all kinds of minerals. Wolfram prices reached to record levels. In order to ease the foreign currency position in the United Kingdom, Uganda wolfram mines were persuaded to mechanize their production (Jobs, 1967:8).

In 1953 tantalite ores were fetching record prices with the USA buying them for stockpiling and paying 100% bonus (Jobs, 1967:9). In 1955 a Mines Training School was opened at Kilembe to train underground employees. In November 1956 the official opening of Kilembe mine, the Jinja smelter and the western railway extension took place and the first shipment of copper concentrate was dispatched to Jinja in August. 150 tonnes of copper were produced during this year (Jobs, 1967:10). The year 1957 was Kilembe mines' first full year of operation and it resulted in minerals becoming Uganda's third most valuable export. Hester and Boberg note that during this period, mining was "the third largest GDP contributor after coffee and cotton, contributing up to 35% of the country's foreign export earnings" (Hester and Boberg, 2006:68). At the same time, beryl production continued to an all-time record of 209 tonnes (Jobs, 1967:10; Lubega, 2015).

The following year (1960) saw an increase in the milling rate at Kilembe mines to 70,000 tonnes per month and copper exports were valued at £3.5 million. Beryl production reached a record of 419 tonnes. In the same year, Tororo Industrial Chemicals and Fertilizers Limited was formed to work the apatite deposits at Sukulu and process them into superphosphate. Simultaneously, wolfram production increased to 102 tonnes while the UK Atomic Energy Authority continued their investigations of beryl deposits. In 1962 copper production increased to 15,331 tonnes. An airborne survey was carried out over 12,000 square miles in parts of Ankole, Toro, Karamoja, Acholi and Lango and the areas concerned were closed to general prospecting (Job, 1967:10; Lubega, 2015). In 1963, Kilembe's production of 15,960 tonnes of copper was an all-time record. In 1964 copper production reached a new record of 17,972 tonnes. Due to the higher copper prices, the value almost doubled to £6.7 million from the previous year. Ground follow up in the areas flown by aerial survey was continued with Canadian Aid. For the year 1965, the value of mineral production was a record of £10.8 million with copper accounting for £8.7 million of the total. The production of apatite from Tororo increased to a record 16,123 tonnes and cement production increased from 71,524 in 1964 to 128,742 tonnes. Superphosphate production was doubled while with an increase in price, wolfram production reached 41 tons (Job, 1967:11; Lubega, 2015). Meanwhile, salt mining was undertaken at Lake Katwe north of Lake Edward. Salt mining at Lake Katwe reportedly began when the Kingdoms of Uganda were established in the 1700s and salt was a highly valuable traded commodity. By the 19th century, it held both economic and political significance to the Kingdoms of Toro and Bunyoro (Connah, 1990; NEMA, 2009:11).

Following the wide prevalence of political instability and conflict, especially during Idi Amin's rule in the 1970s, Uganda's formal mining industry collapsed. As a result, there was retrenchment of mine workers. Most foreign expatriates had to leave the country (especially those operating on the copper mine in Kilembe), and this adversely affected the mining industry in Uganda (World Folio, 2014). Dispersion of the unemployed miners stimulated unlicensed small scale mining in the country (Hinton, 2005:25). While the 1964 Mining Act prohibited gold mining in Uganda, the people continued to undertake illegal gold mining. According to a UNEP report, "widespread extralegal gold mining continued until 1986, when the National Resistance Movement (NRM) came to power and President Yoweri Museveni made licensing of gold mining possible by presidential decree" (UNEP, 2012:4). The political stability in the country from the mid-1980s

necessitated the discovery of gold deposits. Hinton notes that these discoveries were made by artisanal miners (2005:52).

Generally, the period after 1986 saw the revival of the mining industry in Uganda. At the turn of the century, the government sought to modernize its mining industry by creating a more favorable investment climate with a streamlined bureaucracy, transparent allocation of licenses, and heightened use of geologic information (World Bank, 2013). The “mining and quarrying industry grew at a rate of about 11% per annum” (Tuhumwire, 2002:19). In 2004, Uganda had only 200 exploration and mining licenses but currently there are over 870 exploration and mining licenses (World Folio, 2014). Together with the French Government (1989 -1990) and UNDP (1992 - 1996), the government of Uganda undertook mineral investments in several parts of the country. A number of mineral potentials were assessed and they led to the “discovery of mineral targets that have been subsequently developed for mining and/or processing” (Tuhumwire, 2002:19). For instance,

Uganda's production of vermiculite accounts for one percent of worldwide production and is an ongoing source of revenue. The country has sufficient reserves to continue its 2007 production level of 3,500 metric tonnes for another 100 years. The mining sector grew by 14 percent from 2006 to 2007, compared to eight percent growth from 2005 to 2006. An increase in construction activity in recent years has helped to spur this growth. The re-discovery of oil in the Albertine graben which is about 500 km long, 45 km wide... is estimated to be Sub-Saharan Africa's biggest onshore oil discovery in 20 years (NRGI, 2012).

The oil in the Albertine graben was “rediscovered in blocks that were jointly licensed to the Anglo-Canadian company Heritage Oil and the Anglo-Irish company, Tullow Oil plc. In the first half of 2010, Heritage sold their stake to Tullow Oil for US\$ 1.5 billion, after which Tullow Oil brought in investments from larger partners. Hence Tullow Oil farmed down two-thirds of its oil interests to Total SA (French), operating in Uganda as Total Exploration and Production - Total E&P; and China National Offshore Oil Corporation- CNOOC” (Majale, 2014:7).

Having presented the history of mining in Uganda, the next subsection details the mineral resources of Uganda.

4.1.2 Mineral occurrences in Uganda

Uganda is located “within the African plate, a continental crust that contains Archaean cratons that date several million years” (NEMA, 2010: xiii). The geology of Uganda is believed to consist predominantly of Archaean granulites and gneisses, as well as meta-sedimentary rocks of Proterozoic age and “is dominated by crystalline Basement Complex rocks of Pre-cambrian age that underlie over 90% of the country” (Nyende, et al 2014:164). As a result, the geologic setting of Uganda hosts a range of mineral resources. According to the Department of Geological Survey and Mines (DGSM), the country’s geology, endowed with a wide variety of mineral deposits, is grouped in major tectonic-thermal domains, namely Archaean basement (>2500Ma)⁴¹; Paleoproterozoic Fold Belts (2500-1600Ma⁴²); Mesoproterozoic rocks (1600-900Ma); Neoproterozoic rocks (900-570Ma); and Cenozoic rocks (66Ma to recent) (GoU, 2000:9). This subsection presents each of the major domains indicating the particular regions within the country as well as the various mineral occurrences therein.

4.1.2.1 Archaean basement (>2500Ma)

This area is comprised of granitoids. It mainly covers regions within central Uganda (the Lake Victoria terrane in South East Uganda and the northern extension of the Tanzanian Craton to central Uganda) and northern Uganda (North Uganda terrane and the West Nile block in North West Uganda (the eastern extension of the Bomu-Kibalian Shield of Congo). According to Hinde, “the meta-volcanic and sedimentary rocks of the Lake Victoria terrane in SE Uganda form the Nyanzian super-group. It includes a gold-bearing greenstone belt, which is part of the famous Lake Victoria gold field of northern Tanzania and western Kenya. Gold mineralization is confined to quartz veins within the mafic meta-volcanic rocks, within banded iron formations⁴³ (BIF) or in the rocks adjacent to the BIF units” (Hinde, 2007:3). Besides gold, there are a number of minerals found within this location including “industrial minerals such as talc, asbestos, kyanite, graphite, garnet, kaolin, feldspar and clay as well as rocks for aggregates”

⁴¹ >2500Ma implies more than two thousand five hundred million years ago

⁴² Ma stands for a million years

⁴³ Banded-iron formations are a distinctive type of marine deposit characterized by repeated layers of iron-oxide alternating with silica-rich layers and typically found in Precambrian sedimentary or volcano-genic rocks (Katsuta, et al 2012:457).

4.1.2.2 Paleoproterozoic Fold Belts (2500-1600Ma)

These mainly form the extensive Buganda Group (formerly known as Buganda-Toro System), which is composed of argillaceous rocks together with quartzites. An extensive unit of well-preserved pillow lavas indicates underwater volcanic activity within these deposits. According to Tumuhirwe (2002)

The Group stretches from the southwest through the Rwenzori Mountains, swinging eastward to the northern side of Lake Victoria. In some areas in the central and southern segments within this belt, the rocks have been metamorphosed to a higher degree reaching the amphibolite facies. This system is host to gold, base metals such as copper, cobalt, nickel, lead and columbite-tantalite and tungsten. Today, some formal small-scale gold mining takes place at Kisita and Kamalenge. Most of gold production is, however, by the informal sector in the Mubende- Kiboga region from quartz stringers within schists and saprolite. It also hosts copper occurrences at Kilembe. Columbite-tantalite occurs in pegmatites at Lunya in Mukono district, and tungsten deposits of quartz vein type occur closely associated with granitoid intrusions at Kyasampawo in the Mubende district.

4.1.2.3 Mesoproterozoic rocks (1600-900Ma)

These comprise mostly the Akanyaru-Ankole Supergroup (predominantly corresponding to units of the former Karagwe-Ankolean System). It is part of the “Kibaran Belt, which extends from the southwest of the country for over 2,000km to Katanga in southern Democratic Republic of the Congo. The rocks resemble those of the Buganda Group but are usually less metamorphosed. Intrusive porphyritic granite bodies within the cores of anticlines are a common feature. The belt is a major host of gold, tin, tungsten, beryllium, lithium, niobium, tantalum, bismuth and iron ore” (Hinde, 2007:3).

4.1.2.4 Neoproterozoic rocks (900-570Ma)

This category consists of “rocks from Archean to upper Proterozoic which were subjected to events of the Mozambique orogenesis. The group is found in the northeast of the country in Karamoja region and consists of acid and basic flaggy gneisses, quartzites and marbles. A unique feature of this group is the occurrence of chromite-rich ‘pods’ which represent fragments of an ophiolite suite of rocks. The group also hosts gold, nickel, copper and gemstones” (Hinde, 2007:3). Potential for platinum-group metals (platinum, palladium and rhodium) exists in areas with ultramafic rocks.

Nakiloro chromite rocks are indicative of this potential in Karamoja region. Small diamonds and indicator minerals were discovered in the southern Karamoja region, although no economic deposits have been identified. The West Karamoja Group is located west of the Karasuk Super group. It contains a large proportion of granulites intruded by charnockitic rocks. Hinton et al indicate that about fifty minerals of commercial value as well as precious stones have been recorded within Karamoja region alone, some of which include gold, marble, limestone, uranium, graphite, gypsum, iron, wolfram, nickel, copper, cobalt, lithium and tin (Hinton, et al 2011:14). Neoproterozoic basal tillites, mudstones and arkoses occur in a crescent shaped belt, initially parallel to the eastern side of the Lake Albert Rift and eastwards turning into an east-west direction along the northern shores of Lake Kyoga. Some tillites can be used as construction material and at Nyaituma in Hoima district these rocks contain hematite (Tuhumwire, 2002).

4.1.2.5 Cenozoic rocks (66Ma to recent)

These are represented by Neogene Carbonatite Complexes and volcanic rocks in eastern Uganda and Neogene to Quaternary volcanics in the southwest. The “carbonatite complexes are the feeders of eroded remnants of volcanoes and host limestone (carbonatite-sövite), apatite, pyrochlore, vermiculite, iron, titanium, vanadium, zircon, baddeleyite, uranium, thorium and traces of copper. Vermiculite at Namekara, limestone at Tororo and phosphate at Sukulu are currently the most important deposits”. Hinde further notes that topnotch deposits of phosphate are located at Sukulu. Sukulu is one of the seven carbonatite ring complexes in Uganda and has prospects of more minerals such as vermiculite, base metals, titanium, pyrochlore and rare earth elements (Hinde, 2007:3). In study conducted by Tumuhirwe (2002), he observed that:

A large part of Central and Northern Uganda remains geologically little known due to its thick soil and vegetation cover that makes conventional geological mapping difficult and the mineral potential of this region is yet to be evaluated. Magnetite associated with carbonatite complexes occur in Bukusu at Nakhupa, Nangalwe, Surumbusa and Namekara in the Manafwa district; Sukulu in the Tororo district; Napak in the Moroto district and Toror in the Kotido district. At Sukulu, magnetite occurs in residual soils with apatite (phosphate), constituting an estimated resource of 45Mt averaging 62% Fe, 2.6% P₂O₅ and 0.9% TiO₂. Within Bukusu, an estimated resource of 23Mt has been identified at the Nakhupa, Nangalwe and Surumbusa sites, while Namekhara contains an estimated resource of 18Mt with 13% TiO₂. The eastern volcanics comprise generally soda-rich agglomerates, lavas and tuffs extruded by central volcanoes of the Moroto,

Kadam and Elgon Mountains. They are of Miocene age and thus older than volcanic rocks of western Uganda.

Volcanism in western Uganda was confined from the late Pleistocene to Holocene and the volcanics are potash-rich in contrast to the soda-rich rocks of the east. In the west, the volcanic rocks form the prominent cones of Mufumbira Mountains, which is part of the larger Virunga volcanic field across the borders of Uganda, DR Congo and Rwanda. Volcanism is further characterized by calcareous tuffs emitted after the explosion of craters especially in Bunyaruguru, Lake George and Fort Portal. Neogene sediments are also said to happen in the the Western Rift Valley area where they attain at least 4,000m of thickness. The Albertine Rift Valley deposits host minerals such as clay (bentonite and kaolin), gypsum, limestone, gravel, diatomite and evaporites namely salts. Most significant, however, is the recent discovery of oil and gas in commercial quantities (Hinde, 2007:3).

According to the Revenue Watch Institute report, Uganda's extractive industry “is currently focused on commercial mining of cobalt, gold, copper, iron ore, tungsten, steel, tin and other industrial minerals such as cement, diamond, salt and vermiculite⁴⁴, primarily in the southwestern and southeastern parts of the country” (Revenue Watch Institute, 2012). Besides the mentioned minerals, oil and gas is another important resource and its rediscovery has brought about several investors in the mining sector. Sketches showing Uganda’s tectonic dynamics, major mineral occurrences and oil/ explorations and discoveries are attached in the appendix.

With the above overview of the major mineral occurrences in Uganda, it is important to understand the major actors involved in the country’s mineral sector. The next subsection therefore presents the major investors in Uganda’s mining sector.

4.1.3 Major actors in Uganda’s mining industry

Uganda’s minerals sector is comprised of three categories of actors whose activities have had great impact on the country’s development and environment. These include foreign exploration companies, local and foreign small scale investors, and artisanal community miners as discussed below.

⁴⁴ The country has sufficient reserves of vermiculite to continue its 2007 production level of 3,500 metric tons for another 100 years (Revenue Watch Institute, 2012).

4.1.3.1 Large Scale Foreign Exploration Companies

Large licenses are held by a few international exploration companies. Many of these are in oil and petroleum exploration. They include Total E & P Uganda, China National Offshore Oil Corporation (CNOOC) Uganda Ltd, Tullow Uganda Operations Pty Ltd, Tower Resources, and Dominion (CAFORD and TROCAIRE 2012:5). In addition to the oil sector, other large license holders in Uganda's mineral sector are Tororo Cement Limited, Hima Cement Limited and DAO for limestone and cement mining, MFC Industrial Ltd for cobalt mining, Starfield Metal Limited for tin mining, and Krone Uganda Limited for Tungsten (Yager and Newman, 2014).

4.1.3.2 Small Scale Investors

Another category of investors in Uganda's mining sector are small scale investors. Jennipher Hinton⁴⁵ notes that while several small scale investors have intentions to establish or scale-up small mining operations; a significant proportion of others are mainly interested in speculative license trading, attracting foreign joint venture partners or buying from artisanal miners active on their sites (2009:144). The small scale investors in Uganda's mining industry are categorized into micro enterprises and small enterprises.

According to Hinton, micro-enterprises comprise approximately 8 percent of the workforce and consist of teams of 6-10 mostly male miners who work together regularly to mine mainly alluvial and hard rock metallic miners (gold, cassiterite, coltan, wolfram) in East, Northeast, West and Southwest Uganda. Micro-enterprise miners are also found in clay and sand production throughout Central Uganda. Although somewhat migratory, movement is typically only within a district and relationships with local government and communities are usually reasonably well-established (2011a:77).

Small enterprises on the other hand usually consist of small groups of 6-20 miners working at the same site, usually on the location license held by a Kampala-based "boss" or owner who also acts as a buyer and supplier of basic tools. Although licenses are often held, no formal labour agreements exist and miners are paid based on production at a negotiated price (Hinton, 2011a:78).

⁴⁵ In my study, I am aware of the overuse of Jennipher Hinton. I am using his work because he has undertaken and published a number of research articles and reports on mining in Uganda. He has undertaken some of the studies independently and also collaborated with other researchers.

Most of the small enterprises are involved in production of metallic commodities (gold, cassiterite, coltan, wolfram) especially in Western and Southwestern Uganda. Hinton further notes that while the tools used may have a slight improvement over the crudest of methods employed by some community miners (for example manually crushing rocks with harder rocks or pieces of iron), there is generally little difference in technology between small enterprises, micro-enterprises and community artisanal miners (2011a:78).

There are also small companies that hold mining leases and, although they are somewhat mechanized for example with crushers, mills and bulldozers, reliance on manual labour particularly in the extraction of minerals is still typically high. Workforces of 30-50 occasionally have labour agreements with the company rather than paid-by-production set-ups (Hinton, 2011a:78).

4.1.3.3 Artisanal community miners

While Uganda's mining industry has of a few large-scale investors and several small scale investors, there are over 200,000 artisanal miners (both men and women) extracting a wide range of minerals including gold, tin, wolfram, coltan, salt, limestone, marble, stone aggregate, sand, clay, kaolin and gypsum using the most rudimentary of methods and tools such as picks, hammers and shovels (UNEP, 2012:6; TACC, 2009:2). According to Jennipher Hinton, artisanal community miners in Uganda are unlicensed and usually work individually or in small (often family) groups near or in established communities where they reside; and often mine as a compliment to seasonal farming activities (2011a:77). Artisanal miners' "activities are predominantly informally organized, disorganized, un-mechanized and often characterized by hazardous working conditions, lack of planning and issues related to child labour, poor health conditions and gender inequalities" (Hinton et al, 2011:9). This could be attributed to inadequate skills, lack of financial resources and ignorance about the health implications of mining, among other factors.

On the whole, all of the above mentioned actors (whether large or small) have played a substantial role in boosting Uganda's mining industry. It must be noted that in their exploitation of the mineral resources, the investors (especially those engaged in formal mining) are regulated and guided by a framework. This regulatory framework is presented in the next subsection.

4.2 Uganda’s mining regulatory framework

The mining regulatory framework in Uganda mainly comprises of institutions charged with monitoring and controlling mineral exploitation, mining laws and fiscal policies. These are presented in the following subsection.

4.2.1 Institutional framework

The vision for Uganda’s mineral sector is:

The new dawn in mining: to attract investment in, build capacity for acquisition and utilization of geo-data and increase mineral production for social and economic development of Uganda. The goal is to develop the mineral sector for it to contribute significantly to sustainable national social and economic growth (GoU, 2000:4).

Reviewing Uganda’s vision for the mineral sector, it is clear that the country envisages development accruing from the exploitation of its mineral potentials. However, such development seems to be based on social and economic development with no mention made of environmental protection and management. Nevertheless, in order to realize this vision, Uganda has institutions charged with the duty of developing the mining sector. Key institutions include the following:

4.2.1.1 Ministry of Energy and Mineral Development

The Ministry of Energy and Mineral Development (MEMD) is the lead agency in Uganda’s mineral sector. MEMD is mandated to “establish, promote the development, strategically manage and safeguard the rational utilization of energy and mineral resources for social and economic development” (GoU, 2000:22). In the execution of its duties, MEMD is responsible for granting and revoking licences, developing and implementing Uganda's mining as well as oil and gas policies, issuing regulations, approving field development plans and negotiating petroleum agreements (GoU, 2013:20).

4.2.1.2 The Directorate of Energy and Mineral Development (DEMD)

The Directorate of Energy and Mineral Development within the Ministry of Energy and Mineral Development supervises the three technical divisions/ departments. These departments are in charge of the energy resources, mineral resources as well as petroleum exploration and production.

The Directorate for Energy and Mineral Development is charged with “providing leadership of a technical body to advise on the implementation of the mineral policy. It is therefore the technical link between MEMD and the policy implementation department” (GoU, 2000:22).

4.2.1.3 Department Geological Survey and Mines (DGSM)

The DGSM is the technical arm of the MEMD. The DGSM is charged with the duty of ensuring the proper implementation of Uganda’s mineral policy. Some of the responsibilities involve undertaking administration, supervision, regulation, monitoring, enforcement, training, provision of extension services as well as promoting other sectoral activities. Specifically, DGSM is mandated to “collect, collate, process, analyse, archive and disseminate geoscience data; monitor operators and enforce regulations in the sector; and develop and retain professionals capable of generating and utilizing the available geoscience data” (GoU, 2000:22).

4.2.1.4 The Petroleum Authority of Uganda (PAU)

The PAU is responsible for monitoring and regulating the exploration, development and production of petroleum in Uganda so that petroleum activities are undertaken in agreement with the existing legislations and procedures that are in harmony with the global oil sector best practices. Specifically, PAU has a duty to “review and approve any exploration operations by licensees; assess field development plans and make recommendations to the minister for approval, amendment or rejection of the plan; advise the minister in the negotiation of petroleum agreements and in the granting and revocation of licenses; and administer petroleum agreements” (GoU, 2013:21).

4.2.1.5 National Oil Company (NOC)

The NOC is responsible for handling Uganda’s “commercial interests in the petroleum sub-sector; managing state participation in petroleum activities; managing the marketing of the country’s share of petroleum received in kind; managing the business aspects of state participation; and developing in-depth expertise in the oil and gas industries” (GoU:2013:37).

4.2.1.6 District Local Government (DLG)

According to the Mining Act, District Local Administration authorities “are responsible for receiving and forwarding applications for various mineral rights, arbitrating in compensation, resolution of disputes and granting of licenses, for those minerals not administered under the Mining Act and goldsmith licenses” (GoU 2000:23).

In addition to the aforementioned institutions, Uganda also has a mining legal framework. This is the point of discussion in the next subsection.

4.2.2 Legal framework

Mining in Uganda is governed by the National Mineral Policy of 2000, the Mining Act of 2003, Mining Regulations 2004a (rules) and Mining Regulations 2004b (First Schedule of the Mining Act) as well as the Petroleum Exploration and Production Act 2013. Below is a discussion of the major legal framework for Uganda’s mining sector.

4.2.2.1 The Constitution

The Ugandan Constitution places significant natural resources (including minerals) under the protection and safeguard of the Government, on behalf of the people of Uganda. According to Article 244 of the Constitution:

The entire property in, and the control of, all minerals and petroleum in, on or under, any land or waters in Uganda are vested in the Government on behalf of the people of the Republic of Uganda. Therefore the extraction of such mineral resources has to be carried out in consultation with the people, with a mindset of protecting the people and their property (GoU, 1995).

This is based on the fact that minerals are a non-renewable resource which, if not properly managed, sustainability could be jeopardized. The Constitution gives mandate to manage the country’s mineral resources in the following provisions.

(i) Objective XIII: “Protection of Natural Resources: The State shall protect important natural resources, including land, water, wetlands, minerals, oil, fauna and flora on behalf of the people of Uganda”.

(ii) Subject to Clause 2 of Article 244 states that “Parliament shall make laws regulating the exploitation of minerals; the sharing of royalties arising from mineral exploitation; the conditions for payment of indemnities arising out of exploitation of minerals; and conditions regarding the restoration of derelict lands”.

(iii) “Minerals and mineral ores shall be exploited taking into account the interest of the individual land owners, local governments and the Government”.

(vii) Objective XXVII: “Promotion of rational use and development of natural resources”. Under this objective, the following are highlighted.

(a) “The State shall promote sustainable development and public awareness of the need to manage land, air and water resources in a balanced and sustainable manner for the present and future generations”.

(b) “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 Ugandans; and, in particular, the State shall take all possible measures to prevent or minimise damage and destruction to land, air and water resources resulting from pollution or other causes”.

(c) “The State shall promote and implement energy policies that will ensure that people’s basic needs and those of environmental preservation are met”.

(d) “The State, including local governments, shall promote the rational use of natural resources so as to safeguard and protect the biodiversity of Uganda”.

A review of the Constitution shows that it is all-inclusive and caters not only for the economic dimension but also the environment and all its components as well as the people. The Constitution recognizes the value of protecting the environment and the local communities where mining activities are to be undertaken. It therefore emphasizes sustainable development where the environment, the society and the economy are taken into consideration during resource exploration and extraction.

4.2.2.2 National Mineral Policy 2000

Uganda's mining policy and legal framework was improved, starting with the Mineral Policy in 2000⁴⁶, followed by the Mining Act in 2003 and the Mining Regulations in 2004. The resultant code is principally in-line with international "best practice". It is meant to support the country to compete for investment by creating liberalized, stable and conducive conditions. According to the National Mineral policy, "all minerals in Uganda are owned by the State and not of any individual or institution even if the individual or institution owns the land rights on which the resources occur. It is therefore the State that gives rights to individuals and companies to explore, develop and exploit the country's mineral resources" (GoU, 2000).

The general approach of the mineral policy is aimed at ensuring that "the country's mineral wealth supports sustainable national economic and social growth and development by providing gainful employment as well as the equitable sharing of the benefits from mineral resources amongst the people of Uganda" (Rugadya, Kamusiime and Nsamba-Gayiiya, 2010:16). The mining policy sets out to:

Provide conditions conducive to attract new investment for exploration and mining development, with the private sector providing the necessary management, technical and financial resources required. The policy provides conducive, stable, predictable, legal and fiscal environments to attract foreign and local investment for exploration and mine development. It also encourages local entrepreneurs to develop small-scale mines so that they can gradually develop capacity to offer employment and alleviate poverty among the rural population. It is envisaged that with this strategy, the mineral sector will increase substantially its contribution to serve as an engine of growth towards industrial development, employment creation, infrastructure development, increased revenue and foreign exchange earnings as well as socio-economic development (GoU, 2000:5).

Under the Mineral Policy framework, the Government of Uganda

⁴⁶To ensure a "modern, investor-friendly and acceptable Mineral Policy for Uganda, the Ministry of Energy and Mineral Development constituted an 'Inter-Ministerial Task Force' to spearhead the policy formulation. The Task Force was headed by the 'Minister of State in the Ministry'. Other members included representatives of the 'Ministry of Finance, Planning and Economic Development', 'Ministry of Justice and Constitutional Affairs' and 'Geological Survey and Mines Department'. The Task Force put in place a timetable and work- program for completion of the policy formulation process. The process involved a series of consultative technical and political meetings with stakeholders in Uganda. For comparative reasons, consultations were also made in a number of countries in the sub-region (including Botswana, Namibia, South Africa, Tanzania), as well as with the multi-national institutions such as the Commonwealth Secretariat and the World Bank" (GoU 2000:16).

expects to receive fair value for its mineral resources and, through private sector investment, to obtain the transfer of skills, know-how and technology to nationals; gives high priority to protection of the environment and avoidance of waste and misuse of its resources; recognizes that people living in the immediate area of a mineral development bear significant environmental and social costs and therefore seek to ensure that regional development, compensatory development, employment preferences and small business opportunities offset these inevitable costs for the local residents and communities (GoU, 2000:18).

However, the above mentioned expectations can only be possible if mining companies and investors embrace a sustainable development framework to mining where the environment, the economy and the society are given equal consideration.

In order to reduce and mitigate the negative social and environmental impacts of mineral exploitation, Government of Uganda is required

to ensure compliance with the existing laws and regulations on environment, human health and safety mainly through strengthening the environment monitoring unit of the Ministry of Energy and Mineral Development; carrying out sensitization of the society on the impact of mining to the environment; encouraging the application of environmentally friendly technologies in mineral exploitation; drawing up and establishing health and safety regulations in all stages of mineral development through regulations and education; and promoting affirmative action in favour of women and prohibiting child labour in mining (GoU 2000:20).

A review of the mineral policy shows that it is well written and articulates a number of issues relevant to mining. However, in as much as the policy clearly spells out these important issues, it is another matter to ensure that they are properly implemented in practice. It is only through a shift from theory to practice that the policy can benefit Ugandans, the failure of which may only result in wishful thinking as the adverse impacts of mining continue to escalate.

In as much as the Mineral Policy (2000) offers a strategy to influence activities and policies by the Ministry of Energy and Mineral Development (MEMD), investors in the mining sector as well as other players in the industry; supporting the implementation of the mining policy is basically influenced by the 2003 Mining and 2004 Mining Regulations.

4.2.2.3 Mining Act 2003

The current Mining Act was ratified in 2003 to annul and substitute the long standing 1964 Mining Act, Cap. 248. According to the Act, the annulment was a result of the need to “develop a new legislation on mining and mineral development, which conforms, and otherwise gives effect, to the relevant provisions of the Constitution; to vest the ownership and control of all minerals in Uganda in the Government; to provide for the acquisition of mineral rights; and to provide for other related matters” (GoU, 2003:8). The country’s mining policy notes that:

The 1964 Act was derived from the pre-Independence Mines Ordinance, which sought to implement the colonial policy. The law favoured the exploitation of minerals for export and little mention was made of building local utilization capacity. In addition, the emerging issues in the sector such as environment, gender and labour conventions were hardly addressed. (GoU, 2000:12).

In a shift towards development that is truly sustainable, the issues outlined in the above quotation are very critical. There is no way that legislation enacted during the colonial era (1894-1962) could meet the standards of contemporary society. The social, political and economic environment of the time was very different from the current environment. The present social, political and economic changes would by all means make the colonial legislation outdated in all aspects.

The Mining Act states that “mineral rights are vested in the Government. Therefore the exploration, exploitation and dealing in minerals can only be carried out by grant of a mining licence”. An individual, group of persons or a company that intends to carry out mining or trading of minerals is therefore required to acquire a mining licence. The Mining Act provides for mineral rights through the following licensing regimes.

4.2.2.3.1 Prospecting license (PL)

A Prospecting License permits its holder to prospect for mineral resources country wide; apart from in the locations where other mining permits, especially exploration licence and mining leases have already been approved. It is neither area specific nor mineral specific and does not confer complete rights upon the holder. The PL is approved for only one year and it is not renewable. At the end of one year, the holder can apply for a new PL. According to the Mining Act, “a prospecting license is a prerequisite to apply for all other mineral rights and can be obtained through simple

application via the Directorate of Geological Survey Mines at a prescribed fee. An individual holder of a PL must be Ugandan and must provide a copy of a valid identification such as Passport, Voter's Card or Driving Permit. A Company or Association must provide a certified copy of the company certificate of registration; Certified copies of constitution of the Association or Company; and an authority letter endorsed by the Company Directors or Executive Committee of the Association" (GoU, 2003:17).

4.2.2.3.2 Exploration License (EL)

According to the Mining Act, "exploration licenses are mineral rights granted for a maximum duration of seven years (initially three years, renewable for two terms of two years each) to enable the investors to carry out conclusive exploration work. On each renewal, 50% of the license area is relinquished to enable other interested parties to explore the ground". The application process necessitates that the area of interest is available (not covered by an existing mineral right), and is granted on a first-come, first serve basis determined by the application date and time of signature of the Chief Administrative Officer (CAO) of the District(s) where the area is located. While an individual or company can lawfully acquire several exploration licences, a single license can cover a maximum area of 500 km². However, as a result of the high charges of the licences coupled with the on-going challenges in exploring "given the cost of licenses and practical constraints in exploring such very huge locations, several exploration permits are much smaller. The key requirements for an EL include: Payment of preparation and registration fees; Payment of a prescribed annual rent; Receipts for payment of royalties; Certified Certificate of Incorporation and Company Constitution; and Environmental Performance Bond - Payable Cash or Bank Guarantee (GoU, 2003:19).

4.2.2.3.3 Retention License (RL)

The RL is given only to the holders of an EL after they have identified a mineral deposit within the exploration area but, as a result of the negative temporary market conditions (especially economic factors and other factors beyond the EL holder's reasonable control), "commercial exploitation of the deposit is not possible at the time". It is given for a period of up to three years and is only renewable once not going beyond two years. The key requirements for an RL are: Application for RL; Payment of preparation and registration fees; 1 year mineral at a prescribed

fee; and a Mineral feasibility study report, indicating economic prospects as well as environmental impact mitigation plan and costs (GoU, 2003:24).

4.2.2.3.4 Mining Lease (ML)

A Mining Lease is for mining operations involving substantial expenditure. It is granted for a minimum period of 8 years and a maximum period not exceeding 21 years or the estimated life of the ore body to be mined whichever is shorter and is renewable for a period not exceeding 15 years. The requirements for application for a ML include: Statement as to the number of land owners or lawful occupiers of land; Water use permits; Certificate of approval of the Environmental Impact Assessment (EIA) by NEMA; Map 1 of scale 1:50 000 and Map 2 of scale 1:10 000 of the area being applied for the ML; Technological report on mining and processing techniques; Mineral feasibility study report and mine plan; work plans, endorsement by the appropriate Chief Administrative Officer in presence of a witness of high moral standing for example a local leader such as local district Chairperson or Councilor; Proof of ownership of surface rights; Payment of preparation and registration fees; Statement on employment and training opportunities of Ugandan citizens; Company Business Plan including production projections (GoU, 2003:25).

4.2.2.3.5 Location License (LL)

Artisanal and small-scale mining (ASM) licensing in Uganda is provided for in the legal framework by way of a Location License, which pertains to prospecting or mining operations which do not involve substantial investment (not exceeding 6,000 USD) or the use of specialized technology. Since it is aimed at encouraging Ugandans or corporate bodies with majority shareholding to get involved in artisanal mining, applicants must be individuals or association members that hold Ugandan citizenship or companies with at least 51% shares belonging to one or more Ugandans. The LL is exclusive, granted for a two-year period, renewable in two-year periods and the holder is obligated to declare production and engage in selling of the minerals which they have produced. In order to acquire a location license, applicants or association members must hold Ugandan citizenship or be comprised of a joint venture with more than 50% Ugandan ownership. Applicants that fit these criteria can apply for an exclusive “location license”, which is granted for a two year period, at which time it may be renewed (GoU, 2003:34).

In lieu of a detailed Environmental Impact Assessment (EIA), all applicants for the above mineral rights attach a simple “Project Brief”, which describes basic measures for environmental protection, reclamation and rehabilitation, such as backfilling of pits and use of sedimentation ponds to prevent siltation of rivers (GoU/NEA, 1995; GoU, 2003:55). The requirement of investors undertaking a detailed environmental impact assessment before any exploration activity is very fundamental. However, in this thesis I argue that EIAs should be developed in consultation with the local community to ensure that the local people are involved in the mining project right from the outset and are also able to hold investors accountable.

In as much as the 1964 Act was repelled, the current Mining Act also has some contentions that the Government of Uganda needs to address if the country and its citizens are to benefit from it. For instance, the ownership of minerals by the State and not of any individual or institution, even if the individual or institution owns the land rights on which the resources occur is a contentious issue. It seems to imply that land owners have no legal rights to the minerals on their property. As a result, they cannot engage in any mining activities on their land. However, the question arises as to whether the local people in the mining areas are aware of this legal provision in the Act. In situations where the land owners are not aware of this specific provision or even the mining laws in general, this proves to be a big challenge to them. The land owners will find it hard to give away the “treasure” found on their land to strangers (investors) to whom Government has granted the mineral rights. This is reiterated by Hinton et al during the study on minerals in Karamoja region who noted that “many owners, occupants and lands users in the mining areas had difficulty accepting that ownership of land only provided *surface rights* but not the right to extract minerals” (Hinton et al, 2011:50). In such a situation, how then can the land owners co-operate with the investors? It is also important that if the local people are not aware of the different mineral licences and their application, conflict may arise. Many of the minerals are located in remote areas where the people may not know about the mining law and its contents. This could bring about conflict and misunderstandings between the land owners and the investors. When force is used by the investors, it could result to severe abuse of rights. Free informed consent from the land owner is fundamental if conflicts and misunderstandings are to be avoided. This then implies that the local people should be helped to understand and appreciate the prevailing mining law in the country.

4.2.2.4 Mining Regulations 2004

Following the Mining Act of 2003, Mining Regulations 2004a (Rules) and Mining Regulations 2004b (First Schedule of the Mining Act) were enacted to regulate the ownership and extraction of minerals. In particular, the Mining Regulations make provisions for the different mineral rights and regimes (PL, EL, RL, ML and LL) in detail. They outline the requirements needed for the investors to be granted the respective mineral rights. Part XI of the Mining Regulations is of importance to the protection of the environment.

It requires the holder of an exploration licence to prepare a project brief before commencement of work indicating: a) the activities involved in the programme of exploration in a sequential order; b) the projected area to be affected by each activity; c) the materials that are to be used in construction and the necessary inputs; d) the number of people projected to be employed; e) the likely environmental effects of the materials to be used, products and by-products to be generated, the duration of the environmental effects and their prevention and mitigation; and f) any other activities that may arise during the implementation of the project (GoU, 2004).

The project brief is reviewed following the EIA guidelines in the mineral sector developed by NEMA. Where the environmental impacts are likely to be significant yet the mitigation measures are not readily prescribed, the holder of the exploration licence is required to carry out an environmental impact assessment with a costed environmental restoration plan⁴⁷, which addresses restoration of worked out areas. The holder of the exploration licence or a mining lease is then required to deposit an environmental bond⁴⁸ commensurate with the cost of the environmental restoration plan submitted. Holders of the EL or ML are obligated to submit a self-monitoring plan of the project implementation and the environmental quality of the surroundings of the project indicating: a) the methodology for monitoring compliance; b) the key indicators of environmental impact and their tiered threshold values; and c) a schedule for monitoring each indicator and for reporting on the performance of mitigating measures. Where the effects are worse off than predicted in the environmental impact assessment process, the holder of the exploration licence or

⁴⁷ An environmental restoration plan is an action plan that focuses on repairing specific areas where the mining activities have negative effects on the environment.

⁴⁸ Environmental bond refers to “an environmental management strategy designed to confront individual resource users with the marginal social costs of the ‘worst case’ results of their activities at the time those activities are undertaken” (Constanza and Perrings, 1990: 58). It is usually a fee charged to and deposited by all holders of EL to encourage them undertake mining activities in the most desirable way.

the mining lease is then mandated to submit new mitigation measures for improved environmental conservation (GoU, 2004).

4.2.2.5 Petroleum Exploration and Production Act -PEPA (2013)

The Petroleum Exploration and Production Act was enacted in 2013 and it repeals the earlier petroleum law of 1985. PEPA 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 restoration of derelict lands; to repeal the Petroleum (Exploration and Production) Act, Cap 150; and for related matters (GoU, 2013:9).

With the discovery of commercial oil deposits, there was need for a clear legislation on the oil resource to regulate its exploration and production to ensure that the country, especially the citizens benefit from the resource.

The Act states that all petroleum rights are vested in the Government of Uganda. Companies are allowed to carry out petroleum exploration, development and production activities only if they hold certain consents and permits. The PEPA provides for mineral rights through the following six licensing regimes, namely reconnaissance permits; petroleum exploration licences; petroleum production licenses; licenses for the placement and operation of a facility; permits to operate drilling rigs; and production permits.

4.2.2.5.1 Reconnaissance⁴⁹ permits

An application for a reconnaissance permit is made for a geographically delineated area accompanied by the prescribed fee. According to the Petroleum Exploration and Production Act,

⁴⁹ Reconnaissance means the “undertaking of preliminary petroleum activities for the purpose of acquiring geoscientific data and includes geological, geophysical, geochemical surveys and drilling of shallow boreholes for calibration” (GoU, 2013:15).

Reconnaissance permits are non-exclusive and may be issued to different persons in respect of different reconnaissance activities in the same area or areas. Once issued, the permit states: a) the date of issue of the permit; b) the area to which the permit relates; c) the type of data for which the permit is issued; d) the conditions on which the permit is issued; and e) the duration of confidentiality of the data collected. All reconnaissance activities are announced by the Minister of Energy and Mineral Development in the local languages, on local media, of the area where the permit applies. In addition, a local contact office is designated from which the public can access information or register their concerns (GoU, 2013:41).

4.2.2.5.2 Petroleum exploration licenses

The Minister of Energy and Mineral Development (MEMD) may, in consultation with the Authority and with the approval of the Cabinet, grant petroleum exploration licenses through a bidding process. The bidding process for petroleum exploration licenses involves a public announcement in the Gazette and national and international newspapers where applications are made in writing and accompanied by the prescribed fee. The application must identify the name and place of the applicant's incorporation, the applicant's directors, any beneficial owners and the blocks in respect of which the application is made. It must also be accompanied by a statement of work and minimum expenditure commitment, information on the financial status and technical competence of the applicant as well as information on its proposals with respect to the training and employment of citizens of Uganda. Applications relating to more than one block⁵⁰ must relate to blocks situated so as to form one single area or be such that each block in the area has a side in common with at least another block in the area. The exploration license grants an exclusive right to explore for petroleum in specified blocks and binds licensees to: a) carry out a minimum work programme; b) explore the licensed area; c) commence seismic surveying; and d) drill a minimum number of wells. The initial term of an exploration license is two years, with the possibility to extend twice for two years at a time (GoU, 2013:42).

4.2.2.5.3 Petroleum production license

A petroleum production license is granted to a “holder of a petroleum exploration license” who has made a discovery of petroleum in his or her exploration area. A petroleum exploration license

⁵⁰ A block refers to “the acreage which is stratigraphically delineated according to the reference map of Uganda”. (GoU, 2013:11)

holder has full rights to apply for “a petroleum production licence over any block or blocks in that area which, following appraisal, have been shown to contain a petroleum reservoir or part of a petroleum reservoir”. According to PEPA, “an application for a petroleum production license must include a report on the petroleum reservoir including the chemical composition and physical properties of the reservoir, thickness and extent of the production strata as well as a field development plan including the method for development, financing and drilling” (GoU, 2013:56).

4.2.2.5.4 Licenses for the placement and operation of a facility

A facility license is only “granted for the construction, placement, operation or use of a facility not already subject to a petroleum production license. A facility license includes: a) the date of the grant of the license; b) the geographical area to which the license relates; c) the facility or facilities, activities or use to which the license relates; d) any conditions on which the license is granted; and e) the operator” (GoU, 2013:76).

4.2.2.5.5 Permits to operate drilling rigs

This permit is granted to a licensee to operate a drilling rig. Prior to drilling any well, the operator is required to submit a thorough report on “the technique to be employed, an estimate of the time to be spent, the material to be used and the safety measures to be employed in the drilling of the well”. This report is submitted to the Petroleum Authority. In cases where the operator intends to abandon any drilled well, “the closure or plugging of the well must be carried out only with the prior written consent of the Authority in a manner approved by the Authority” (GoU, 2013:76).

4.2.2.5.6 Production permits

The Minister of MEMD in consultation with the PAU before or concurrently with a petroleum production license approves the production schedule in a licensee's field development plan and issues an annual production permit to the licensee. The permit approves for a fixed period of time the quantity of petroleum which may be produced. The Minister may order production to be increased or decreased in relation to an approved production plan and can also apportion such increase or decrease proportionately between relevant reservoirs. “a licensee is not recovering petroleum in an area in which the Authority believes there is recoverable petroleum, PAU may

direct the licensee to recover that petroleum. The Minister may also, in consultation with the Authority, postpone petroleum production” (GoU, 2013:77).

However, since mining involves access to land, soil and water resources as well as generating various social and environmental impacts, it must be conducted in accordance with several other pieces of legislation, including but not limited to the National Environment Management Act; the National Forestry and Tree Planting Act; the Water Act (Cap. 157); the Wildlife Act (Cap.200 - particularly Sections 15 and 16); the Town and Country Planning Act (Cap.246); the Land Act (Cap.227); the Local Government Act (Cap. 243 - particularly the Second Schedule); the Investment Code Act (Cap. 92); the Occupational Safety and Health Act (2006); and the Employment Act (2000) among many others (UNEP, 2012; Hinton et al, 2011:30). Each of these legislations has got provisions specific to protection of the particular components of the environment.

4.2.3 Uganda’s mineral fiscal policy

In general terms, mineral fiscal policies suggest procedures of mineral taxation which are intended to appropriate resource rent. “Resource rent is the total value (gross proceeds) arising from the exploitation of a deposit over the sum of all project costs including the rewards to each of the factors of production” (Land, 1995:93). Uganda’s mineral fiscal regime arises from a combination of sources that comprise contractual arrangements and statutes such as tax legislations, investment legislations and mining legislations. According to the study conducted by Deloitte, “Uganda’s mineral fiscal regime has not resulted in a separate tax system but has made modifications cognizant of the special nature of the mining industry” (Deloitte, 2014:4). As such, the Government of Uganda uses the fiscal policy to increase revenues by applying a “fair and equitable” mechanism to generate monetary benefits from economic activities and also monitor taxpayer behaviour through “command and control” systems.

Uganda’s fiscal and monetary policies are developed by the Ministry of Finance Planning and Economic Development (MoFPED) in collaboration with affected government agencies. According to Houdet et al, the fundamental aspects informing fiscal measures in the case of Uganda’s mining industry include:

Regional harmonization of royalties and taxes (a factor that can reduce cross-border illicit trade); international competitiveness in order to attract foreign investors; licensing and maintenance costs particularly in the case of ASM and traders; and financial benefit sharing, typically calling for greater benefits to areas most affected by mining (2014:29).

Such fiscal measures if well implemented can help guarantee increased returns from the mineral resources.

Uganda's mineral taxation regime includes the mineral income tax, value added tax, royalties and several other taxes. This subsection discusses Uganda's major mineral taxation regime.

4.2.3.1 Mineral Income Tax

Uganda's mineral income tax system is based on "the taxable profits of the mining company which are based on the accounting profits or losses adjusted for allowable or dis-allowable expenses as set out by legislation. Income tax is only assessed when the company makes a taxable profit" (GoU, 1997). Mining companies are "taxed through a variable rate of income tax". The justification for this practice is to attain a reasonable portion of net cash flows for the government at "different mine profitability levels while at the same time providing suitable tax relief for projects" (Deloitte, 2014:5). The 3rd Schedule, Part 3 of the Income Tax Act states that "a variable rate of income tax formulae is used to tax highly profitable mines which can rise up to 45% but also decrease to 25% if the mine is not so profitable in that year of income" Furthermore, section 85 of the Income Tax Act levies "a withholding tax of 15% on payments for services provided in Uganda to mining companies by non-resident service providers" (GoU, 1997). However, according to a study by Deloitte, "many of the subcontractors to the mining companies are non-resident. They are in country for a limited period and often prefer not to register for the tax" (Deloitte, 2014:5). When the subcontractors prefer not to register for taxes, the implication is that there will be less tax returns.

A review of Uganda's Income Tax regime shows that it is more flexible and that it would be more competitive from the perspective of investors if the issue of withholding tax on service payments to non-resident subcontractors was to be addressed. It becomes a huge cost when the subcontractors demand that the mining company bears the withholding tax expense via a gross-up. The rate (15%) also equates to tax at the regular corporate rate (30%) on a 50% profit margin

which is not realistic. According to Deloitte “cash flows of mining companies are adversely impacted by taxes early in the life cycle of projects yet it is during the exploration phase where companies largely rely on risk capital. If exploration is not supported, then mine development cannot proceed as there will be no reserves to develop. Key mineral exploration services could be exempted from withholding tax to support exploration activities” (Deloitte, 2014:5).

4.2.3.2 Royalties

According to the Mining Act, royalties must be paid on all minerals. These royalties are distributed between the central government (80%), district local governments (10%), sub county local governments (7%) as well as the owners/ lawful occupiers of land that is subject to the mineral rights (3%). The Act further notes that all minerals obtained or extracted during the prospecting, exploration, mining phases or mineral beneficiation⁵¹ operations are to be subjected to the payment of royalties. The royalties are calculated according to the gross value of the minerals based on the prevailing market price (GoU, 2003:52). The payment of royalties, in addition to other taxes and fees that most companies pay in other sectors (for example corporate tax, income tax), is justified on grounds of “providing some form of compensation for permanent loss of a non-renewable resource and it constitutes revenue in return for permission to mine as well as emergence of social disturbances such as increased food prices and high spread of HIV/AIDS in the mining areas” (Houdet et al, 2014:29). Hinton et al also argue that such revenues are also needed to respond to the national development priorities (Hinton et al, 2011:38). When the royalties are well managed and utilized, then they are able to serve their purpose thereby fostering both local and national development.

In addition, mining companies are also required to pay several other taxes and fees such as “annual mineral rent” according to the size of a license; “withholding taxes on interest, dividends, royalties and services”; “stamp duty” on “legal documents” obtained through the local government (district) payments for approving license application forms; “personal income tax” for mine workers, including the National Social Security Fund contributions; any “applicable land and building taxes” associated with the area where mining takes place; and any other charges and duties enacted

⁵¹ Mineral beneficiation means “the process of improving the grade or quality of mineral ore using various mining processes” (GoU, 2003:53)

UGX stands for Uganda Shillings. It is the currency for Uganda.

by the Local Government as approved by the Central Government (GoU, 2003:54; Houdet et al, 2014:30). The royalties generated are supposed to be used specifically for improving local government development activities such as roads, boreholes and health care facilities in the mining areas.

Furthermore, the Government of Uganda acknowledges the special features of large scale mining especially high level of capital expenditures such as specialized machinery and trucks, “often resulting in deferred profitability for several years (in some cases, a decade or more), and potential concomitant investments in infrastructure (roads, electricity, access to water) that can provide broader social benefits to surrounding communities” (Houdet et al, 2014:30). The Mining Act thus indicates that “special tax rates can be applied to the mining sector as investment incentives in specified circumstances for instance zero import tax on mining equipment or for specific projects through Mineral Development Agreements. In such a case the Minister of Energy and Mineral Development may waive a royalty with the approval of Cabinet, in the interest of mineral exploitation and production” (GoU, 2003:53).

A critical review of the above laws and policies regulating mining in Uganda shows that they are comprehensive and are aimed at promoting mining that is sustainable where the economy, the society and the environment are all considered fundamental. Having earlier on examined the activities that investors in Uganda’s mining sector are involved in, the next subsection presents the investment code of Uganda.

4.3 Investment code in Uganda

All investments in Uganda are guided by the 1991 Investment Code Act. This code makes “provision in the law relating to local and foreign investments in Uganda by providing more favorable conditions for investment, and the establishment of the Uganda Investment Authority” (GoU, 1991) among other matters. The code spells out the requirements that the investors must adhere to before being granted an investment license. This license is obtainable at the Uganda Investment Authority (UIA). The Uganda Investment Authority handles the process of investment proposals, as well as giving assistance and advice to potential investors. In addition, UIA provides investment facilitation and “after care” by organizing meetings with investors to identify investors’ problems and handle investors on case by case basis at different levels of authorities, and liaisons

with relevant line agencies and ministries to provide services to all prospective and already existing investors (Olanya, 2007:57).

UIA operates in partnership with the private sector and Government to drive national economic growth and development (COMESA Regional Investment Agency, 2016). Uganda's investment policy requires

investors to write an application clearly specifying the name and address of the proposed business enterprise, its legal form, its bankers, the name and address of each director or partner, as the case may be, and the name, address, nationality and shareholding of any shareholder who is not a citizen of Uganda. The application should also clearly detail the nature of the proposed business activity and proposed location where the activity is to be carried out, the proposed capital structure and amount of investments and the estimated number of persons to be employed (GoU, 1991).

When the applicant for an investment licence and the UIA have decided on the terms and conditions of the licence as well as the incentives, UIA then grants the applicant an investment licence. This license obligates the holder to make the required preparations for starting the business enterprise described therein. It also contains the terms and conditions of the investment licence and incentives, if any. Article 18 (2) (d) "makes it an implied term for investors to take necessary steps to ensure that their business operations do not cause injury to the ecology or environment" (GoU, 1991). This clause is consistent with the Mining policy and the National Environment Act provisions. Activities of investors can have serious adverse effects on the environment especially if they are undertaken with only the profit motive. Such environmental provisions are thus important to regulate investors' activities in order to limit their adverse impacts on the environment.

The Code also encourages private investment by streamlining procedures and guaranteeing protection of investors against appropriation. Foreign individuals and companies are allowed to own 100% of a business in Uganda (GoU, 1991). This provision also extends to investors in the mining sector. In addition, import taxes such as customs duty for all mining equipment is zero-rated. Such incentives have greatly attracted investors to take up mineral investments in Uganda as they have offered a conducive investment climate.

In addition to the investment code, Uganda is a signatory to major international investment and business protocols. Some of these include the “Multi-lateral Investment Guarantee Agency (MIGA); Overseas Private Investment Corporation (OPIC) of USA; Convention on the Recognition and Enforcement of Foreign Arbitral Award (CREFAA); Islamic Corporation for the Insurance of Investment and Export Credit (ICIEC); International Centre for Settlement of Investment Disputes (ICSID); Agreement on Trade Related Investment Measures (TRIMS); General Agreement of Trade in Services (GATS); Agreement on Trade related Aspects of Intellectual Property Rights (TRIPS) and the African Growth and Opportunity Act (AGOA) of USA” (UIA, 2015:4). These investment protocols oblige Uganda to adhere to certain standards to encourage more investors in order to solve the economy’s development challenges.

4.4 Conclusion

In this chapter, the study has provided an outline of Uganda’s mining sector and the country’s investment code. It has presented the history of mining in Uganda and showed that mining has evolved over time with the first formal mineral prospecting concession issued during colonial times in the 1900s. The chapter has further shown that Uganda has a variety of minerals including metallic and non-metallic minerals. It has also noted that the country has a well-established mineral regulatory framework in the form of institutions, laws and policies all of which are aimed at regulating mining activities. The chapter has also presented Uganda’s investment code and noted that the code applies to all investors who would like to undertake investments within the different sectors of the economy. The investment and mineral regulatory frameworks are meant to ensure that Ugandans benefit from the country’s vast mineral resources. In establishing whether or not Ugandans are benefiting from the mineral resources, the next chapter discusses the contribution of investors in Uganda’s mining sector to development, society and the environment.

CHAPTER FIVE: THE IMPACT OF MINING ACTIVITIES IN UGANDA ON DEVELOPMENT, SOCIETY AND THE ENVIRONMENT

5.0 Introduction

The preceding chapter presented a synopsis of Uganda's mining sector highlighting the history of mining, the country's mineral occurrences as well as the mineral regulatory framework. It noted that the comprehensive mineral regulatory framework is meant to ensure that Ugandans benefit from the mineral resources. In this chapter, the study discusses the contribution of mining to Uganda's development, environment and the society. It seeks to answer the second research question: How have investors in Uganda's mineral sector contributed to development, society and the current state of environmental crisis? In answering this question, the chapter is divided into three sections. The first section discusses the impact of mining on development; the second part discusses the impact of mining on the environment; and the last part discusses the impact of mining on the society within the mining areas. This is followed by a conclusion.

5.1 Contribution of mining to economic development in Uganda

The International Council of Mining and Metals indicates that the development benefits of mining are highly significant in many countries and are usually expressed in terms of production volumes, total investment/foreign direct investment, employment and wages, government revenues through taxation and royalties, contribution to exports, net foreign exchange earnings and direct effects on national economies (ICMM, 2012). There is no doubt that Uganda has achieved some of these benefits through its mining sector. In discussing the development benefits of mining for Uganda, the following issues are noted:

5.1.1 Boosting government revenue

Foreign and local mineral development investments in Uganda have played an important role in boosting the country's revenue. This is in the form of taxes, application fees for the different licences, rent fees and royalties, among others. Hinton et al note:

The Government of Uganda has in particular increased efforts to collect a larger portion of revenues from the minerals sector by levying application/issuing, registration and mineral rental fees, and collecting unit and value based royalties on mineral projects within the country's borders.

As more formal mines are established, the sector increases its bargaining power to review/change tax laws or royalties to better suit the objectives of the country's National Development Plan (2011: 24).

The revenue collected has given the sector and the country in general some form of financial independence and, if well managed, it can contribute towards the development of the economy and improvement of people's wellbeing through better service provision and delivery. In 2011, the country produced and exported 1,634,036 tonnes of minerals including limestone, gold, pozzolana, vermiculite, cobalt, wolfram iron ore, columbite and gypsum (Aspermont, 2012:9). The mining journal further notes that by the end of 2011, over 331 mineral licences had been granted to investors and the total investments in mineral exploration increased to over US\$ 340 million while US\$14.6 million was generated in the form of licence fees and royalties (Aspermont, 2012:11). Government has attributed the increased royalty collection to relatively increased awareness by the public on the investment opportunities in the mineral sector (Hinton et al, 2011: 25). In so doing, government is tending towards revenue maximization from its mining sector. The figures presented could have increased given the fact that the country has started the exploration of oil in the Albertine graben. With investments in the mineral sector, there could be more opportunities for generation of additional revenue as the country pursues further development goals in other sectors such as agriculture, health, education, tourism, water and sanitation. However, this is possible only if there is transparency and proper accounting mechanisms in place for the revenue generated.

One issue emerging is that in circumstances under which a mining company invests capital and employs comparatively few local laborers, the greatest amount of foreign exchange related to the exports flows abroad. This leaves fewer returns for the country and the local communities. A report by the African Progress Panel shows that some mining companies generate profits which do not benefit government revenues due to excessive tax benefits, tax evasion and under-valuation of assets. Moreover many international investors use companies registered in tax havens and offshore centres with transactions among their own affiliates. This permits them to hide the bulk of their profits (African Progress Panel, 2013). Luke Patey notes that apart from generating petrodollars for the Ugandan government, the developmental impact of the oil industry is limited (Patey, 2015: 34). This then becomes an adverse effect of mining on the economy especially if the Government

cannot properly assess the profits generated by the investors to ensure that they are adequately taxed.

5.1.2 Employment

The mining industry has provided jobs to a number of people in Uganda in both large scale mining firms as well as artisanal small scale mining. Artisanal and small-scale mining constitutes an increasingly important “livelihood for tens of millions of people around the world” (Villegas et al, 2012:18). In Uganda, over 200,000 men and women are employed in ASM (Data, 2013:5; UNEP, 2012:6; Hinton et al, 2011:9; TACC, 2009:2). Artisanal mining provides access to immediate cash, which is often difficult to acquire in rural or subsistence farming areas. It is therefore a source of potential relief during difficult circumstances in fragile societies which have undergone or are undergoing deepening poverty and natural disasters. Many of the people engaged in this kind of mining are unskilled and illiterate individuals. With current high mineral prices (especially for gold), ASM is a rational economic choice for people seeking to escape absolute poverty or improve their lives (Houdet et al, 2014:5). For example following the Sustainable Management of Mineral Resources Project (SMMRP) funded by the World Bank, ASM incomes rose from US\$3 per day to US\$5-US\$7 per day from 2006 to 2011 (World Bank, 2013). Through the sale of the minerals to the large scale miners even other traders, small scale miners are able to secure more income and faster daily economic returns than from other livelihoods such as agriculture which is a seasonal activity.

With regards to the current exploration of oil in the Albertine graben, all the three major international oil companies in Uganda (Total E & P Uganda, CNOOC Uganda Ltd and Tullow Uganda Operations Pty Ltd) show a strong commitment to hiring Ugandans permanently in more technical, clerical and managerial positions. For instance, a study conducted by Beatrice Ongode showed that in 2013 Total E & P employed “approximately 250 direct staff out of which more than 50 percent were Ugandans. They were employed in positions varying from engineers to personal assistants, both in Kampala (the main office) and in the areas of operation. CNOOC employed around 70 percent Ugandans while 88 percent of Tullow’s employees in Uganda were Ugandans with over half of Tullow’s Country Leadership Team comprising of nationals” (2013:13). A Joint Venture Industrial Baseline Survey for Uganda by Total E & P Uganda, CNOOC Uganda Ltd and Tullow Uganda Operations Pty Ltd conducted in 2014 highlighted that

the Lake Albert Basin Development Project would create between 100,000 to 150,000 jobs through direct, indirect and induced employment. Direct jobs (those directly linked to the oil project) were at technician level with a very limited number ranging from 11,000 to 15,000 jobs. Indirect and induced jobs would be created by other sectors which would benefit from the economic development triggered by the oil project (Hamman, 2014:3). Both direct and indirect jobs can help to reduce poverty and improve standards of living.

However, it should be noted that modern day mining is capital intensive. As such, the current advancement in technology has reduced the number of jobs especially with the use of capital-intensive large mining operations. More still, the mining sector seems to create especially few jobs for those without technical skills in Uganda's mining areas. This is reiterated by Africa Progress Panel that the oil industry and the mining sector operate as islands outside the national economy and therefore create few jobs and do not have many links with local businesses (Africa Progress Panel, 2013). Under such circumstances, few people seem to get jobs as a result of mining projects in their areas.

Houston argues that the kinds of jobs created by investors are characterized by poor working conditions and meagre wages especially in Sub Saharan Africa (Houston, 2007: 325–342). Stahl Gunther and Voigt, Andreas cited by Sindre Riddervold also argue that the standards of living remains deplorable even with employment in foreign firms and thus the quality of jobs generated through foreign direct investments is questionable (Riddervold, 2011:24). This is echoed further by Sornarajah Muthucumaraswamy that foreign direct investments do not always lead to meaningful employment creation (Sornarajah, 2004). Therefore, ensuring that the local communities directly benefit from job creation opportunities remains a critical issue for the mining sector in Uganda.

Another emerging issue is about livelihoods that may be lost in the long run resulting from oil and mineral resource extraction activities. This is a critical issue because a number of livelihoods are threatened, devastated or even sacrificed as a consequence of mining. Some of the livelihoods under threat are tourism, fishing, and agriculture as a result of environmental pollution and climate change, among other factors. Water, land, food and climate are essential factors for life and livelihoods to exist. It therefore remains critical how the environmental and social impacts of mining will be dealt with in the long run once there are no minerals and oil to extract. A study by

National Association of Professional Environmentalists (NAPE) and Gaia Foundation indicates that:

Since the discovery of oil in the Albertine rift in 2006 exploration activities, such as the drilling of oil wells and associated noise and vibrations, have disturbed the breeding grounds and migratory patterns of wildlife and the fish in Lake Albert. As a result, fishing has significantly diminished for communities, which undermines a major source of livelihood and food sovereignty for them. Elsewhere, communities have had their access and enjoyment of land and water near oil wells restricted, such as fishing communities in Kaiso and Sebagoro and from Kyehoro to the Kabwoya Wildlife Reserve (NAPE and Gaia Foundation, 2014:xi).

This quotation points to the seriousness of the adverse impact of oil exploration especially on the environment and the local communities. Whereas mining has created some jobs for the local community, it has on the other hand interfered with the other sources of livelihood.

5.1.3 Infrastructural development

Mining has also contributed to infrastructural development in many mining areas of Uganda. This infrastructure includes health facilities, schools, market centres and transport networks. A walk through many of the large scale mining areas shows a number of schools, health centres and market centres set up by the mining companies to help the local community. There is also an improved road transport network in many mining areas. For instance, “as a result of mining activities in Karamoja, Tororo Cement Limited has undertaken road maintenance and construction as well as erection of bridges; construction of classroom blocks and pit latrines; sinking of boreholes; construction of a water dam for animals; distribution of social amenities such as iron sheets, water jerry cans and mosquito nets to the local community” (Hinton et al, 2011:27). Such amenities help to improve the living conditions of the people.

Furthermore, among the infrastructure as a result of oil exploration and production is the 92 km road between Hoima town to Kaiso-Tonya on the shores of Lake Albert. This road was commissioned in February 2015 by the President of Uganda Yoweri Kaguta Museveni (The Insider, February 26th 2015). This road was constructed to not only ease the movement of oil drilling equipment but also facilitate movement of the people within the region. Other roads constructed as a result of mineral development in the specific regions include the Moroto, Tororo and Kasese roads, among others. Majale further notes that “following the discovery of oil in Hoima

district, Hoima Municipality is becoming an attractive and dynamic centre of economic activity. Hoima is one of the 14 municipalities in the six-year Uganda Support to Municipal Infrastructure Development (USMID) project aimed at enhancing institutional performance of local governments to improve urban service delivery” (Majale, 2014:21). The above examples illustrate some of the significant infrastructure improvements that mining companies provide which could have wider benefits for the local communities even beyond the life of the mine itself if well maintained.

Mining has also boosted the education system. In addition to including geological and exploration studies in the curriculum, a number of mining firms have sponsored and trained students and staff. For instance, the oil operators in Uganda are mandated to train their employees; they offer scholarships as well as internship programs for students and newly graduated professionals with no work experience (Hamman, 2014:33). Tullow, Total and CNOOC oil companies are supporting local capacity building in the mining industry by providing scholarship schemes at both national and international levels that are aimed at training the next generation of oil experts (Ongode, 2013:13). Furthermore, Kigumba Petroleum Institute was also set up in 2009 to train craftsmen and other technicians in petroleum studies including drilling, electrical installation, instrumentation and welding (Observer Media, 2014). With increased access to education as well as improvement in the education curriculum, the country’s human capital is boosted especially where the skills attained are transferable beyond the particular mine projects.

However, some studies carried out in some of the mining areas in Uganda noted that in as much as social investments have an impact on the communities, the communities in the mining areas have generally not been properly consulted on service provision, and corporate responsibility projects have not been aligned with central or district development plans (Holterman, 2014:32; International Alert, 2013:45). In circumstances where the local communities are not consulted, the investors may end up providing resources that are not linked to the people’s needs. The people’s experiences and needs should inform the services provided by the investors. Only then can the social investments be counterbalanced with the negative consequences that the industry can have on livelihoods (Petrus de Kock and Sturman, 2012).

5.1.4 Economic diversification

Within the mineral rich areas of Uganda (especially those where there is large scale mining such as Tororo, and the Albertine graben, among others) new sectors and businesses are rapidly emerging. According to Sarah Palmer, as the oil economy grows in Western Uganda, opportunities for local people to diversify livelihoods beyond agriculture are emerging and these opportunities do not lie within the oil sector. The people in the Albertine region must be supported to develop the necessary skills to capitalise on these new opportunities to avoid being left behind (Palmer, 2015). This is one of the ways of promoting local content within Uganda's mining sector especially oil and gas where besides being employed, people are involved in providing services to the mining companies, for example through the supply of agricultural food stuffs. It is true that foreign direct investment not only promotes knowledge and technologies transfer in an economy but also locally leads to the development of other enterprises. This is evident with the emergence of many small entrepreneurs and businesses within the areas where large mining investments have been established. The small businesses aim at providing services such as lodging facilities, catering services, and mini markets among others to the employees of the large mining establishments.

However, despite all the aforementioned positive contributions of mining to Uganda's development, it must be noted that the extraction of minerals has negative impact on both the local community and the natural environment. This is reiterated by Hinton et al that "the potential for the minerals sector to foster sustainable livelihoods development poses unique constraints and opportunities at the same time" (2011:2). The Organization for Economic Co-operation and Development (OECD) has also noted that "companies involved in mining and trade in minerals have the potential to generate income, growth and prosperity, sustain livelihoods and foster local development; yet they may also be at risk of contributing to or being associated with significant adverse impacts, including serious human rights abuses and conflict" (2013:12). The next subsection therefore discusses the contribution of mining to the state of environmental crisis in Uganda.

5.2 Contribution of mining to environmental crisis in Uganda

A number of scholars have noted that mining has and continues to be widely criticized for its harmful impact on the physical and natural environment as well as human rights violations

particularly through the use of too much police and military forces, damage to the local communities and indigenous populations, forced labor and involuntary servitude, as well as bribery and corruption (Abrash, 2001:38; Kapelus, 2002:75; Treadgold, 2005:39). In Uganda, there are similar concerns regarding the impacts of mining on the country's natural environment and the local communities. It should be noted that in as much as mining is a potential source of wealth, irrespective of the scale of operation, it has some degree of negative impact on both the physical and social environment unless it is properly managed. Nick Middleton traces the concerns about the impact of mining on the environment as far back as 1556. He notes that this period witnessed Georgius Agricola, author of the world's first mining textbook arguing against detractors in sixteenth century Germany. Middleton notes that little seems to have changed in more than 400 years since Agricola who wrote:

The woods and groves are cut down, for there is need of an endless amount of wood for timbers, machines and the smelting of metals. And when the woods and groves are felled, then are exterminated the beasts and birds, very many of which furnish a pleasant and agreeable food for man. Further, when the ores are washed, the water which has been used poisons the brooks and streams, and either destroys the fish or drives them away (1999:240)

This excerpt indicates the long-standing negative environmental impacts of mining from both the input and output sides. From the input side, the consumption of minerals causes environmental damage and ecological disruption. From the output side, mining generates air pollution, water pollution and hazardous waste all of which are harmful to the other components of the environment such as flora and fauna, birds, fish and humanity. In Uganda, the mining sector has contributed to the current state of environment crisis in a number of ways some of which are discussed below.

5.2.1 Land degradation

Land degradation has been defined by Sserunkuuma, Pender and Nkonya as the change in vegetative cover or topographic features as well as physical, chemical or biological degradation of the soil leading to decline in the capacity of the land to provide valuable environmental goods and services (2001:8). With regard to mining, land degradation is a common phenomenon at not only the uncontrolled, unmonitored small-scale mining sites but also large scale mining sites. Aryee, Ntibery, and Atorkui note that “miners leave behind *moonlike* landscapes consisting of unstable piles of waste, abandoned excavations and vast stretches of barren land”. Excavated pits are

typically left unfilled and abandoned to become receptacles for water. Such areas become breeding grounds for mosquitoes and potential dangers to both humans and animals (2003:135). A walk through Uganda's mining areas, especially those where small scale mining is taking place shows a number of abandoned pits. During the rainy season, the abandoned pits are filled with stagnant water. In addition to the pits being breeding grounds for mosquitoes and potential dangers to animals, they have interfered with the aesthetic beauty of the landscape. There have been instances where people, especially children, have drowned in the abandoned pits.

Furthermore, because many miners operating on small scale do not backfill the pits, restoration of top soil is very difficult and this worsens the problem of soil erosion in the mining areas. More still, large tracts of agricultural land are also destroyed as a result of excessive vegetation removal and disturbance of soil structure. Aryee, Ntibery, and Atorkui note that growth supporting top soil is very often removed during the mining processes, leaving the land bare and practically not able to support vegetation/ plant growth,. This is coupled with exposing the area to erosion (2003:135). Soil erosion in Uganda is on the increase. In their study on land management in Uganda, Sserunkuuma, Pender and Nkonya found soil nutrient losses in the country to be among the highest in sub-Saharan Africa, contributing to low agricultural productivity, unsustainable land use and poverty in Uganda (2001:3). Mineral extraction exhausts the soils, especially when soil nutrients are eroded following rains. Lack of proper soil nutrients affects plant growth and the fact that Uganda is predominantly an agricultural economy with over 80% of the population employed in agriculture (Senyonyi, 2013), means that majority of the people cannot raise enough food for home consumption. This obviously has implications for food security in the country and also affects people's income levels.

NEMA notes that the inefficient and poor technologies used in the extraction of copper at Kilembe mines have left scars that are still visible on to the landscape several years after closure of mining operations in the area (NEMA, 2004:104). Walking through the obsolete Kilembe copper mines, one observes the degraded landscape and abandoned excavations almost thirty years after the closure of the mines. It has also been noted that poor technologies are used in lime extraction which is done by the burning of limestone. For instance, the National Environmental Management Authority indicates that "most of the kilns used are inefficient and of poor quality, leading to consumption of significant quantities of fuel wood that has resulted in some localized

deforestation”. NEMA also notes that open cast mining is the most commonly used methods of gold mining. Open cast mining is associated with leaving behind large gaping pits as well as huge tracts of land cleared of vegetation (NEMA, 2004:105). Such poor technologies employed in Uganda’s mining sector aggravate the environmental problem in the country by contributing to deforestation and land degradation especially where there are no efforts to reclaim such areas.

5.2.2 Pollution

Heavy metal pollution is one of the major problems associated with mining. Nick Middleton argues that:

Many mineral tailings contain metal ores and other contaminants formerly locked up in solid rock, which can be leached into soils and waterways, and blown into the surrounding atmosphere. Such reactions with air and water produce sulphuric acid, and lower the pH values of waterways. Acid mine drainage is not just a problem of operational workings, but may continue as a pollution source for some years after mine closure (1999:245).

This is evident in Kasese district in South Western Uganda where “stockpiles of copper left behind after the closure of Kilembe mines over thirty years ago are producing a steady flow of contaminants that are draining into nearby water bodies” (Ongedo and Nalubega, 2014:9), particularly Lake George and River Nyamwamba.

A study by United Nations Development Programme indicates that the nature of handling and disposing of mine tailings, especially the potentially toxic, is still poor in Uganda. The study reveals that over 15 million tonnes of cobalt-ferrous pyrite concentrate stockpiles were produced by the once vibrant mines between 1956 and 1982. With regard to oxidation, UNDP further notes that “the pyrite produced sulphuric acid and heavy metals that corroded the environment and resulted in a scorched /erosion trail of about 150 hectares in the Queen Elizabeth National Park which affected the growth and development of plant and animal life in the park” (UNDP, 2005). Ongedo and Nalubega further note that:

The problem of pollution has intensified, as River Nyamwamba regularly bursts its banks, dissolving bits of the heaps of stockpiles and washing it away. In addition, water from the deep underground tunnels has been oozing out of the mines, carrying with it dissolved minerals into the river. Thousands of Kasese residents who do not have piped water depend on

River Nyamwamba and hundreds others eke out a living as fishermen on Lake George, River Nyamwamba's final destination (2014:9).

This quotation illustrates the gravity of pollution resulting from mining operations in Uganda. It also points to the laxity in enforcing environmental legislations by the authorities. Uganda has well written environmental and mining legislations clearly indicating the need for proper disposal of mineral waste. One wonders why the mining companies responsible for such pollution are not paying for the impact of their activities on the environment, especially if we are to consider the "polluter pays principle". Instead, it is the local people who are suffering the adverse effects including undermining their livelihoods (fishing). The study therefore argues that proper disposal of mineral waste should be prioritized by both the investors and government. This can then aid lower the health risks associated with poor disposal of mineral waste.

Another study conducted by Oryem-Origa, Makara and Tusiime reveals that following the stockpiles discharged into river Nyamwamba, there has been a change in colour of the (river) water to greenish-blue. The greenish-blue coating has been observed on some of the rocks in the bed of the river. Upon testing "tissues of the plants growing on and around the dumped stockpiles it was discovered that they have three times more copper and cobalt than plants growing in other areas" (2007:84-90). The fact that river Nyamwamba is a source of water and yet it also drains into lake George which is a source of food, obviously has implications for the both human and aquatic health. When the surrounding vegetation absorbs the toxic chemicals, there are health threats not only to the animals that feed on the vegetation but also to micro-organisms and humans. This is an indication of the lack of clear policy on the treatment of water that flows from the Kilembe mine into the water bodies as well as policy on clean up after mine closure. Elsewhere, poor disposal of mineral waste has been reported in the Albertine graben where some oil mining companies have buried the waste on the local residents' pieces of land. This was revealed during a study conducted by Oil in Uganda in Ntoroko district.⁵² The early exploration of oil by Heritage left mud cuttings, drill cuttings, and other hazardous wastes untreated, risking contamination of underground aquifers

⁵² Several cases were reported by Oil in Uganda of residents complaining that the poor disposal of oil waste by oil companies is responsible for death of animals in Rwebisengo Sub-County, Ntoroko District. <http://www.oilinuganda.org/features/environment/my-cows-were-killed-by-oil-waste.html#more-3544> Saturday, 23rd November 2013 | Companies, Environment, Social impacts

(Auge and Nakayi, 2013:14). Since Heritage no longer operates these concessions anymore, this means that the costs for clean-up may be charged to the Government.

Mining in Uganda has also led to siltation of rivers and “wildcat pitting” causing localized degradation of soil and vegetation. A study by Alliance for Responsible Mining (ARM) shows that in many mining areas of Uganda, mining activities have cumulatively impacted downstream through siltation, thereby producing health and safety threats for both animals and humanity as well as hindering “post-mining agricultural use” (2011:7).⁵³ Siltation not only pollutes the water resources but also severely affects the riverine ecosystem. Unless caution is taken in the extraction of minerals to avoid siltation of water resources, Uganda may become a water deficient nation in the near future. This would distress not only its ecology but also the economy and all the life support systems. The Convention on Economic Social and Cultural Rights (CESCR) notes that “a violation by state parties due to pollution and diminution of water resources adversely affects health” (CESCR, 2002).

Atmospheric pollution especially through gas flaring is another impact of Uganda’s mining sector on the environment. Saheed Ismail and Ezaina Umukoro’s study indicates that gas flaring is one of the greatest energy and environmental problems that the world is currently facing. Its impacts are of both local and global concern, but it has persisted for decades and continues on a significant scale internationally despite various initiatives, codes of conduct, laws and agreements to halt it (2012:290). Flaring is believed to damage the environment through emission of greenhouse gases into the atmosphere such as carbon di-oxide, methane and other forms of gases. These gases are known to contribute to global warming causing climate change which then affects the environmental quality and health in the vicinity of the flares (Malumfashi, 2007:1). The use of gas flaring refutes the commitments made by countries under the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol to reduce their greenhouse gas emissions.

Gas flaring in Uganda is done especially during the testing of oil samples in the Albertine graben. It has been provided for in the contracts between the government and the mining companies, despite its negative impacts. For example, the contract between Tullow Oil and the Ugandan

⁵³ This is most evident in mining areas of “Buhweju, Kaabong, Napak and, to a lesser extent, Moroto Districts”(ARM, 2011:7)

Government awards the companies a legal right to flare gas, prior to any impacts assessments. More dangerously, if the company needs to, gas “may be flared with the consent of the Government, which consent shall not be unreasonably withheld or delayed” (Tuja, 2010). In the contracts, Government’s consent to gas flaring must not be delayed. “The Government of Uganda’s consent to gas flaring should be determined by the likely impact on local and wider communities and environment, and not be limited to consent not unreasonably withheld or delayed” (Tuja, 2010). This study argues that the environmental impacts of flaring should have been considered in the signing of the contract and that the oil companies should incur the economic costs of flaring to ensure that appropriate technology is used to capture, store, transport and use the gas.

5.2.3 Biodiversity and habitat loss

It is argued that while mining generates needed income for rural communities, it is also a serious and growing threat to biodiversity, ecosystems and the integrity of protected areas (Villegas et al., 2012). Mineral activities in Uganda have led to interference with the normal movement routes of animals as well as their breeding grounds and habitats. As a result, ecosystems face direct competition from mining operations. For instance, in the Albertine graben, the oil mining areas are areas of rich biodiversity. With the ongoing mining activities in the area, some habitats have been interfered with. The National Environmental Management Authority notes that habitat fragmentation is “an emerging issue from the oil industry since it eliminates connectivity between natural habitats negatively impacting on wildlife movements and eventually leading to species becoming endangered or extinct” (NEMA, 2010:110). A study by Alliance for Responsible Mining shows that in endangered areas where intermittent mining is taking place such as Bwindi Impenetrable Forest and Kashoya-Kitomi Central Forest Reserve, concerns are made with regard to the increasing impacts of mining activities on these ecosystems (ARM, 2011:7). The noise emanating from drilling scares animals and forces them to relocate to relatively quiet areas. Habitat fragmentation is a major factor leading to loss of biodiversity which is an important component of the environment.

The above threats to the environment indicate the investors’ failure to conserve the environment during the mining process. They also point to the failure of the Ugandan Government to hold investors accountable for the environment degradation accruing from their activities. The African

Charter on Human and Peoples' Rights provides that "all peoples shall have a right to a general satisfactory environment favourable to their development". Article 24 of the Charter further notes that "the right to a clean and safe environment is critical to the enjoyment of other human rights" (ACHPR, 1981:7)⁵⁴. This implies that the Government of Uganda is obligated to undertake practical measures to avert pollution and any form of ecological degradation, in order to enhance environmental conservation and to promote an environmentally sustainable development through the use of its natural resources.

It is also important to note that mining does not only impact development and the natural environment as discussed in the previous subsections but it also leads to the emergence of social problems for the local communities. The next section therefore discusses the social problems associated with the mining sector in Uganda.

5.3 Social problems associated with the activities of investors in Uganda's mining sector.

This section discusses the impact of Uganda's mining sector on society, particularly the miners and the local communities within the mining areas. The major social problems are elaborated below.

5.3.1 Occupational Health hazards

According to a study by the International Labour Organization, artisanal and small scale mining "is one of the most occupationally hazardous activities in the world" (ILO, 1999). Scholars such as Carolyn Stephens and Mike Ahern support this view. They argue that in addition to "injuries and fatalities from accidents, miners experience high rates of cancer, respiratory illnesses and other diseases" (2001:25-28). A study conducted by Okimait, Isingoma and Nsubuga in 2004 in the salt mining areas of Uganda revealed that miners reported "suffering from respiratory problems, eye irritation, skin diseases and sores. Hyper-pigmentation (lightening) of hair and skin was also reported by 90% of miners" (2004:15). An earlier study by Ddungu et al showed that "painful sores were found on most miners' bodies as a result of prolonged daily exposure to the highly

⁵⁴ Uganda ratified and signed the African Charter on Human and People's Rights on 10/05/1986 and 18/08/1986 respectively.

alkaline brine waters (pH above 9.5), combined with wounds caused by handling, hauling and walking barefoot across coarse rock salt” (Ddungu et al, 1990).

Furthermore, a study by Jennipher Hinton in the same area revealed that:

Miners described how painful wounds and sores were slow to heal due to painful and prolonged immersion in the salt water, in many cases amounting to several hours daily. Most contend that even large wounds typically go untreated as first aid treatment is not available. One of the most serious afflictions both psychosocially and physically that was repeatedly echoed during almost all interviews and focus groups was the damage to genitals and reproductive organs caused by prolonged immersion in salt water. Also claims of barrenness, miscarriages and severe stomach pains among women and deformed genitalia among men are widespread in the salt mining area. Some male miners use crude means of protection including old rubber tubes, socks and, in some instances, condoms to protect their private parts. In some cases, men use up to four condoms, which are stretched across both the penis and scrotum and secured with rubber bands, which they describe as painful as they say it can cut off circulation but seems to be, nevertheless, perceived by many to be better than the alternative. Women on the other hand have sought protection by packing their vaginas with cassava flour prior to entering the lake. Women and men both attempt to fashion protection by cutting leg-holes in plastic bags locally known as *buveera* and wearing them as undergarments (Hinton, 2011b:177).

The studies by Ddungu et al, (1990), Okimait, Isingoma and Nsubuga (2004) and Hinton, (2011b) all illustrate the difficulties and occupational health hazards that salt miners in Uganda are exposed to. A majority of the miners often cope by using strategies that compromise and undermine their wellbeing, with far reaching implications for themselves and the community. A critical look at the methods used by the miners indicates that they offer inadequate protection to the miners despite the fact that they continue to use them. Use of such crude methods clearly demonstrates the level of desperation encountered by the miners who cannot afford to buy protective gear and clothing. Such methods are also an attack on the dignity of the human person.

NEMA notes that workers in “underground and surface mines are often exposed to high noise levels, for example by drilling equipment, loaders, diesel locomotives and trucks” (NEMA, 2004). In situations where people are continuously exposed to intense noise levels, impairment of the hearing system may occur. Another study conducted by NEMA in 2006 indicates that localised vibration affects “workers leading to neurovascular alterations in the hands, bone alterations,

muscular weakness and muscle atrophy” (NEMA, 2006:105). To minimize the chances of such occupational hazards, investors ought to provide safety gear and equipment to the mine workers.

A study conducted by Hinton et al on mining in the Karamoja region shows that many local formal and informal leaders are bitterly critical of Tororo Cement Limited (TCL)⁵⁵. The study reported that TCL’s working conditions, especially at the site are very poor, and miners lack “protective personal equipment (PPE) such as ‘hardhats’, ‘safety goggles’ and ‘gumboots’” (Hinton et al, 2011: 28). Where the conditions of work are poor and there is a lack of safety gear, miners are exposed to occupational hazards which could affect their health. In any work environment, there should be standard operating procedures and it is the duty of the investors as well as the Government to ensure that companies follow the procedures. Many mining companies take advantage of the ignorance of the local population and exploit local community members who usually go to the mines desperately seeking employment. However, in as much the mining companies ought to be responsible for safety of their employees, it becomes complicated to ensure safety and protection for those individual artisanal miners who go to the mines on their own.

A study conducted by *Oil in Uganda* in Rhino Camp in the Albertine graben where Neptune Petroleum drilled a dry well in 2013 notes that:

Drill cuttings are spread on land that the local people cultivate. In an interview, the locals revealed that the drill cuttings are good fertilizers, noting that: “*We harvested four sacks of maize and sim-sim from this land where drill cuttings were buried.*” The oil drill wastes were tested during the preliminary stages from various laboratories in Makerere (Department of Chemistry and Geology) and Houston (Texas), and the reports indicated small amounts of lead and cadmium. These heavy metals can cause cancer and birth defects respectively (Nalubega and Ongode 2013).

This appears to point to the fact that the local communities are ignorant of the effects of the mineral waste on their lives. Although they look at the short term benefits, the long term consequences are potentially catastrophic. Could this be due to the fact that the Ugandan Government has not done enough to create awareness among its citizens about oil exploration and production as well as its implications on development, environment and society?

⁵⁵ Tororo Cement Limited is one of the large scale mining companies in Uganda involved in the manufacture of both cement and steel.

In 2012, Uganda's Parliamentary Committee on Natural Resources noted that mineral waste management and disposal had been a big problem in the Albertine graben prior to the production of oil production. The concerns of the committee were made as a result of the failure to safely dispose of mineral waste accruing from oil exploration activities. Waste from oil exploration activities was being stockpiled in temporary locations in "bitumen containers and polythene" (GoU, 2012:11). This is disastrous to the environment especially if the containers are not safely monitored. Prior to commencement of work on oil exploration, the Government of Uganda together with the potential investors should have had a proper waste disposal policy and mechanism in place to reduce the negative impacts that could emanate from the waste. This could help minimize environmental degradation in the area as well as the threats to human life. Moreover, the United Nations Report of the Special Rapporteur on the adverse effects of "the illicit movement and dumping of toxic and dangerous products and wastes" identifies a number of rights that have a bearing on environmental quality. They include:

The right to life; freedom from pollution, environmental degradation and activities which threaten life, health or livelihood; protection and preservation of the air, soil, water, flora and fauna; and healthy food and water; as well as a safe and healthy working environment (United Nations Economic and Social Council, 1994:44-49).

Another pilot study on extractive industries shows that:

The localized environmental impacts of mining have the potential to cause a variety of diseases in children including respiratory, skin and eye diseases. Children are more vulnerable to the localized environmental impacts of mining activity than adults particularly water, air and soil pollution due to their progressive and incomplete physical development; the fact that they spend more time playing than adults and hand-to-mouth behaviour that makes children more likely to ingest pollutants; and their varying stages of mental development, for example, inability to read hazard and warning signs (UNICEF, 2015:13).

The Government of Uganda therefore has a responsibility to ensure that investors adhere to the environmental standards in order to avoid environmental degradation resulting from development activities. This could then be one of the steps towards the protection of people's basic rights where present and future people are able to live with dignity.

5.3.2 Loss of property and displacement

Mining activities generally affect community members whose homes are located either within the mine's footprint or buffer zone. This results into loss of homes and other property as a result of displacements and relocation to other areas. The danger with displacements and relocations is that it causes “fundamental changes in family structures and social dynamics, and may make it harder for the family to support itself” (UNICEF, 2015:9). In a number of mining areas in Uganda, loss of property (especially land) and homes is a common occurrence. For instance, following oil exploration in the Albertine graben, a number of cases of people who have lost their property have been reported by the media. For instance, a study conducted by Patey shows that subsistence farming and fishing are principal activities for the local population in the Lake Albert region. However, people have been displaced and their property lost. The loss of communal lands to speculation and oil infrastructure has had a very huge effect on the local communities within the region (Patey, 2015:35). Agriculture and fishing being principle activities are a form of livelihood to majority of the local people. Therefore, where the local communities can no longer undertake them, their source of livelihood is undermined.

The loss of property to investors has been attributed to negative political relations between the Government and the locals (the people within the mining areas) especially in the Albertine graben. Many of the decisions with regard to oil and petroleum mining in the Albertine graben are made by the central government without the consultation of the lower local governments and even the local community. This has created tension between the central government and the lower government as well as between central government and the local communities. Golooba Mutebi argues that:

The impact of oil and petroleum mining on political relations has been negative. Local governments and ordinary people with whom they are meant to confer on a wide range of services under the law, are making fewer and fewer decisions, especially pertaining to issues affecting land tenure and ownership, as well as compensation for appropriated property (2013:8).

Media reports indicate that some residents have been “unfairly compensated for their property and claim that government agents are harassing them and coercing them into signing consent forms” (Ssekika, 2013; Ongode and Nalubega, 2014:2). Under international best practice, compensated land ought to “be of the same size, quality and yield as the land that has been appropriated. In cases

where such land is not available, impacted stakeholders are often offered cash compensation supported by alternative livelihood programmes” (UNICEF, 2015:15). A number of Non-Government Organizations (NGOs) have on several occasions united in support of the affected communities, condemning the way in which land evictions have been carried out and the insufficiency of “financial compensation packages”. However, a study by Human rights Watch shows that Non-Governmental Organizations engaged in educating the local communities about the significance of their property especially land and the community processes that ought to be followed as well as their compensation rights have encountered several difficulties. Government officials accuse such NGOs “of sabotaging government programs”, and threaten to deregister them and arrest the employees” (HRW, 2014:97). Government seems to protect the interests of the investors at the expense of those of its citizens. Appropriate, fair and lawful compensation should be practiced if people are to benefit from the oil and other mineral resources within their communities.

Children who head households together with their dependants are particularly defenseless and vulnerable to the threat of displacement and loss of property. A pilot study on extractive industries by UNICEF notes that “children are extremely vulnerable to displacement mainly because they are not considered to be ‘legal wards’ and are not entitled to separate compensation” (2015:9). This creates even more vulnerability and risks to the child headed homes especially where there are rival interests within the extended family and the broader community.

Another scenario of displacement and loss of property has been reported in Buseruka sub country in Hoima district. According to a study by Patey, the Government’s refinery resettlement plan in the area is intended to displace about 30,000 people. However, even though the processes of compensation and resettlement are underway, some local community members and Non-Government Organizations are already challenging eviction orders as a result of lack of transparency (Patey, 2015:35). A study by *Avocats Sans Frontières* reports that:

Residents from ten villages⁵⁶ within the area demarcated for the oil refinery and still awaiting compensation or relocation were instructed not to grow crops and even construct new or renovate temporary housing on the land. The residents complain about living isolated from each other in forested

⁵⁶ The names of the villages are “Bukoona, Kagera, Nyamasoga, Kabakeete, Nyahaira, Kyapuloni, Kitegwa, Katooke, Nyakasenini” (ASF, 2014:28).

areas that have become overrun with wild animals, as they can no longer clear the area for cultivation or cut the grass or surrounding bushes. This security issue has affected the residents' freedom of movement, as they are under constant fear of attack from buffalos, elephants and lions from the nearby game reserve (ASF, 2014:28).

Such situations make the presence of oil and mineral resources a curse rather than a blessing because instead of the residents benefitting from such resources, they instead live in fear.

Besides the Albertine graben, a study conducted by Human Rights Watch on the impact of mining activities on human rights in Karamoja indicates that:

Local populations have voiced serious concerns of land grabs, environmental damage, and a lack of information as to how and when they will see improved access to basic services or other positive impacts. This has been attributed to the fact that mining companies have disregarded the region's indigenous people's land rights, including fencing off swaths of land without the people's consent (HRW, 2014: 6-13).

Such injustices against the indigenous people are being committed amidst calls for investors to always seek consent from the local community where they intend to undertake mining activities. This quotation points to the fact that the local communities are not consulted by the investors. Investors/ mining companies remain adamant about securing free, prior and informed consent from the local communities especially before commencing operations on communal lands.

According to the UN Special Rapporteur on the rights of indigenous peoples, investors should “conduct due diligence to ensure that their actions will not violate or be complicit in violating indigenous peoples' rights, by identifying and assessing any actual or potential adverse human rights impacts of a resource extraction project” (Anaya, 2013:21). Consultation between Government, investors and the local communities would ensure participatory decision-making and would help prevent conflicts and misunderstandings, respect human rights and contribute towards sustainable development in the mining communities and the country at large. Meanwhile, Government and investors have provided inadequate or no information about the planned exploration and mining activities to the local communities. Coupled with the local communities' lack of awareness about their rights, many local people cannot adequately express their views regarding development projects on their lands. This undermines the peoples' right to development.

The United Nations Declaration on the Right to Development in Article 1 (i) notes that the “human being should be at the centre of development and should be the active participant and beneficiary of the right to development” (UNHR, 2011:11). The right to development is both “constitutive” and “instrumental”, and a violation of either the “procedural” or “substantive” component constitutes a violation of the right to development (HRW, 2014:39). The procedural element “requires active, free, and meaningful participation in development choices, free of coercion, pressure, or intimidation” (Sengupta, 2000:8). The substantive element on the other hand includes “benefit sharing, improving the capabilities and choices of people, and is violated if the development in question decreases the well-being of the community” (HRW, 2014:40). In the context of mining in Uganda, both the procedural and substantive elements seem to be undermined. Many local people do not seem to be actively involved in their own development, and are denied the right to be agents of their own development. At the same time, the benefits for the local communities are minimal since mining tends to decrease the wellbeing of the community given its adverse impacts on the environment which sustains humanity.

Section 59 of the 1998 Land Act provides for “compensation of people in the areas where minerals occur” (GoU, 1998). However, even where the residents are compensated, the complaints from land owners reported by media indicate that the compensation does not adequately compensate them for the loss of property. In the box below is an excerpt of the meeting which *Oil in Uganda* held with local residents in some of the areas in the Albertine graben where oil exploration is taking place. A significant number of similar cases have been reported elsewhere in Uganda, especially where large scale mining is taking place.

Figure 3: Excerpt on compensation for property in the Albertine

Compensation remains thorny issue in oil regions

Thursday, 7th March 2013

"We are frustrated since we have not received fair pay in compensation for our properties," complains Albert Wathum, a resident of Panyimur fishing village on the shores of Lake Albert in Nebbi District. He claims that since Total E&P began exploring in the area, many gardens and homesteads have been destroyed in the process of surveying, building access roads and constructing oil well pads. Residents expected compensation but, according to some, what they received was peanuts. "Usually, a grown mango tree can fetch up to 120,000 Uganda shillings (USD 46) but we are being given 80,000 Uganda shillings (USD 31). A cassava garden for instance acts like a source of food and income but is being compensated at only 120,000," according to Mr. Wathum, who sounds more frustrated than other locals in the village.

Equally bitter complaints are voiced by residents of Kabaale Parish, in Hoima District's Buseruka Sub-county, which sits on the 29 km² of land where the government plans to construct a state-of-the-art oil refinery. Locals complain that progress towards compensating them for land they will have to give up has been painfully slow and has meanwhile left them without any source of subsistence. "We were told not to carry out any activities on this land. We are not supposed to even grow crops that can sustain us," says Gideon Onyut, who recently returned to his home in Kyapaloni village, Kabaale Parish, after dropping out of Senior-2 studies at King's High School in Hoima. "I had to drop out of school because our only source of survival in this area is farming and since government halted all activities in the gazetted area, agriculture inclusive, my family does not have money to feed us and pay my school fees," Mr. Onyut explains. "Mr. Bashir Hangi (a communications officer with the government's Petroleum Exploration and Production Department) comes here and lies to us day in day out. He does not tell us the truth. Our own local leaders are also not helpful. They want something to be given to them in order for them to accord us the necessary help," claims the embittered 20-year-old.

Source: <http://www.oilinuganda.org/features/compensation-remains-thorny-issue-in-oil-regions.html#more-2633>

The fact that the compensation of property is valued and assessed by Government, in instances where the local residents' property is undervalued, it means that the residents will lack recourse options for redress, and as such will continue to live in desperation. Sometimes even after compensation, the local people cannot use the money to engage in productive livelihoods. This is echoed by Winnie Ngabiirwe in a study conducted in the Albertine graben that:

Despite the clear legal and policy requirements, communities are losing money through under valuation of their property. Furthermore, they lack adequate preparation on how to utilise their compensation money to do meaningful income generation. Since government halted all activities in the gazetted area, agriculture inclusive, women have abandoned cultivation and therefore they have no harvests to sell and earn an income. The fact that there are no new business skills being acquired; the locals are basically on a bus to greater poverty and increased crime rates. The citizens feel betrayed by their leaders, amidst cries for protection against land grabbers, and for environmental protection (2013: 8).

The law seems not to help people receive better compensation for their properties because Government as an enforcer of the law is at the same time undermining the law. Government is meant to protect its citizens but it seems to be failing in its mandate. This is unconscionable since it relegates local community members to the status of second class citizens. The implication is that

failure of Government to protect its citizens could result in people having little or no faith in such a Government. Furthermore, the Ugandan Government ought to pay attention to the needs of its people and provide them with business skills so that the communities are able to invest compensation money into other income generating activities that can guarantee them livelihood opportunities. Having meaningful livelihood options could help improve the general wellbeing of the people, reduce crime and also enable people to come out of poverty. When local communities do not trust the Government to address their concerns and protect them, the ensuing tensions could result into violence, as communities believe they lack other options for making their voices heard.

Another issue to note is that in many communities in Uganda, land is customary owned and often handed over from generation to generation. Problems may arise when displaced community members who do not hold formal or customary land titles recognized under the Land Act are permanently displaced. This may interfere with the bequest and “inheritance patterns for children, as compensation for the loss of land is often provided to a single generation and cash compensation is highly unlikely to be passed to future generations” (UNICEF, 2015:9). In such situations, children suffer most as they lose their land to investors.

Besides displacements by the Government and investors in mining communities, forced displacement is also a result of animal intrusion on people’s private property. In August 2014, *Oil in Uganda* published an article about elephants from Murchison Falls National park that were reported to be roaming outside the park and scaring residents of Purongo sub county in Nwoya district. It was alleged that the elephants were escaping noisy oil activities in the park. The elephants are said to have forced a number of families to leave their homes and relocate to the town center for safety and protection, leaving behind their gardens (Nalubega and Ongedo, 2014:2). An excerpt is presented in the box below.

Figure 4: Impact of mining activities on wildlife in Murchison falls National Park

<p>Murchison elephants scare away Nwoya residents August 2014</p> <p>According to Ojok David, the village local council chairman, it all started in 2009, almost spontaneously with the oil exploration in the national park. "For the last five years, elephants have disturbed us and people on the village have run away to the camps in the town," said Ojok. Himself a victim, Ojok revealed that his second wife relocated to the town center after being attacked by the elephants on three separate occasions. "She went and came back but when the elephants came again, she left for good. She told me she may never come back as long as the elephants are here," said Ojok. Another elderly woman in a nearby home told Oil in Uganda that her husband, children and grandchildren had all fled the area, leaving her by herself. "Me, I decided to stay here; since I am old, I don't fear death," she said. "Yes I have seen the elephants come here, two times, but I do not fear." According to the Nwoya District Secretary for Community Development, Fredrick Okecha, two people were killed by the elephants last year. He said the elephants had also been reported in the sub counties of Kochigoma and Anaka. "One of these people was a pregnant lady who was killed near the park where Total is drilling," he said. "We reported the case to UWA (Uganda Wildlife Authority) but to date, they have done nothing.</p>
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Source: Issue 9 August 2014: Don't Ruin It! pp.2 www.oilinuganda.org

At the time of the above study, Uganda was still in the oil exploration stage yet elephants were already running away from the noise. The production phase could worsen the problem because it involves laying pipelines and stressful levels of noise and vibration. This means that if drilling and vibration noise is not controlled within the mining areas, more animals may be forced to leave the gazette areas. At the same time, their danger to the local community may increase. Another issue that emerges is that oil exploration and production may not only disrupt biodiversity conservation efforts but also aggravate further the problem of displacement and loss of property as well as potential loss of life.

5.3.3 Conflicts and misunderstandings

In many parts of the country where large scale mining is taking place, there are conflicts between the government and the local people as well as between the developers (mining companies) and the local people. One of the areas is the Albertine graben where there is exploration and possible production of oil. The graben comprises mainly two sub regions (Acholi and Bunyoro). However a study conducted by Ongonde and Nalubega shows that the Acholi region officials are disappointed and frustrated with a number of issues involved in the exploration and production of oil in the area. They feel resentful arguing that "in as much as about 90% of the crude oil is going to be drilled from their region; the refinery and all other infrastructure are to be set up in

Bunyoro”⁵⁷. According to these officials, this is a “deliberate move” by the Ugandan Government to exclude them from the development (2014:20). In an interview with *Oil in Uganda*, the Acholi Technical Working Committee on Oil and Gas (ATWCOG) noted:

It turns out, for example, that the refinery in Hoima will get its crude oil largely from the Jobi oil field in Acholi... Now it turns out that the refinery in Hoima will get literally more than ninety percent of its oil from one oil field in Acholi. There are big wells like Jobi, Jobi East, Lye and Rii which are exclusively in Acholi. Then we have those that cut across Acholi and Buliisa in Bunyoro like Mpyo and Gunya. Yet the other entire (planned) oil infrastructure like the refinery, central processing facilities and the pipelines and pump stations are not in Acholi. Other than just piping of the oil for refining in Hoima and export, there is nothing planned for Acholi (Ongode and Nalubega 2014:20).

The above quotation raises ownership and exclusion conflicts and points to the lack of justice. It indicates that if all planning concerning oil is not handled properly, the oil resource in the area may become a curse to some people. The Acholi Technical Working Committee on Oil and Gas feels that they will receive few benefits from the oil resource and yet may incur most of the adverse effects since many of the wells in their region. As long as some people feel dissatisfied, resentment, animosity and hostility amongst the conflicting groups may be created. This could result into what is happening in some mining communities around the world. For example, in “the Madre de Dios Basin in Peru, where 9,500 of 15,000 families are dedicated to gold mining, conflicts with surrounding 43 indigenous communities are frequent” (Kuramoto, 2001:29) while in “Papua New Guinea, trespassing of artisanal miners onto tribal land is an ongoing source of violent conflict” (Susapu and Crispin, 2001:30). Where there are misunderstandings and conflicts, the local communities may block mining projects. In such situations, this could disrupt both foreign and local investments in the sector.

5.3.4 Militarization of the mining areas

In some mining areas in Uganda, the mines are guarded by armed security officers, especially in Karamoja and the Albertine graben where the Government has deployed the national army (UPDF)

⁵⁷ The exploration and production of oil in the graben seems to have been politicized. Government has been accused of tactfully creating districts so that they isolate the areas with oil. For instance, in the newly created district of Nwoya, there are more animals than people. The royalties will go to the district despite the fact that oil was discovered when Nwoya district was not yet established.

soldiers to provide security. In a study by Human Rights Watch, residents pointed to government soldiers denying people access to the land, an indication to them that Government had stolen their land. Community members who resisted the orders were shot down. For instance, at one of the mines in Kaboong district, five local artisanal miners were killed by government soldiers in 2013 (HRW, 2014:81). From the study, it turns out that the Government's interests lay in protecting the investors at the expense of the local communities. Meanwhile, Government ought to protect both the investors and the local community to ensure that both benefit from the mineral resources. The role of the army in the mining areas is an issue that demands serious scrutiny. One would wonder why armed military personnel would be hired to guard the mines and deter the local community members from accessing the mineral resources on their own land. This not only intimidates the local communities but also undermines their access and control to mineral resources on their own land.

5.3.5 Other social problems

Mining opportunities are meant to develop the areas where minerals are being extracted. However, in some areas such as Karamoja; they are instead exacerbating poverty. Karamoja is one the least developed regions in Uganda, despite the fact that it is one of the most endowed with minerals. A study by Fair Ventures Worldwide indicates that Karamoja “has the poorest development indicators in Uganda characterized with the highest poverty levels, malnutrition, and 82% of the population live on less than \$1 a day whereas the national rate is 31 percent” (Fair Ventures Worldwide, 2013). Another study by Mwesigwa notes that “minerals, especially gold, have brought frantic maneuvers from mining companies and powerful individuals in government who want to receive money from the precious resource” (Mwesigwa, 2014). Local communities are meant to benefit from the minerals but this seems to be far from reality despite mining laws and policies that require a given percentage of mining revenues be returned to mining areas. The local communities seem not to benefit. This could lead to feelings of frustration and desperation over the lack of improvement in their daily lives despite significant mining revenues generated.

Providing employment for local people is usually publicized as the key community benefit from mining operations. However, in some of the mining communities in Uganda, local labour practices are still problematic. In a study conducted by Human Rights Watch on mining in Karamoja region, local community members alleged that they were employed by East Africa Mining Company

informally without contracts. They also reported not receiving the wages that they were owed. Even those who received wages did not sign any record of their payments (HRW, 2014:55). This shows a lack of transparency and proper accountability, and could reflect that the managers were exploiting the labour of the local people. The report further notes problems in the treatment of employees at the mining centres. Community members reported incidences of witnessing “employees being fired, stripped of their uniform, and forced to walk home naked” (2014:55). Another study by Hinton et al notes that in Karamoja despite the dependence of many mining companies on artisanal miners for production, “there is no formal registration, recognition as employees or provision of identity cards for the workers” (2011: 28). Such practices are an infringement on the dignity of the person and illustrate the insensitiveness of investors towards the local people. Realistically, local people should be beneficiaries of mining job creation. When given jobs, they should be respected and treated with dignity because they possess inherent worth.

Concerns over appropriate, transparent and accountable use of mineral revenues have been reported in many mining areas within Uganda. In a study by Hinton et al, many stakeholders in Karamoja expressed doubt of getting any benefits from royalty shares. The study further noted that in instances where the royalties are given, some districts diverted the funds to other activities that are not elaborated in the district development plans, claiming that the funds were minimal (Hinton et al, 2011:38). This illustrates a lack of transparent accounting mechanisms on the use of royalties. There are no clear guidelines in place showing how royalties are to be used. With lack of proper accounting mechanisms, local communities may end up not benefitting from the minerals and yet they suffer the adverse impacts of mining.

The above raised issues elucidate and substantiate the claim that the environmental and social impacts of development activities are widespread and alarming. They also highlight the notion that the more humanity engages in development, the more humanity has become insecure. As a result, the social, economic and environmental challenges discussed can be viewed as social and moral issues rather than merely scientific.

On the whole, the above mentioned impacts of mining on the society show that there is a lack of responsibility for the demands of local communities in mining areas. This is manifested in the Government’s unwillingness to find long-term solutions for social issues affecting the local

communities. This undermines ethical goals of development of life sustenance, esteem and freedom echoed by Denis Goulet. He notes that:

Development must be able to prolong men's lives and render those men less 'stunted' by disease, extreme exposure to nature's elements, and defenselessness against enemies; ensure that all human beings in all societies feel the necessity for respect, dignity, honor and recognition; and thirdly, development ought to free humans from all servitudes (1975: 87-88; 1995: 41-50).

Looking at the aforementioned contributions of mining to environment and the society, the three ethical goals of development are undermined. For example, many people in the mining communities as well as the miners have been stunted by disease as a result of environmental pollution, poor working conditions and exposure to work hazards; there is lack of respect dignity, honor and recognition for the local people evidenced through lack of local participation and lack of justice; and the majority of the local people are still under servitude working for the investors under extreme conditions yet benefiting less from their labour.

5.4 Conclusion

The chapter has discussed the contribution of Uganda's mining sector to development, environment and the local communities where mining activities are undertaken. It has identified that mining presents unique opportunities and challenges. From the discussion, it is clear that there are more negative effects of mining compared to the positive impacts. Some of the positive impacts include revenue generation, employment creation, economic diversification and infrastructure development. Some of the negative effects include: land degradation, pollution, biodiversity loss, loss of property and displacement - all of which contribute to the violation of human rights of the local communities. It is also clear from the discussion that the communities within the mining areas suffer most from the negative impacts of mining because they have no voice in the decisions of the various mining projects. As a result, many people in the mining areas seem dissatisfied with the activities of investors. The Government also seems to have failed in its duty to protect its citizens. If Uganda's mining sector is to benefit the country, particularly the local communities, it ought to be done with the full endorsement and backing of the local communities. This implies that the mining sector must uphold and respect local communities' right to free, prior, and informed consent, right to a healthy and clean environment, the right to property, the right to health and the

right to better working conditions as well as allow local communities to participate in decision-making on a continuing basis. Moreover, many mining companies in Uganda seem to ignore the environmental policies and regulations. These policies and regulations form part of the Government's mechanisms to respond to the environmental crisis in the country. A comprehensive framework for the Government's response to the environmental crisis is presented in the next chapter.

CHAPTER SIX: GOVERNMENT'S RESPONSE TO THE ENVIRONMENTAL CRISIS IN UGANDA

6.0 Introduction

The previous chapter presented the contribution of Uganda's mining sector to development, state of environment crisis and the people, particularly local communities. It demonstrated that in the exploitation and extraction of the country's mineral resources, there are more negative impacts compared to the positive contributions. Investors seem to ignore people's rights to a clean, safe and healthy environment in addition to other social problems. At the same time, the Government also seems to be non-responsive to the complaints raised by the citizens. However amidst this, the Government of Uganda does have mechanisms and systems in place to address the environmental crisis. The current chapter therefore discusses the Government's response to the environmental crisis. It is divided into three major sections. The first section presents Uganda's environmental regulatory framework. The second section presents the environmental impact assessment in Uganda and the third section presents environmental education and awareness methods in Uganda.

6.1 Uganda's Environmental Regulatory Framework

Before 1986, Uganda did not have "recognized institutions" to ensure protection of the environment as well as promote sustainable use of its natural resources. However in 1986 after seizing political power, the National Resistance Movement (NRM) developed "a well laid out vision for environmental management and sustainable use of the country's resources" (Rutangye, 2005:6). In order to protect, manage and promote sustainable and efficient use of natural resources, the Government of Uganda put in place an institutional, legal and policy frameworks. In addition, Uganda has also signed and has ratified a number of international environmental conventions and agreements. The environmental laws, conventions and policies are aimed at imparting a certain practice of morality among the people, thereby enhancing the standards of a given society regarding the environment. Claire Palmer states that "environmental laws rest on popularly held values concerning the ways in which humans should act in their natural and living environments" (1997:113). There is no doubt that environmental legislations and policies can control the conduct or behavior of society towards the environment, especially if they are adequately applied and enforced. This section therefore presents a discussion of Uganda's environmental regulatory

framework. It discusses the environmental institutions in Uganda; the environmental laws and policies; and finally the International Conventions and Agreements to which Uganda is a party and signatory.

6.1.1 Environmental Institutions in Uganda

6.1.1.1 Ministry of Water and Environment (MoWE)

In Uganda, the Ministry of Water and Environment (MoWE) is the principal government institution entrusted with the complete responsibility of the environment resources. The Ministry of Water and Environment is mandated to “promote and ensure rational and sustainable utilization, development, effective management and safe-guard of water and environment resources for social welfare and economic development”. In executing this mandate, the Ministry of Water and Environment extends its mandate to three autonomous agencies: National Forest Authority (NFA), the National Environmental Management Authority (NEMA), and the National Water and Sewerage Cooperation (NWSC). Each of these agencies has a responsibility towards regulatory functions and activities within their respective sectors (MoWE, 2012).

6.1.1.2 National Environmental Management Authority (NEMA)

The National Environment Management Authority (NEMA) is the cornerstone of environmental management in Uganda. NEMA was established in 1995 under the National Environment Act “as the overarching agency entrusted with sustainable management of the environment in Uganda”. According to the National Environment Act, the roles and functions of NEMA include “co-ordination of the implementation of government environment policy; integration of environmental concerns in overall national planning; liaising with the private sector, intergovernmental organizations, non-governmental agencies and governmental agencies of other States on issues relating to the environment; proposing environmental policies and strategies in the country; initiating legislative proposals, standards and guidelines on the environment; promoting public awareness about environmental issues in formal and non-formal education; undertaking research and disseminating information about the environment; and mobilizing, expediting and monitoring resources for environmental management” (GoU, 1995a: Cap 153 (4)). A review of NEMA’s roles shows particular values and ethical positions that ought to inform development and environment

related processes and projects in Uganda through inculcating a sense of morality that would stimulate and engender ethical commitment and regulate human conduct towards the environment.

6.1.1.3 National Forestry Authority (NFA)

The National Forestry Authority was established in 2004 under the National Forestry and Tree Planting Act (2003). According to the National forestry and Tree Planting Act, NFA is charged with the duties of “developing and managing all central forest reserves; identifying and recommending areas for declaration as central forest reserves; promoting innovative approaches for local community participation in the management of central forest reserves; establishing procedures for the sustainable utilization of Uganda’s forest resources by and for the benefit of the people of Uganda; controlling and monitoring industrial and mining developments in central forest reserves; carrying out research for the purposes of conservation, development and utilization of forests, and for the conservation of biological diversity and genetic resources; and training of forestry officers and other public officers in the development, and sustainable management of forests” (GoU, 2003).

6.1.1.4 Uganda Wildlife Authority (UWA)

Uganda Wildlife Authority was created in 1996 under the Uganda Wildlife Act Cap 200 after the merger of Uganda National Parks and the Game Department. According to the Uganda Wildlife Act, UWA’s mandate is “to ensure the sustainable management of wildlife conservation areas; developing and recommending policies on wildlife management to the Government; coordinating the implementation of government policies in the field of wildlife management; identifying and recommending areas for declaration as wildlife conservation areas; establishing management plans for wildlife conservation areas and for wildlife populations outside wildlife conservation areas; establishing policies and procedures for the sustainable utilization of wildlife by and for the benefit of the communities living in proximity to wildlife; controlling and monitoring industrial and mining developments in wildlife protected areas; controlling, developing and licensing the development of tourist facilities in wildlife protected areas; promoting the conservation of biological diversity ex situ; promoting scientific research and knowledge of wildlife and wildlife conservation areas; and promoting public education and awareness of wildlife conservation and management” (GoU, 1996).

6.1.1.5 District and Local Environment Committees

The National Environment Act obligates NEMA in consultation with the District Council⁵⁸ to set up a District Environment Committee (DEC). according to the National Environment Act, the functions of the District Environment Committees include “coordinating the activities of the district council relating to the management of the environment and natural resources; ensuring that environmental concerns are integrated in all plans and projects approved by the district council; assisting in the development and formulation of byelaws relating to the management of the environment; promoting the dissemination of information about the environment through education and outreach programmes; coordinating with NEMA on all issues relating to environment management; coordinating the activities of local environment committees in the management of the environment; and preparing district environmental reports. At Lower Local Governments⁵⁹, these functions are performed by the Local Environment Committees” (GoU, 1995a: Cap 153 (14)). With the District and Local Environment Committees well facilitated and trained, it is possible to strengthen environmental conservation efforts at the lower and grassroots levels rather than from central government.

6.1.2 Environmental laws and policies in Uganda

Uganda has a comprehensive legal and policy framework for promoting environmental protection and conservation. According to Sam Tindifa, “the framework seeks to integrate environmental concerns in the socio-economic development planning of the country. It recognizes integrative environmental management as the most viable approach for achieving the overall policy goal of sustainable socio-economic development which maintains and enhances environmental quality and resource productivity, to meet the needs of present and future generations” (Tindifa, 2001). In this subsection, the study presents some of Uganda’s environmental laws and policies.

⁵⁸ District Council refers to the “Higher Local Government administrative and technical committee charged with the duty of planning for a particular district” (Local Government Act Cap 243)

⁵⁹ Lower Local Governments refers to the “local councils set up at the lower level i.e. municipality, town, division and sub county” (Local Government Act Cap 243)

6.1.2.1 National Environment Action Plan (NEAP) and National Environment Management Policy (NEMP)

Between the years 1991-1994, the Government of Uganda developed a National Environment Action Plan (NEAP) and the National Environment Management Policy (NEMP). The major objective of the NEAP was to provide a framework for tackling gaps with regard to environmental management as well as an approach for incorporating environmental concerns into national socio-economic development. Subsequently, the NEMP was passed in 1994 as an outcome of the NEAP (Akello, 2007:22). The National Environment Action Plan and the National Environment Management Policy aim at:

Promoting sustainable social and economic development, which maintains and enhances environmental quality and resource productivity on a long-term basis to meet the needs of the present generation without compromising the ability of future generations to meet their own needs. It also offers approaches to guide and assist decision makers and resource users in determining priorities in the national context and also at the sectoral, private sector and individual levels. It further provides for integration of environmental concerns in national socio-economic development planning processes, avenues for inter-sectoral co-operation, and comprehensive and coordinated environmental management (GoU, 1994).

The policies acknowledge the importance of environmental protection in the social and economic development of the country. Akello notes that “since the formulation of NEMP, environmental management has become a key criterion for national socio-economic development decisions” (Akello 2007:22). NEMP provided a foundation for the development of subsequent policies, laws and strategies for ensuring sustainable development. The Uganda Vision 2040 lists the following as some of the policies whose foundation is based on the NEMP. They include: “Environmental Impact Assessment Resolutions (1998); Water Policy (1999); National Wetlands Management Policy (1999); Wildlife Policy (1999); Fisheries Policy (2000); Uganda Forestry Policy (2001); Energy Policy for Uganda (2002); National Fisheries Policy (2003); Uganda Food and Nutrition Policy (2003); National Agricultural Research Policy (2005); Renewable Energy Policy (2007); National Oil and Gas Policy (2008); National Land Use Policy (2010); Disaster Preparedness and Management Policy (2011); and Urban Policy (2011)” (GoU, 2013).

In addition, the NEMP also provided a basis for the formulation of a comprehensive environmental legal framework under the 1995 Constitution and the 1995 National Environment Act. The National Environment Management Policy further provided a background for a number of “multi-sectoral” approaches to management of natural resources (GoU, 1994). These approaches are manifested in the various environmental and development legislations such as the National Forestry and Tree Planting Act with “a provision on environmental impact assessments” (GoU, 2003); the Land Act (1998); the Investment Code Act Cap 92, Section 19(1)(d) which obligates “every holder of an investment license to take necessary steps to ensure that the operation of their business enterprise does not cause any injury to the ecology or the environment” (GoU, 1991); the Uganda Wildlife Act particularly sections 14, 15 and 16 which “provide for environment impact assessments (EIA), audits and monitoring of projects that may have an impact on wildlife” (GoU, 1996); the Mining Act, sections 108 to 112 which compel investors in the mining sector to “conduct environmental impact assessments, environmental audits, environmental protection standards, environmental restoration plans and environmental performance bonds” (GoU, 2003); and the Local Government Act Cap 246, particularly the second schedule which “outlines environmental management areas for which district councils are responsible” (GoU, 1997).

The NEAP and NEMP are critical policies for Uganda because they elaborate on the implementation of the national environmental policy in its totality. However, it must be noted that since the preparation of the NEAP and NEMP in 1994, a number of environmental problems have emerged while others have intensified. For instance, climate change has intensified while modern biotechnology, electronic waste, biofuels and alien species have emerged. Being cognizant of the adverse impacts of these challenges to the environment implies that the NEAP and NEMP should be revised to address emerging environmental issues. The Government also needs to devise ways of enforcing the NEAP and NEMP.

6.1.2.2 National Constitution (1995)

The 1995 Constitution is the supreme law governing Uganda. It spells out issues of “environment, good governance, social and economic development, rule of law, as well as fundamental freedoms” among other things. Some of the provisions for environment conservation include: the “role of the State in development” (Objective XI); the “important role of the State in protecting

natural resources of all forms on behalf of the people/ public trust doctrine”⁶⁰ (Objective XIII); the “responsibility of the State to provide clean and safe water” (Objective XXI); and the “role of the State to promote sustainable development and public awareness in the management and utilization of natural resources in order to meet the development and environmental needs of present and future generations of Ugandans” (Objective XXVII) (GoU, 1995b).

In fulfilment of the objectives under the National Environmental Management Policy (NEMP), Article 39 of the Constitution of Uganda provides for the “right to a healthy and clean environment” as well as the “duty to maintain such an environment”. The implication of this is that any action (whether deliberate or not) leading to environmental degradation constitutes a “violation of the human rights to life, health and livelihood”. Further, Article 245 states that “Parliament shall, by law, provide for measures intended to protect and preserve the environment from abuse, pollution, and degradation; manage the environment for sustainable development; and promote environmental awareness” (GoU, 1995b). A review of the abovementioned constitutional provisions shows that the protection of the environment is recognized in law, as both a right and responsibility, for the benefit of humans and the natural environment of present and future generations. In the context of mining therefore, any resultant adverse effects on the environment would harm the environmental resources thereby affecting both present and future generations. This would undermine the Constitutional duty of the State and citizens to protect the environment. Consequently, it would compromise the realization of the right to a clean and healthy environment which is indeed the right to life.

6.1.2.3 National Environmental Act (NEA) 1995

Particular to the environment, the National Environment Act was enacted in 1995. The NEA is the basic national charter for the protection of the environment in Uganda. It is a “comprehensive environmental framework legislation” (Twinomugisha, 2007:244)⁶¹ which seeks to address constraints and problems affecting environmental management and conservation in Uganda. The

⁶⁰Objective XIII” enshrines the public trust doctrine and provides that the government holds in trust and protects for the common good of all citizens of Uganda certain environmentally sensitive areas such as natural lakes and rivers, ground water, natural ponds and streams, wetlands, forest reserves, national parks and any other land reserved for ecological and touristic purposes” (GoU, 1995)

⁶¹ According to Twinomugisha, framework legislation “lays out major environmental standards and leaves details to subsidiary legislation” (2007:244).

National Environment Act spells out the “principles of environmental management and the rights to a decent environment; institutional arrangements; environmental planning; environmental regulations; environmental standards; environmental restoration orders and environmental easements; records and inspection”. Section 3 (1) guarantees “every person the right to a healthy environment”, while Section 3 (3) obliges “every person to maintain and enhance the environment and inform the National Environment Management Authority (NEMA) or the local environment committee of all activities or omissions that may be deleterious to the environment”. Section 20 (3) provides “a system of EIA and environmental monitoring so that adverse environmental impacts can be foreseen, eliminated or mitigated” (GoU, 1995a).

Section 27 calls for “establishing standards for discharge of effluents into water”; Section 29 calls for “establishing standards for the control of noise and vibration pollution”; Section 37 provides for “establishing guidelines for the identification and sustainable management of all wetlands in Uganda”; and Section 54 provides for “management of hazardous waste” (GoU, 1995a). A critical review of the National Environment Act shows that it is intended to foster and promote positive action towards environmental protection. Such positive action can enable policy makers to make resolutions and decisions that are grounded on a comprehension of environmental consequences, and embracing efforts that protect, restore and enhance the natural environment.

6.1.2.4 The Uganda Wildlife Act

The Wildlife Act was enacted in 1996. The Act provides for sustainable management of wildlife and consolidates the law relating to wildlife management in Uganda. It places ownership of all wildlife in the country in the hands of the State on behalf of, and for the benefit of, the people of Uganda. (GoU, 1996). In order to ensure that government policy is not frustrated, the Wildlife Act requires “a management plan to be prepared for each wildlife protected area, compliance with statutory requirements by the community in the management of wildlife and carrying out of environmental impact assessments as well as environment audits and monitoring which augurs well for biodiversity conservation and its sustainable use” (NEMA and MoWE 2009:56). Such efforts are intended at saving the country’s wildlife (especially endangered wildlife) from extinction.

6.1.2.5 The National Forestry and Tree Planting Act (2003)

The National Forestry and Tree Planting Act was assented on 17th June 2003 and came into commencement on 8th August, 2003. It is aimed at “consolidating the law relating to the forest sector and trade in forest produce; establishing a National Forestry Authority; and repealing the Forests Act, Cap. 147 and the Timber (Export) Act Cap. 151. The Act provides for the: conservation, sustainable management and development of forests for the benefit of the people of Uganda; declaration of forest reserves for purposes of protection and production of forests and forest produce; sustainable use of forest resources and the enhancement of the productive capacity of forests; and the promotion of tree planting” (GoU, 2003). Forest resources are in high demand, and if the use of forests is not controlled, the supply of such resources in the future may no longer be possible. Therefore it is in the public interest that the Government manages the country’s forest resources based on a comprehensive assessment of present and anticipated uses, demand for, and supply of forest resources.

6.1.2.6 The Local Government Act (Cap 243)

The Local Government Act “consolidates and streamlines the existing law on local governments in line with the Constitution to give effect to the decentralization and devolution of functions, powers and services”. It further puts emphasis on “community-based natural resources management”. This is attributed to the fact that there is “a common consensus that communities and community-based institutions are better positioned to both respond and adapt to locally specific social and ecological conditions and to represent local interests and preferences” (GoU, 1997). Consequently, District Environment Committees have been put in place in all districts and District Environment Officers have been recruited by the Local Governments. According to the Act, “every district must have a District Technical Planning Committee to ensure that environmental concerns are integrated into development programmes”. In addition, through the devolution of powers to the Local Governments, the Act allows for local legislation in the form of by-laws and ordinances aimed at environmental conservation (GoU, 1997). The ability to pass by-laws and ordinances at the lower levels offers additional flexibility for strengthening the regulatory framework for the conservation and sustainable utilization of the environmental resources.

6.1.3 International Conventions and Agreements to which Uganda is a party

In recent years, many international conventions have been enacted. These conventions range from biodiversity, world heritage and biosphere reserves, migratory species and wetland conservation, to pollution and waste management issues, among others. According to a report by United Nations Department of Economic and Social Affairs (UNDESA) and United Nations Environment Program (UNEP), these conventions “bind Governments that have ratified and signed them and they obligate such Governments to pass national regulations to implement their commitment, often within specified time periods” (UNDESA and UNEP, 1994:9). As is the case with many other countries, the Government of Uganda has ratified and signed a number of international conventions, protocols, declarations, treaties and other agreements on the environment that require it to preserve, protect and ensure sustainable utilization of natural resources. Some of these include Agenda 21; Ramsar Convention; the Convention on Biological Diversity (CBD), 1992; African Convention on the Conservation of Nature and Natural Resources, 1968; Convention for protection of World Cultural and Natural Heritage, 1972; Convention on Trade in Endangered Species of Flora and Fauna (CITES); United Nations Framework for Climate Change (UNFCCC); and the United Nations Convention to Combat Desertification (UNCCD). A selection of some of the conventions that Uganda has signed and ratified is detailed in the subsection below.

6.1.3.1 Ramsar Convention

Uganda became a signatory to the Ramsar Convention on 4th March 1987 and ratified it on 4th July 1988 (Opiyo, 2008:126). The aim of this convention is “to halt the worldwide loss of wetlands and to conserve those that remain through wise use and management”. The Ramsar Convention calls upon State parties to engage in international co-operation for sustainable development. In its outline, the convention targets activities with negative effects on wetlands, ensuring that “they do not lead to a loss of biodiversity or diminish the many ecological, hydrological, cultural or social values of wetlands”. Parties to the Ramsar Convention are expected to demonstrate their commitments to wetland management through three ‘pillars’ of action namely “sustainable use of wetlands”; “identification of internationally important wetlands for inclusion in the Ramsar list”; and “international co-operation and sharing of information and expertise” (Ramsar- Iran, 1971).

After acceding to the treaty in 1988, the National Policy for the conservation and management of wetland resources was developed in 1995. The Wetlands Inspections Division also known as the Wetlands Management Department within the Ministry of Water and Environment was established in 1998 (MoWE, 2010). Following the establishment of the Wetlands Inspection Division, a number of areas have been gazetted. A report by Uganda Wildlife Authority indicates that “a total of 11 sites spread across the country have been gazetted as Ramsar sites for special protection. These sites include Lake Bisina Wetland System; Lake Nakuwa Wetland System; Lake Opeta Wetland System; Sango Bay-Musambwa Island-Kagera Wetland System (SAMUKA); Nabajjuzi Wetland System; Lutembe Bay Wetland System; Mabamba Bay Wetland System; Murchison Falls-Albert Delta Wetland System; Murchison Falls National Park; Lake Mburo-Nakivali Wetland System; and Lake Mburo National Park” (UWA, 2012). These sites are meant to provide “extra protection for the habitats of endangered species such as the globally vulnerable Shoebill stork, the Gonolek papyrus and the Sitatunga, which constitute important tourist attractions” (Opiyo, 2008:127). The signing and ratification of the Ramsar Convention demonstrates the Ugandan Government’s commitments to promote sustainable management of the country’s wetlands. Following the ratification, the Government developed an elaborate institutional framework for wetland management in Uganda.

6.1.3.2 Convention on Biological Diversity (CBD)

Uganda signed the Convention on Biological Diversity on 12th June 1992 and ratified it on 8th September 1993. According to a report by the National Environment Management and the Ministry of Water and Environment, the ratification of CBD was “a formal recognition by the Ugandan Government of the new opportunities offered by the Convention for closer international co-operation and for pursuing the integration of biodiversity objectives within national policies” (NEMA and MoWE, 1998:3). It therefore marked a firm act of commitment by the Government to promote international co-operation in the sustainable management and use of the country’s biological resources. In order to enhance the implementation of the Convention, the United Nations Environment Programme notes that “the Government of Uganda embarked on measures such as developing a CBD Programme of Work on Protected Areas; formulating access and benefit sharing regulations; preparing a National Invasive Species Strategy and Action Plan; operationalizing a national clearing-house mechanism; studying biodiversity financing and developing guidelines

and action plans for financing biodiversity; studying the role of indigenous knowledge and practices in the conservation of medicinal plants; studying taxonomic capacity needs assessment; developing guidelines for sustainable biofuel production; determining values for the contribution of the forest sector to the national economy; and including the implementation of National Biodiversity Strategies Action Plan in the National Development Plan II 2015/16-2019/20” (UNEP, 2015).

6.1.3.3 United Nations Framework for Climate Change (UNFCCC)

Uganda is a signatory to the UNFCCC. The country signed the UNFCCC on 13th June 1992 at the Earth Summit in Rio de Janeiro, Brazil and subsequently ratified it on 8th September, 1993 (MoWE, 2002:20). The ultimate objective of the UNFCCC is to “achieve stabilization of greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level ought to be achieved within a timeframe sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner” (UNFCCC, 1992). Uganda is also a party to the Kyoto Protocol. The Kyoto Protocol is an additional treaty to the UNFCCC and has “more powerful” and “legally binding” measures in place to decrease greenhouse gas concentrations and emissions. The Ministry of Water and Environment states that, “as a signatory of the UNFCCC and Kyoto Protocol, Uganda is required to report to the UNFCCC regularly on the amount and sources of emissions of GHGs in the country” (MoWE, 2002:1). A recent study by the Ministry of Water and Environment indicates that “Uganda has one of the lowest green-house gas emissions per capita in the world, estimated at 1.39 tons carbon dioxide, far below the global average of approximately 7.99 tons of carbon dioxide. Furthermore, Uganda’s contribution to world's total green-house emission is estimated at 0.099%” (MoWE, 2015:1). This shows that the country is not faring poorly. However, if caution is not taken especially with regard to development activities, green-house emissions may increase.

The focal point for the UNFCCC in Uganda is within the Ministry of Water and Environment in the Metrology Department. In order to strengthen Uganda’s implementation of the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol (KP), Uganda set up the Climate Change Unit (CCU) in 2008, currently known as the Climate Change Department (CCD). Key Functions of the Climate Change Department include the “coordination of national

climate change actions; monitor the implementation of mitigation and adaptation activities; initiate the development and review of appropriate policies, laws and programmes necessary to ensure effective implementation of adaptation and mitigation activities in Uganda; guide on precautionary measures to anticipate, prevent or minimize the causes of climate change and its adverse effects; establish and maintain a register of Clean Development Mechanism projects; and prepare for adaptation to the adverse effects of climate change by guiding the development plans for key sectors as well as the rehabilitation of areas affected by drought, desertification and floods” (CCD, 2015).

6.1.3.4 United Nations Convention to Combat Desertification (UNCCD)

The Government of Uganda signed the United Nations Convention to Combat Desertification on 21st November 1994 and ratified it on 25th June 1997 (MAAIF, 1999:9). The objective of the UNCCD is to “combat desertification and mitigate the effects of drought in those countries experiencing serious drought and/or desertification, particularly in Africa, so as to achieve sustainable development” (UNCCD, 1994). The Government of Uganda, like other State parties, is required to fulfil a number of obligations among which are, “adopting an integrated approach addressing the biophysical and socioeconomic aspects of desertification and drought; integrating strategies for poverty eradication into efforts to address land degradation and drought; giving priority and demonstrating relevant commitment to combating desertification through allocating adequate financial resources to implement the National Action Plan (NAP) to combat desertification; and integrating the NAP into strategies for sustainable development and cooperation frameworks, such as poverty reduction strategies” (UNCCD,1994).

In order to meet these objectives, the Government of Uganda has actively participated in negotiations of the Convention to Combat Desertification (CCD) and demonstrated its commitment to implementation of the convention. Some of the commitments to combat desertification that the country has engaged in include, “public awareness campaigns; establishment of a National Desertification Fund; establishment of a National Action Programme (NAP); Water Development, Management and Conservation project; and afforestation and agroforestry programmes, especially in the dry parts of the country” (MAAIF, 1999).

6.1.3.5 Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)

Uganda signed the CITES on 18th July 1991 and ratified it on 10th October 1991 (NEMA and MoWE, 2008:2). This convention brings together biodiversity conservation and wildlife trade. CITES “regulates trade in threatened and endangered listed species” through a system of permits and its purpose is to “ensure that no species of wild fauna or flora becomes or remain subject to unsustainable exploitation because of international trade” (CITES, 1973). A study by the United Environmental Programme shows that “Uganda has put in place a CITES Management Authority within the Ministry of Tourism, Trade and Industry as well as a CITES Scientific Authority represented by Uganda Wildlife Authority (UWA) for wild fauna, Forestry Sector Support Department for Wild Flora and Fisheries Department for fisheries” (UNEP/CITES, 2013).

Besides Uganda signing and ratifying the above named international agreements and conventions on environmental protection, it has also put in place measures such as environmental impact assessments and environmental audits to help control environmental degradation. These are discussed in the next subsection.

6.2 Environmental Impact Assessment and Environmental Audits

According to NEMA, the requirements under the various laws and regulations have created a demand for environmental services such as Environmental Impact Assessments (EIA) and Environment Audits (EA). The EIA and EA processes provide opportunity for “mainstreaming environment and improving resource use efficiency in these developments” (NEMA, 2010). Between 1996 and 2008, EIAs in Uganda increased from 10 to about 2128 (Atukunda, 2009). Currently, I believe there are more EIAs as a result of increased mining and the commercial oil discoveries which has seen a number of Multi-National Companies (MNCs) coming into Uganda to exploit the oil resource. Although EIAs are supposed to be public documents, I was not able to get access to them. At the NEMA library, EIAs were not readily available for public viewing.

The Government of Uganda recognizes environmental management as an important step towards sustainable development. That is why before being issued with any licences, all investors within the mining sector as well as other sectors are obliged to undertake environmental impact assessments. Section 19 (5) of the National Environment Act requires the developer of a project

“to conduct an environmental impact study if a project will have a significant impact on the environment” (GoU, 1995a). The environmental impact assessment is required when mining operation planning is satisfactorily advanced in order to make a proper evaluation of the projected impact of the development on the environment and the local community. This is usually done to enable investors to take cost-effective prevention measures. However, a study conducted by NEMA and SDC notes that “the use of EIAs has not yet been fully understood and appreciated by both policy makers and resource users” (NEMA and SDC, 2005:29).

In addition to Section 19 of the National Environment Act, Uganda also has environmental impact assessment guidelines known as the 1998 Environmental Impact Assessment (EIA) Regulations. The EIA Regulations of 1998 require that the content of an EIA report includes, “a description of the segment of the environment that will be affected, including specific information pertaining to figures and indicators necessary for identifying and assessing the environmental effects of the given mining activity; a detailed list of material inputs as well as their potential environmental effects; an economic assessment of the technology and processes to be used; analysis of the mining activity including machinery costs, operational expenditures, environmental costs, production levels, profit margins; as well as the products and by-products of mining” (GoU, 1998).

The EIA Regulations outline a number of documents to be attached to the environment impact assessment report. Some of these include a project brief, environmental impact review reports, environmental impact statement, environmental impact evaluation reports, terms of reference, public participation and commentary on the proposed project, the report of the Presiding Officer at a public hearing or any other information submitted to the Executive Director or Technical Committee of NEMA including submitted EIAs that are not yet approved or are under review (GoU, 1998; Houdet et al, 2014:33). Once the company has submitted its environment assessment report, all the accompanying environmental assessment documents are by law declared public documents and easily accessed by those who wish to read and review them. However, despite the fact that this is a legal requirement, in the course of my study I could not readily access the abovementioned documents. Reports of companies involved in mining were not freely available at the NEMA resource center by the time of the study and yet Uganda’s Access to Information

Act⁶² allows for free and easy access to such information. Some of the EIA reports which I accessed were for projects undertaken up to 2010 and yet there are a number of current mining projects in Uganda.

More still, the EIA Regulations oblige investors to undertake obligatory measures to “consult the local communities to be affected by mining process. Investors are required to publicize their intended mining activity, its negative and positive effects through media houses in a local language for at least 2 weeks; and subsequently hold meeting with the affected local communities to explain the mining activity and its effects” (GoU, 1998). In so doing, the investors are not only informing the local community about the activities but also could use this as a forum to seeking the community’s consent and also involve them in the decision-making process. The local communities could even have better solutions to some of the negative effects arising from the mining activity. Furthermore, informing and involving the local communities could help avert future conflicts. However, in conducting the EIAs, many investors do not consult with the local communities where the project is to be implemented (Marzuki, 2009). As such, the local community cannot hold them accountable. The EIAs are also not shared with the local community so it becomes difficult for the community to know what exactly is included in the assessment.

In order to implement the “polluter pays principle” detailed in the 1992 Rio Declaration, the 1998 EIA Regulations require companies that “have significant adverse impacts on the environment to deposit bonds as security for good environmental practice” (GoU, 1998). NEMA further offers environmental economic guidelines which comprise of companies paying environmental performance bonds (EPBs). According to NEMA, “EPBs are by law expected to be applied to land reclamation after mining activities to cover the cost of rehabilitation in the event of failure of land reclamation upon closure of mines. The value of EPB in Uganda is determined by an estimation of the total cost of reclamation of mined land based on a mining company’s Environmental Restoration Plan, which is normally required to be attached to the application forms for exploration, location and mining licenses” (NEMA, 2010).

⁶² The Access to Information Act (2005) states that “Every citizen has a right of access to information and records of Government ministries, departments, local governments, statutory corporations and bodies, commissions and other Government organs and agencies unless specifically exempt by the Act where the release of the information is likely to prejudice the security or sovereignty of the State or interfere with the right to the privacy of any other person” (GoU, 2005:3).

However, even where the investors are required to undertake a detailed environmental impact assessment, many of them seem not to follow the regulations provided. A report by Human Rights Watch in Karamoja region notes that “for many of the mining companies, the benefits to the community are discussed in vague terms throughout the environmental impact assessment reports as there are no conclusions as to how the affected residents will be fundamentally better off at the end of the mine’s life” (HRW, 2014: 64). The EIA regulations do not seem to have much impact for the local community since many investors do not abide by them. At the same time, NEMA lacks in its enforcement of the environmental impact assessment regulations. This is reiterated by Human Rights Watch that “NEMA’s monitoring and compliance division is unable to undertake thorough reviews of every environmental impact assessment (EIAs) that companies submit as well as ensure that mitigation and implementation measures are truly feasible in every case” (2014:86). Such failure by NEMA to monitor the compliance of investors to the EIA regulations illustrates weakness on part of the Government. Therefore, the problem is not absence of environmental laws, regulations or policies but rather enforcement, monitoring and compliance.

6.3 Environmental Education and awareness

In addition to the environmental regulatory framework presented above, the Government of Uganda through the National Environment Management Authority (NEMA) implements environmental education and awareness campaigns throughout the country. Environmental education and awareness is believed to be one of the effective measures and cornerstone in sustainably addressing concerns of environmental degradation in the country since it empowers individuals to participate effectively in the process of social change (Nabanyumira and Ida-Marie, 2004:8). As such, it is an essential component of achieving sustainable development and environmental protection. Environment education and awareness in Uganda is conducted using the following mechanisms.

6.3.1 National Formal Environment Education

The Government’s clear direction on environmental education was given in the Government White Paper on Education (1992) where it emphasized that curricula design at all levels should reflect “developing awareness and concern for protection of the environment” (Rutangye, 2005:22). Furthermore, Article 88 of the National Environmental Act also obliges NEMA and the Ministry

of Education to “take all measures necessary for the integration in the school curricula of education on the environment” (GoU, 1995a). Following this directive, environment education has been integrated into the formal school curricula from pre-primary through to primary, secondary and tertiary institutions. Wilson Okaka notes:

The environmental education syllabus in Uganda is meant to clarify the concepts of environment and sustainable development; create awareness and concern about the environment and related problems; focus on the nature of the local, district, national, regional, and global environments; identify and analyze environmental issues, concerns, benefits, and problems; develop knowledge and skills necessary for solving environmental problems; conduct environmental education action research for community problem solving; and promote environmental education communication skills (2002:48).

At the pre- primary and primary levels, environmental education has been integrated in all the four traditional subjects, namely English, Science, Mathematics and Social Studies. Every school is mandated to have an environmental education syllabus as well as a teacher’s guide. All teachers in pre-primary and primary schools are expected to follow the syllabus and hence environmental education is expected to be taught in an integrated manner in the four traditional subjects in all primary schools across the country (NEMA, 1998). In order to emphasize the learners’ understanding of the importance of environment, the Uganda National Examinations Board (UNEB)⁶³ examines learners based on the environmental education integrated syllabus (Rutangye, 2005:24). With the current universal access to primary education in the country, this implies that all school age children have access to environmental education which is already integrated into the primary school curriculum. This is a positive step of creating awareness about the environment for the pupils and learners from an early age.

At the secondary school level, NEMA trains teachers to integrate environmental education in their subjects and run active environmental education programs in their schools. As a result, secondary schools have established active clubs such as Wildlife of Uganda, Geography, Environment, Science, Scouts and Girl Guides, Agriculture, Young Farmers, Music Dance and Drama, Child to Child and the Red Cross Clubs which engage students in active participatory environmental

⁶³ Uganda National Examinations Board is the national assessment body in Uganda that is mandated to conduct and manage examinations for the end of the educational cycle at Primary and Secondary school level: and to conduct examination-related research

management activities (Rutangye, 2005:25). These clubs not only enable students to gain knowledge about the environment but also enable them to engage in environmental conservation and restoration programmes within their school environments.

In tertiary institutions of learning such as universities, teacher training colleges and as well as vocational and technical schools, environmental courses form part of the curriculum at Diploma, Undergraduate and Postgraduate levels. Rutangye notes that courses such as “Bachelor of Environmental Management, Bachelor of Environment Science, Bachelor of Environmental Health Sciences, Bachelor of Environmental Law and Diploma in Environmental Journalism are offered in a number of universities.” In addition, the Ugandan Government through NEMA also “trains Centre Coordinating Tutors who integrate environmental education in their colleges and technical schools” (Rutangye, 2005:31). For students who study such courses at tertiary level, their understanding and knowledge on the environment is reinforced. They are also equipped with knowledge on how to integrate it into activities in their work places.

6.3.2 National Non-formal Environment Education and Community Training

In addition to the formal environmental education mechanism, there is also non-formal environmental education and training. Uganda’s strategy for non-formal environmental education and community training comprises of nine programme areas, namely “networking and coordination; training (building the capacity of change agents and target groups in environmental education and monitoring, materials development); developing environmental resource and information centres; public awareness media programs; research; developing a prototype training manual; strengthening the role of indigenous knowledge and practices in environmental management; integration of gender concerns into environmental policy, planning and implementation” (Rutangye, 2005:35). The non-formal environmental education and community training approach helps to foster continuous lifelong learning about environmental issues among the citizens. Besides raising consciousness about environmental issues, such an approach helps citizens to deliberate together about complex decisions with regard to environmental stewardship, and to collectively work together in order to improve and try to solve existing environmental problems.

6.3.3 National Public Awareness strategy

The government has produced a wide range of educational training, information and publicity print and electronic materials such as books, manuals, posters, maps, brochures, chats, fact sheets, pamphlets, newsletters, T-shirts, stickers, calendars, documentaries, exhibition materials, newspaper articles, supplements and adverts and year planners, (NEMA, 2003/04). In addition, the National Environmental Management Authority produces and circulates training video films on “environmental good practices and technologies as well as documentaries covering a wide range of environmental problems across the country with identified good practices to address these problems. Furthermore, environmental education and awareness resource centres have been established across the country at district level by NEMA” (Rutangye, 2005:28). With such efforts in place, there is increased access to useful and valuable information and education materials on environmental conservation and protection for the general public. However, how many people are able to make use of the resource centres is another issue because the presence of resource centres alone without members of the general public using them may not yield positive results.

Another national public awareness strategy is the use of media. There are a number of media associations in Uganda that are involved in environmental education and awareness such as the Environmental Journalists Association of Uganda and Rural Development Media Communications. In addition, there are many environmental civil society organizations spearheading environmental management and conservation. They include the National Association of Professional Environmentalists (NAPE); Advocates Coalition for Development and Environment (ACODE); Flora and Fauna International - Uganda; Nature Uganda; Uganda Wildlife Conservation Society (UWCS); Uganda Wildlife Education Centre (UWEC); Uganda Society for the Protection and Care of Animals (USPCA); Uganda Conservation Foundation (UCF) and Uganda National Renewable Energy Association (UNREA)⁶⁴ among others. Radio and television programmes and messages in the different languages around the country present environmental awareness campaigns. The programmes often identify different environmental topical issues which are then discussed in, public not only on the international Environmental Day but also generally.

⁶⁴ Uganda has got very many environmental conservation organizations. The ones included in this dissertation are only a handful. A complete list of these organizations is available on <http://earthdirectory.net/uganda>

International Environmental Day is recognized in Uganda on 5th June each year. The occasion is often used as a national mobilization exercise to educate the public, and get them involved in participating in activities to restore the environment in their locality depending on the year's theme. Rutangye notes that activities to mark this day usually focus on “film shows, clean-ups, public lectures, planting trees, a national exhibition of environmentally friendly products and practices, environmental music and drama as well as awarding prizes to schools, industries, NGOs and individuals that excel in good environmental practices. Districts across the country, sub counties and NGOs also organize their own environmental celebrations simultaneously” (2005:41). Such activities can help change mindsets and behavior towards environmental issues and also enable individuals and companies to showcase what they can do to protect the environment.

Regrettably, even amidst such efforts, the levels of compliance with environmental policies, laws, regulations and standards is still very low leading to increased misuse and degradation of the environment. One wonders why the country is still experiencing high rates of environmental crisis with all the above mentioned mechanisms in place. This is reiterated by Morris Rwakabamba who argues that “despite the existence of environmental policies and implementing organs, the resources are continuously being encroached upon and depleted at an alarming rate, with little to show in terms of effective implementation. He adds that Uganda has the policy provisions but without the legal bite” (Rwakabamba, 2009:124). This implies that the issue is not lack of environmental laws and policies or even lack of environmental education. This is attributed to the fact that even where such mechanisms exist, enforcement of the laws and policies is still problematic. In this regard, promulgation of new environmental laws and policies may not yield positive results but rather enforcement of the existing laws and policies and prosecution of offenders may bring about some desirable change.

Furthermore, with regard to investments within the different sectors of the economy, an emerging issue is the integration and harmonization of the country's environmental legal framework into its investments policy. As long as the environmental legal framework is not harmonized with the investment policy, there will always be conflicts and disagreements between the two frameworks. This could adversely impact on the country's economic development.

6.4 Conclusion

The chapter has presented the Government of Uganda's efforts to address the environmental crisis in the country. It has presented the environmental regulatory framework including the key institutions charged with environmental protection; environmental laws and policies; as well as some of the international conventions and agreements on environment which Uganda has signed and ratified. The chapter has also discussed the environmental impact assessment regulations in Uganda. The fore-mentioned environmental laws and policies illustrate that Uganda has moved a long way towards providing a thorough policy and legislative framework for environmental protection. The issue however, is whether these policy and legal claims are well implemented and integrated into the country's investment policy. Furthermore, the chapter has noted that the framework for integrating environmental concerns in Uganda's development is strong. This is evident in the environmental education and awareness campaigns which are all-inclusive and target both the formal education and non-formal educational sectors. What seems to be emerging from the government's efforts is that the current environmental crisis in the country is not as a result of lack of environmental laws and policies or even lack of environmental education and awareness. In fact there are a number of laws which cater for the different components of Uganda's environment. In addition, all citizens (both in school and out of school) are exposed to environmental education. Unfortunately, amidst all these, the Government's response to the environmental problem seems to be failing given the escalating environmental crisis.

CHAPTER SEVEN: AN ANALYSIS OF MINING ACTIVITIES IN UGANDA THROUGH THE LENS OF SUSTAINABLE DEVELOPMENT AND THE ETHICAL THEORY OF CONSEQUENTIALISM

7.0 Introduction

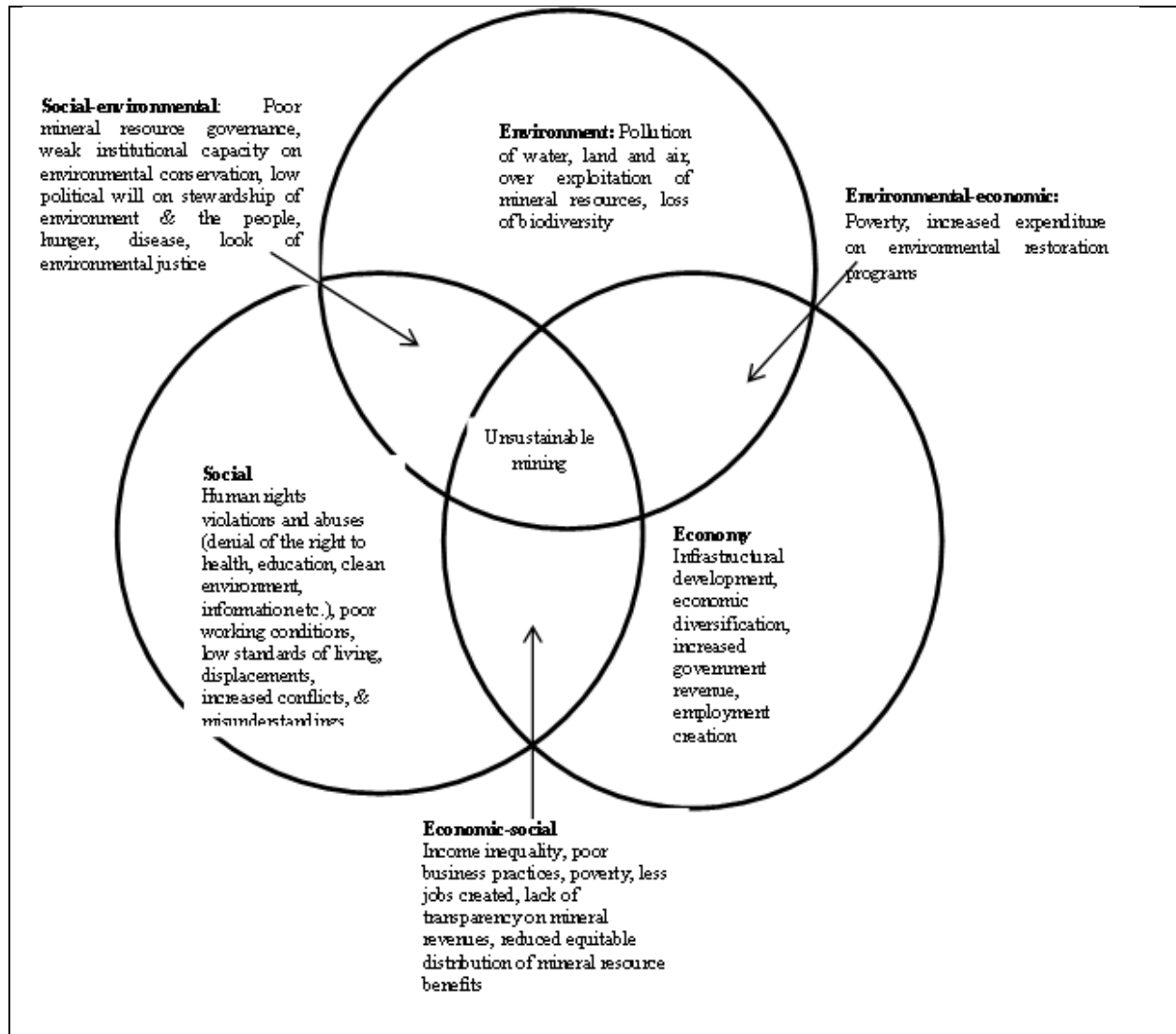
The preceding chapter has shown that the government of Uganda has a comprehensive framework to respond to the environmental crisis in the country. This mechanism includes an institutional framework on environmental conservation; environmental laws and policies; obligatory environmental impact assessments by all investors; and an all-inclusive environmental education and awareness strategy that targets the whole population. The chapter further noted that even with such a comprehensive environmental framework, conservation efforts are still failing in Uganda. The key issue that has emerged is that the current environmental crisis in the country is not as a result of lack of environmental laws and policies or even lack of environmental education awareness among the population. This is because, even amidst the comprehensive environmental mechanism in Uganda, the environmental crisis is still on the rise.

The current chapter therefore seeks to ethically analyse the contribution of Uganda's mining sector on development, society and the environment crisis. It applies the sustainable development framework and the ethical theory of consequentialism described in Chapter Two of this thesis. This chapter is divided into two sections. The first section relies on the insights provided by the sustainable development framework and the second section draws insights from the ethical theory of consequentialism.

7.1 The Sustainable Development framework and mining in Uganda

As noted in Chapter Two, sustainable development requires “meeting the environmental, economic and social development needs of both the current and future generations” (WCED, 1987). This section analyses Uganda's mining sector through the lenses of sustainable development. It places Uganda's mining sector within the sustainable development framework. This is illustrated in the schematic below.

Figure 5: The environmental, social and economic impacts of mining in Uganda through the Sustainable development framework



Source: Own analysis based on the SD framework as schematized by University of Michigan Centre of sustainability Systems

The figure above is a representation of the situation of mining in Uganda using the sustainable development framework. An examination of the mineral regulatory framework presented in Chapter Six shows that even though the framework is meant to promote sustainable mining and benefit all its citizens as well as enhance growth of the economy, this is far from reality. There are a number of environmental, social and economic challenges emanating from the mining sector that have impeded sustainable development thereby making sustainable mining an illusion. Leonardo

Boff argues that when development and environmental conservation are in tension, development is usually chosen and the cost is environmental deterioration (1995:5).

In the schematic above, the first circle represents the component of the environment. Mining in Uganda is characterized by poor mineral resource governance; pollution of the atmosphere, land and water resources; over exploitation of mineral resources; land degradation and loss of biodiversity. The second circle represents the economy. From the economic aspect, mining in Uganda is characterized by infrastructural development; employment; economic diversification and increased government revenue. At the intersection of the environment and the economy, there is poverty; and increased expenditure on environmental restoration. The third circle represents the social component. From the social component, mining in Uganda is characterized by gross human rights abuses such as denial of the rights to health, education, clean environment, food, remedy, information; low standards of living; displacement; conflicts and misunderstandings; poor working conditions; militarization of the mining areas and occupational hazards. Where the society and economy intersect, there is reduced equitable distribution of mineral resource benefits; poverty; income inequality; poor business practices; poor accountability and lack of transparency in the use of mineral revenues. Furthermore, at the intersection of the social and environmental components, there is weak institutional capacity to enforce environmental laws; low political will on stewardship; lack of environmental justice as well as hunger and disease.

Where all the three components intersect, mining is unsustainable. By unsustainable mining, I refer to the nature of mining that is not environmentally responsible and undermines local participation in mineral development decision-making. Such mining is biased to only one component of the sustainable development framework (the economic component) at the expense of the other two (social and environmental components). As a result of such mining, the benefits accrued are minimal because the Ugandan Government may still have to divert resources to compensate for the adverse effects mining has had on the environment and society, more specifically through environmental restoration projects.

In view of the SD framework, mineral investments in Uganda ought to be undertaken in a manner that addresses economic, social and environmental concerns. Therefore, in analyzing Uganda's mining industry through the lenses of sustainable development, the major ethical concerns that emerge primarily centre on mineral resources, environmental governance and human rights issues.

These concerns have a direct bearing on achieving sustainable development through ensuring sustainable livelihoods and environmental protection. On the other hand, if not well managed, mining could be instrumental in promoting and institutionalizing social and economic inequity. The above ethical concerns form the basis for discussion in this subsection.

7.1.1 Sustainable development and mineral resource governance

Governance is one of the important factors to consider in a move towards achieving sustainable development. Alkire defines governance as “the people’s ability to engage, influence, and hold accountable the public institutions that affect their lives, at whatever levels, demanding their rights, to dissent and protest, and to resist corruption without fear” (Alkire, 2015:40). In the context of mining, governance could mean “a set of strategies aimed at improving the transparency and accountability of governments and private companies during the licensing, exploration, contracting, extraction, revenue generation and allocation of natural resources” (Acosta, 2010:1). This implies that mineral resource governance should be aimed at regulating mining operations by governments and investors in order to safeguard the interests of all including, investors, Government and the local community. Yet, looking at the activities of investors in Uganda’s mining sector, there is a manifestation of poor governance of the country’s mineral resources which could undermine development in the long run.

The Philippine Development Plan (PDP) 2011-2016 notes that:

Good governance sets the normative standards of development. It fosters participation, ensures transparency, demands accountability, promotes efficiency, and upholds the rule of law in economic, political and administrative institutions and processes. It is a hallmark of political maturity but also a requisite for growth and poverty reduction, for there are irreducible minimum levels of governance needed for large-scale investment to occur and for social programs to be supported (2010:206).

In the same way, the United Nations Public Administration Network (UNPAN) argues that “good governance hinges on many factors such as sound leadership, encouraging grassroots participation in the governing process, accountability and transparency of government” (UNPAN, 2000:37). As elaborated above by PDP and UNPAN, governance aims at improving behavior and actions of the different stakeholders in order to contribute to development. In the context of mining, mineral

resource governance could improve the behavior of Government, local communities and the investors through ensuring honesty, impartial application of the law as well as providing appropriate and accurate information to all stakeholders so that they all get to participate in the development of the mining sector. The former UN Secretary-General Kofi Annan emphasizes that good governance is “perhaps the single most important factor in eradicating poverty and promoting development” (United Nations, 1998:13). Since governance entails a set of normative standards, it is clear that if well practiced it can enable people to take control of their own development thereby contributing to sustainable development. This is reiterated by Kabbaj who stated that “good governance is not only a worthy goal per se but also a prerequisite for sustainable development and poverty reduction in the longer term” (2003:7).

Kempe Ronald Hope argues that:

Good governance entails the existence of efficient and accountable institutions including political, judicial, administrative, economic, corporate and entrenched rules that promote development, protect human rights, respect the rule of law, and ensure that people are free to participate in, and be heard on, decisions that affect their lives (Hope, 2005:285).

From the above, it is clear that good governance is indispensable in achieving sustainable development. However, it is not only political governance that is fundamental but also environmental and mineral resource governance. In order to achieve good mineral resource governance, there is a complex set of interrelated measures and principles which ought to guide development activities. The principles of governance are elaborated below.

7.1.1.1 Transparency

Susan Piotrowski and Gregg Van Ryzin define governmental transparency as “the ability to know the activities of government or what the government is doing” (2007:308). In a similar manner, Kemp Ronald Hope argues that transparency in government implies “reliable, relevant, and timely information about the activities of government is available to the public” (2005:296). The inference is that information regarding government activities should be freely available and accessible to all individuals in order to enable them to understand and follow the issues of interest that are likely to affect them. Yet looking at the mining sector in Uganda, there is lack of transparency. This is evident through the lack of information on mineral revenues generated and

how these revenues are allocated. In addition, mining contracts are not available to the general public. The information in the contract only remains visible between the government and the investors. Nonetheless, the right of access to information is enshrined in the Constitution of the Republic of Uganda and the Access to Information Act. Specifically, Article 41 of the Constitution states:

Every citizen has a right of access to 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 sovereignty of the State or interfere with the right to the privacy of any other person (GoU, 1995a).

In spite of the above legal requirement, this provision has not been fully operationalized with regard to Uganda's mining sector. It is controverted by provisions for secrecy and confidentiality of information. During the course of the study, I tried to gain access to mining contracts, but they were not readily available to the public. The only contract I managed to access was leaked. This contract was signed between the Government of Uganda and Tullow Oil and was published online by *Global Witness*.

Furthermore, revenues from the mining sector are not published for the general public. The information remains confidential and is only known by the investors and the Government. The public is usually not aware of the amount of revenue the country has generated from mining and how much has been allocated to what government services. The public cannot therefore hold the government accountable for the provision of services. A report published by *Global Witness* during a press release on 24th September 2014 (based on leaked Ugandan oil contracts) shows that the Ugandan Government got a better financial deal for the country's oil but it failed to put in place crucial environmental and human rights safeguards. The report states:

The Production Sharing Agreements' (PSAs) signed by the Ugandan Government and Tullow Oil in February 2012 indicate that Uganda secured more money and better financial terms from the oil companies, it has kept the contracts hidden from citizens and failed to include robust measures to protect them or their environment (Global Witness, 2014a; 2014b:41).

The Ugandan Government is still unwilling to make the Production Sharing Agreements (PSAs) accessible to the public despite several calls from citizens. Yet, the investors cannot share the contracts with the public if the government of Uganda has not authorized them to do so. A study conducted by Musiime indicates:

Legislators, Civil Society, and Media have questioned the motive of keeping PSAs secret. Some even went as far as petitioning Court, under the Access to Information Act (2005), to compel government to disclose the oil agreements but were unsuccessful as the Court ruled that such disclosure was not in public interest. Curiously, it appears it is only the Uganda government that sees any benefit in keeping this information secret, not even the international oil companies⁶⁵ (Musiime, 2014).

The fact that many local people in the mining areas have no information about the activities taking place in their locations is indicative of a lack of transparency in the mining sector. One wonders why the Government is not ready to disclose such information to the citizens inspite of their constitutional and legal right to know. This creates suspicion and doubt about the Government's activities. To ensure transparency and proper accountability, the contracts between the Ugandan Government and mining companies should be discussed with the public so that they are aware of how they will benefit from the extraction of the minerals.

There have been several calls made for Uganda to join the Extractive Industries Transparency Initiative (EITI)⁶⁶. For instance, in October 2011, the Parliament passed a resolution for Uganda to join the EITI but to date, this has not happened (Oil in Uganda, 2013). EITI requires “mining companies and Governments to publish detailed information about payments and receipts for the extractive sector to allow greater scrutiny of extractives related revenues and allow citizens to follow the money”. Payments to be published include “taxes, royalties, fees, dividends, production entitlements, and payments in kind, infrastructure improvements and bonuses” (Global Witness, 2013:1). However, even amidst such calls, the government of Uganda has remained unyielding.

In addition to the above, information on the environmental impact assessments for the mining companies has not been made accessible to the public. A report by Global Witness indicates:

There is currently confidentiality about the environmental impact assessments, especially for oil companies in Uganda. EIAs contain key information about the potential risks of oil related projects to people and the environment, as well as the mitigation strategies which companies intend to take to avoid them. Furthermore, the upstream law does not require the

⁶⁵ During a civil society meeting with Tullow group in 2013, Tullow's Public Affairs Manager revealed that “Tullow does not have any problem with the publication of PSAs. If the country agrees to have these reports published, we will publish (them). We are happy to do so if the Uganda government allows”.

⁶⁶EITI is a “multi-stakeholder initiative comprising governments, companies and civil society that aims at strengthening governance in resource-rich countries by increasing transparency over government proceeds from the oil, gas, and mining sectors” (ACODE, 2011; Global Witness, 2013:4).

Minister of Energy and Mineral Development to make company EIAs public, and to date they are not widely available (Global Witness, 2014b:44).

Failure for the EIAs to be accessible to the public means that the people cannot appraise the social and environmental threats identified by the mining companies and therefore cannot assess the effectiveness of the proposed mitigation measures. It is only when the public has access to such information that they can hold Government and the investors accountable for any environmental and social risks resulting from mining. Holding government and investors accountable is therefore crucial for mineral resource good governance. The proceeding subsection discusses the principle of accountability with regard to mining in Uganda.

7.1.1.2 Accountability

Closely related to transparency is accountability. Accountability means that “systems are in place and are facilitated by public institutions to hold public officials to account for their behavior, actions, and decisions” (Hope, 2005:298). It involves “being answerable for decisions or actions, often to prevent the misuse of power and other forms of inappropriate behavior” (Cameron, 2004:59). Accountability is vital as “a means of holding governments and other duty bearers to account for the implementation of their commitments concerning equality, human rights and sustainability, and to report openly on their progress towards these commitments” (Globe ethics, 2015). On the contrary, when citizens do not have information regarding the activities of the Government as well as the investors, it becomes hard for them to hold such entities accountable. This is the current practice in Uganda’s mining sector where the local community cannot hold either the Government or the investors accountable because they do not have the right information. For instance, Government’s deliberate refusal to make public the mining contracts and production sharing agreements (despite several calls by the citizens) makes it hard for the citizens to hold Government accountable. A study by Human Rights Watch notes that:

Transparency alone may not improve mineral resource governance. Real improvements require that the public be able to hold governments accountable on how mineral revenues are spent. For this reason, transparency can only truly help improve governance in an environment in which people can freely and openly access and assess government data, organize to contribute to public debate, press for policies that serve the public interest, scrutinize government decisions, and hold leaders responsible for their decisions made (HRW, 2014:97).

The above quotation shows that accountability and transparency must go hand in hand if proper mineral resource governance is to be achieved. This means that if citizens are to hold their leaders (Government) and investors accountable, they must be given all the necessary information so that they are able to analyze it, understand what is required of Government and the investors and then engage them in dialogue where they fail to comply.

Government has a moral duty to be accountable on how it uses its authority. However, in the context of Uganda's mining sector, the Government has negatively used its authority to deprive the local communities of their fundamental rights by providing patronage to the investors. For instance, Chapter Five has shown many abuses of people's rights (especially property rights) by investors with the support of government representatives. The "grabbing" of people's property, especially land, is an inappropriate behavior. At the same time, the Government has not been held accountable for its involvement in such cases of land grabbing and acquisition. The rule of law also seems to be quiet on such patronage. In view of this, the next subsection discusses the rule of law in relation to Uganda's mining sector.

7.1.1.3 Rule of law

According to the Philippine Development Plan, rule of law refers to the "impersonal and impartial application of stable and predictable laws, statutes, rules, and regulations, without regard for social status or political considerations. It is a cornerstone of good governance" (2010:206). The implication here is that the law is applicable to everyone without favoring some individuals over the others. This is reiterated by Morita Sachiko and Zaelke Durwood that:

The rule of law requires compliance by individuals and groups of people, citizens and noncitizens, public officials and private members of society. Whereas well-functioning legal institutions and governments bound by the rule of law are vital to good governance, weak legal and judicial systems where laws are not enforced and non-compliance and corruption are the norm undermine respect for the rule of law, engender environmental degradation, and undermine progress towards sustainable development (Morita and Zaelke, 2005:15).

The reasoning here is that when the rule of law is in place, restrictions are put on those members in society with political and economic muscle, usually government officials and investors. This helps to check certain vices that could impede realization of people's rights and conservation of

the environment. On the contrary absence of rule of law limits access to environmental justice. The Aarhus Convention lists citizens' access to justice in environmental matters as one of the three pillars for promoting greater transparency and accountability among government bodies (Aarhus Convention, 1998). Citizens' access to environmental justice is only possible where there is the rule of law. The rule of law obliges all people to comply with the law including environmental laws and regulations. In Uganda, the environmental laws and regulations provide for the protection of the environment whilst pursuing development.

One of the ways in which the environment can be protected is through conducting EIAs. However, EIAs have been submitted and companies are granted mining rights, there is less effort is put into the protection of the environment. This is evident through the inadequate monitoring of development activities by NEMA officials. Even in cases where the investors have failed to protect the environment, legal action is rarely taken. With such inadequacies in the application of the law, people's rights are violated and the investors are not reprimanded. One wonders whether the law does not perhaps apply to investors.

Government ought to ensure that the legal system is firm and independent, and that law enforcement officials are professional and ethical. The law concerns everybody in the country therefore all people, including investors, ought to abide by the law or face the consequences. If serious action is not taken against law breakers, people are likely to break the laws with impunity. This undermines and diminishes the trust and confidence of the people that government can do better to advance the interests of its people. On the contrary, where the rule of law is upheld, it is an indicator of responsiveness on part of the Government to the needs of its citizenry. Responsiveness is therefore an important principle of good governance. In the next subsection, the study discusses the principle of responsiveness with regards to Uganda's mining industry.

7.1.1.4 Responsiveness

Paul Oquist argues that "responsiveness entails that government agendas and policies are to be focused on citizens' needs and interests by integrating citizen demands in decision-making and resources allocation in the context of citizens' needs" (1999:126). In a booklet on "*the strategies for innovation and good governance*", the Council of Europe states that "responsiveness involves delivering public services while requests and complaints by the people are responded to within a

reasonable timeframe” (2007:17). In the context of mining in Uganda, this seems to be wishful thinking because responsiveness as a principle of good governance is not upheld. Peoples’ complaints on the activities of investors are often ignored. In Chapter Five, the study indicated how Government had failed to protect its people from land grabs. Furthermore, compensation issues brought to Government attention have not been addressed in a number of mining areas (Golooba- Mutebi, 2013; Ssekika, 2013). The situation is further worsened when undervaluation of people’s property is done by Government as well as Government’s support of the forceful evictions of people. For instance, a 2013 media report quoted the President of Uganda H.E Yoweri Kaguta Museveni on the issue of land evictions for resource extraction and production as saying:

The investors embroiled in land wrangles with residents sitting on mineral potential areas should not quit, but rather seek government’s patronage to evict them. These are simply peasants who should not give you headache. If they are frustrating you then I will deal with them directly. In the event where the peasant land owners refuse to vacate the land, investors should look unoccupied nearby areas; drill into the surface, and thereby continue drilling horizontally which will force them out (Musisi, 2013)⁶⁷.

The President was reacting to the issues of inadequate access to land rich in minerals most of which is already inhabited, complicated by a “very unclear land policy” to streamline compensations, which the investors said was frustrating the sector. The President’s remarks on evicting local people from their land and giving it to investors demonstrates the failure of Government to protect its citizens. More still, it shows a lack of concern for the rights of the local people. With such remarks coming from a Head of State, it could imply that the investors are already protected even if their activities undermine human rights. It could also mean that the local people who are most often ignorant of their rights have no recourse. The investors can easily get away with the injustice caused to the local people. It also demonstrates that the dignity of local community members does not matter. The powerful in society who are usually the political elites and the rich investors can bend the law to get what they want. Encouraging investors to sabotage and forcefully displace citizens is a gesture of poor governance by leaders who appear to be motivated by self-interest and not working for the common good.

⁶⁷ These remarks were made by the President of Uganda, while closing the second annual mineral conference on Wednesday 2nd October 2013. The conference was attended by investors in the extraction and auxiliary industries. The report is available at <http://mobile.monitor.co.ug/News/Museveni-okays-eviction-of-residents-in-mineral-areas/-/691252/2018208/-/format/xhtml/-/5iuqle/-/index.html>

Public leaders ought to be persons who care for the interests of the local people. Having a profound attitude of concern and compassion toward citizens is a characteristic of ethical leadership and can help leaders to serve the interest of all citizenry, other than their personal interests. This means that they can always stand in support of local community members and can hold investors accountable for any misconduct. Ethical awareness among leaders is fundamental because very often ethical leaders are people-oriented and they make decisions and choices based on moral principles that have significant and positive impact on people (Petrick and Quinn, 1997: 89; Resick et al, 2006:347). This implies that ethical leaders are responsive to the people's needs and the decisions they make are aimed at improving the general wellbeing of the people, instead of undermining their dignity.

Resolution 224 of the African Commission on Human and Peoples' Rights obliges

respect for human rights in all matters of natural resources exploration, extraction, development and in particular ensures independent social and human rights impact assessments that guarantee free prior informed consent; effective remedies; fair compensation; women, indigenous and customary people's rights; environmental impact assessments; impact on community existence including livelihoods, local governance structures and culture; and ensuring public participation; protection of the individuals in the informal sector; and economic, cultural and social rights (ACHPR, 2012).

Yet even though Uganda is a signatory to the African Charter on Human and Peoples' Rights, it has not upheld its obligations to protect the local communities. It has remained unresponsive to the people's grievances as is evident in Chapter Five. This is an indicator of poor governance.

The Ugandan Government cannot be responsive unless it is committed and dedicated to listening and serving the needs of its people. Brewer argues that "effective handling of public complaints and upholding of rights of redress in the system is an integral feature of good governance and effective service delivery" (2007:59). If the Government is to make progress towards good governance, it ought to listen to the concerns raised by the local people within the mining areas because they are the ones bearing the greatest negative impact of mining activities. Government should not only listen but also provide avenues for redressing the people's concerns and complaints.

Another element of the Government's unresponsiveness is evident in the current mineral regulation framework. The framework is silent about the land owners and local community's consent prior to the granting of an exploration license. It is not surprising that there are many conflicts between the investors and the land owners who accuse the investors of grabbing their land by undertaking exploration activities on it without their knowledge. The current mineral regulatory framework is contrary to the repealed Mining Law of 1949 which stated that:

Any person intending to prospect or mine on private land shall when practicable give notice of his or her intention to the owner and the occupier of the land before commencing operations on it, and shall, if required by the owner or occupier, give security by depositing with the Government such sum or a banker's guarantee in lieu of that sum as the district commissioner may direct, for the payment of compensation for the disturbance of surface rights and for any damage done to the land, or trees or crops on the land or to livestock by prospecting or mining operations on the land, if required by the owner or occupier, shall desist from prospecting or mining on the land until that security has been given (GoU, 1949: Section 14)

The failure of the current law to oblige the investors to give notice of intent to prospect on private lands as well as provide security for compensation for the damage that may be incurred by the land owner demonstrates the unresponsiveness and weakness of Uganda's current mining law in protecting free, prior, and informed consent rights of the local community.

The unresponsiveness of the Government of Uganda is also manifested in the concerns of illegal land grabs in a number of mining areas. Such concerns reveal the weaknesses in Uganda's land regulation and the power which investors, particularly those alleged to be close to the political leaders can exert. This is reiterated by the State Minister of Mineral Development that the problem of "*elite capture*" in land deals in Uganda is a serious issue, and that there is sometimes collusion to take land and take advantage of "the ignorance of the masses" (HRW, 2014:69). The "ignorance of the masses" is mainly a result of failure to participate in the decisions concerning mineral development in their localities. As long as people are not given the opportunity to participate, they lack the right information and the powerful in society will tend to take advantage of them. Participation is thus an important principle of good governance. The next subsection discusses participation in the context of Uganda's mining sector.

7.1.1.5 Participation

Arnstein (1971), cited by Waheduzzaman, defines participation as “the process through which people influence and share control over development initiatives” (2010:12). In other words, it involves people either as individuals or as communities taking part in the activities that affect their own lives. Andrew West emphasizes that underlying participation is the principle of respect for each individual and his/ her view point, and the end result is a community that proceeds without division (2006:440). In the context of mining, participation means that the local people have a say and actively engage in the mineral development projects within their communities. Such engagement could be in form of working manually, attending meetings, brainstorming and even agreeing or disagreeing on the mining project. A study by Oxfam America states that:

If local communities are not consulted about and given the legal right to reject a mining project, the likelihood that the project will contribute to local well-being or to sustainable economic development is quite low. When investors do not consult with local communities, they may not understand what contributes to local well-being. The investors will not recognize what the local benefits and local costs are. As a result, they will not have the factual basis to design a project for which the local benefits exceed the costs (Oxfam 2008:27).

The above quote points to the fact that participation is associated with social justice as it safeguards against the marginalization of the local people. When the local community does not participate in decisions concerning mining projects in their localities, there is a strong likelihood that their needs will be undermined. This is because the investors may not feel obligated towards the local community, or in cases where they feel obligated, they may provide services that are not relevant to the needs of the local community. This is because the mining project may impose serious costs on communities while meeting almost none of their needs. The involvement of the local community is therefore paramount and should be free from pressure and any form of manipulation. Therefore their participation in decisions on mineral development is fundamental since it could protect them from the likelihood of investors autonomously exercising power over them which could undermine their rights, liberties and resourcefulness.

Participation is a component of human functioning. According to Amartya Sen, human functioning involves “beings and doings” that is “what one is and what one can do”. Therefore development can be seen in terms of the freedoms that people enjoy in deciding what kind of life to lead and in

doing what they achieve, established on the idea of “a life that is worthy of the dignity of human beings” (Sen, 1999:3). Since participation promotes human doings and beings, one could argue that it can be a determiner of the quality of human life and can lead to development. However, in the context of Uganda’s mining sector, participation by the local community in mineral development is undermined. This is especially so when the communities resist the activities undertaken by investors. In Chapter Five, the study noted a number of conflicts and misunderstandings in the mining areas between the investors and the local community members.

Many of the conflicts arise from not involving and consulting with the local community before undertaking mineral development projects. In a number of instances, the local community members reported seeing strangers digging through their pieces of land while exploring for minerals, without their permission and prior knowledge. This has resulted in disagreements between the people and the investors. Peter Oakley argues that participation can help minimize possible disagreements and misunderstandings while increasing people’s control over issues that affect their lives (Oakley, 1995:9). However, in many of Uganda’s mining areas, investors seem to underestimate the role of people’s participation in reducing disagreements.

Another benefit from participation and involvement of the local community in decisions regarding mining projects is that it is one way of economically empowering and liberating them as well as enhancing their human potential. This is reiterated by Francis Mulwa who stated that “involvement of the people in programs meant to help them not only improves their economic situations, but liberates their whole potential” (Mulwa, 2008). If development is to be integral and not just economic, it is crucial that the needs of the local people who bear the biggest burden of development projects are attended to. This is only possible if the local communities are active agents in deciding their future via participatory decision making.

While “Uganda’s mining law requires a surface rights agreement to be negotiated with land owners prior to active mining and payments of royalties to lawful landowners once revenues flow, the law does not require any communication or consent from the local population during exploration work” (HRW, 2014:8). This makes the local communities passive recipients of development and not active participants in their own development and in deciding their future. Such weaknesses in the law are some of the loopholes that investors take advantage of in order to undermine the local community’s involvement in and consent to mining projects. For instance, a study by Human

Rights Watch indicates that in Moroto district- Karamoja region, Jan Mangal a gold mining company arrived with excavators and began excavation work without any license. When the community members opposed operations and threatened to damage machines, the machines were removed from the mining areas until the issue was resolved and the company managed to secure an exploration licence. However, prior to receiving the licence, land had been fenced off and guarded by the country's army soldiers - Uganda Peoples Defense Forces (UPDF). The presence of the UPDF at mining operations especially in Karamoja region, "raises a number of concerns about potential human rights violations, intimidation, and conflicts of interest". (HRW, 2014:78). One would wonder why the national army would be deployed to work at a mine if there was free and informed consent from the local community. Such consent can only be obtained if the local community is given opportunity to participate freely in mineral development projects.

Having community approval before undertaking any mineral development projects is very important since beginning a project without local consent and agreement can result into unending conflicts between the investors and the local community. A study by Oxfam America indicates that even if a company obtains the requisite permits from the government, it will not effectively have a green light if communities oppose the project. Rather, as protests delay construction, interrupt production, raise costs, or reduce productivity, the project's success will be uncertain. If a company formally negotiates or learns that a community has rejected the proposal, there will be no uncertainty (2008:28-29). This points to the fact that community approval is a social license to operate any development project. In other words, mining companies need social permission to conduct business and this social permission is only provided by the local community but not Government.

Resolution 224 of the African Commission on Human and Peoples' Rights issued calls⁶⁸ on African States to confirm that "all necessary measures are taken to ensure participation, including the free, prior and informed consent of communities, in decision making related to natural resources governance" (ACHPR, 2012). Free, prior, and informed consent of local communities ought to be obtained before exploration begins and prior to each subsequent phase of mining and even post-mining operations. It is also fundamental in maintaining consultations and negotiations on important decisions affecting local communities throughout the mining cycle. Moreover when

⁶⁸ These calls were issued on 2nd May 2012 by the African Commission on Human and Peoples' Rights

the people participate in decision making regarding mineral development in their communities, they are able to protect their environment from degradation and also hold the investors accountable for any abuse on the environment and the people themselves.

A study by Oxfam America notes:

A mining company pays attention to the benefits and costs that commercial markets recognize. Meanwhile, it is likely to ignore the nonmarket environmental, social, and cultural costs.... Likewise, the national government may also have limited information on the potential local impacts of a mining project and the needs of a local population. Rather, the government may make decisions from a narrow fiscal perspective or on the basis of culturally and politically biased theories of national economic development.... Only the local communities, including indigenous peoples, have details about local conditions, local needs, and local values the type of information needed to evaluate accurately the potential benefits, costs, and risks of a proposed project. Mining companies and national governments will only seriously seek out and act on that local information if communities have the power to reject a proposal for which they judge the costs to exceed benefits. A community's right to reject a mining project creates the context for real fact-finding and negotiation (Oxfam, 2008: 28).

The above quotation suggests that when the local people do not participate in mining decisions, investors and the Government may develop policies that favor them at the expense of the local community. It is only when there is local participation that the local community can clearly articulate their issues and benefit from the mineral development. In such scenarios, local participation plays a fundamental role in moral development.

In discussing the instrumental function of participation, Amartya Sen argues that in any given society, people tend to get what they demand and more crucially, do not typically get what they do not demand (1999:156). This is because ignored matters and disputes come into public deliberations and confrontations and the authorities have to provide some response. In the context of mining, this could imply that the local community members are able to express their concerns to the investors who in turn take action. Under such circumstances, the possibility of conflict and misunderstanding is minimized. Moreover, failure to involve the local community is a violation of basic rights. Participation is therefore a basic right which ought not to be undermined. All human beings ought to be treated with dignity and respect. This implies that they should participate on an equal basis with others in matters regarding development projects within their communities.

Failure to engage local participation in mineral development undermines strong sustainability which advocates for local communities' participation in decision-making over development issues. When there is local participation, there may be fewer cases of human rights violations. Upholding human rights is crucial for the realization of sustainable development. In the next section, the study discusses the concept of human rights in Uganda's mining sector through the sustainable development framework.

7.1.2 Sustainable development and rights in Uganda's mining sector

In discussing the impact of Uganda's mining sector on the environment and the society through the lens of sustainable development, another issue that emerges is the violation of rights. Respect for rights is a manifestation of good corporate practice and is fundamental in achieving sustainable development. In the context of Uganda's mining sector, activities undertaken by the investors involved in mineral exploitation and extraction have led to complex rights violations and abuses, sometimes with long-standing and irreversible impact on the local community. This emanates from the technocentric approach to development where, in pursuing wealth and development, the environment is looked at as a resource to be exploited by investors as deemed fit. As such, the societal and environmental costs and degradation are down played by investors. Yet, as a signatory to the Universal Declaration of Human Rights as well as international and regional human rights treaties and conventions⁶⁹, Uganda has an obligation to ensure that the rights and freedoms of its people are respected, protected and realized. The United Nations Guiding Principles on Business and Human Rights (UNGPR) affirm that:

Business enterprises have a responsibility to respect human rights and an important role to play in contributing to social development and poverty alleviation while States have the duty to ensure that business enterprises respect human rights by ensuring appropriate steps to prevent, investigate, punish and redress human rights abuses through effective policies, legislation, regulations and adjudication (Ruggie, 2012:6; ICMM, 2012).

⁶⁹ Some of the international treaties that Uganda has signed include: the Convention Against Torture and Other Forms of Cruel, Inhuman and Degrading Treatment in 1986; the International Covenant on Economic, Social and Cultural Rights in 1987; the International Covenant on Civil and Political Rights in 1995; the Convention on the Rights of the Child in 1990; the Convention on the Elimination of All Forms of Discrimination Against Women in 1985 (United Nations OHCHR, 2008:11)

While investors are given operating licenses, they should not pursue their business goals at the expense of the local community. They are obligated to protect the rights of the people and ought to ensure that their activities improve the general wellbeing of the people and not undermine it. As such, the activities should economically empower the local communities. Where they tend otherwise, the Government must intervene through legal action to ensure that the investors comply since Government's prime duty is towards its citizens. A number of countries have got good practices with regard to community participation. For example, Canada has a number of mining projects and initiatives in which community engagement and readiness are applied. Community engagement spans the mineral development sequence and range from pre-exploration to exploration, mine development and mineral production, up to the closure and the reclamation of depleted mine sites. Community-based guides are developed and these set the guidelines between the local communities and mining companies intending to work in the area. The guidelines "improve the readiness of local communities heading into negotiations and allow companies to clearly understand what is needed for projects to proceed". They also establish "a strong foundation and provide reassurance to local communities that the company is committed to working closely with them throughout the entire exploration project". During the operation stage, communities have regular, formal means to express their concerns and provide input into decisions by companies and regulators" (Energy and Mines Ministers' Conference, 2014:16).

Another issue that seems to emerge is the violation of human rights. Violation of human rights undermines the dignity of the human person. In the context of Uganda's mining sector, some of the rights violated are discussed below.

7.1.2.1 The right to a clean and healthy environment

Environment, human rights and development are closely linked. This is reiterated by Mary Robinson, the Former UN High Commissioner on Human Rights who stated that:

The interdependence of human rights, environmental protection and sustainable development has been described using the metaphor of a triangle. Although sustainable development is the overarching goal, it cannot be achieved without also respecting human rights and protecting the environment. Each side is linked to, and mutually supports the others. Without one, effective realization of the other two is not possible . . . Environmentalists must come to realize that the language and framework of human rights provides another tool in their struggle to protect the

environment. At the same time, human rights advocates need to look to the significant role that environmental degradation in all its forms has on the enjoyment of individual rights not only for those living today but for future generations (UN OHCHR, 2002:4).

This quotation reinforces the argument for the intersection of the three pillars of sustainable development discussed in Chapter Two. Human rights in this context represent the social component while the economy is represented by development. For mining to be truly sustainable, it must meet the triple bottom line where the society, the economy and the environment interact on an equal basis. In order for mining to contribute to genuine development of the economy, environmental protection and the protection of human rights are fundamental. Without them, we cannot talk about development that is truly sustainable.

To achieve environmental protection and sustainable development, the Brundtland Commission provides a set of general principles, rights and responsibilities. The Commission notes that “all human beings have the fundamental right to an environment adequate for their health and well-being” (WCED, 1987). While pursuing development, the quality of the environment should not be compromised but rather that investors should ensure that the environment is protected from any form of degradation as one of the ways of guaranteeing human wellbeing. Nonetheless, in Uganda, violation of the right to a clean and healthy environment is evident through the increasing environmental degradation resulting from development activities, including mining. Environmental degradation has implications on both environmental and human health as it not only affects humanity but is also responsible for biodiversity loss in the country, as discussed in Chapter Three.

Environmental health is widely recognized as having major human rights implications. Ahmed Karim notes that:

. . . with increasing globalization of trade and commerce in the past few decades, the environmental and public health impacts of rapid industrialization and urbanization throughout different regions of the world are now being recognized as having major human rights implications by many policy makers ... Internationally, the right of humans to health as originally enunciated in Article 25 of the Universal Declaration of Human Rights is quite clearly linked to environmental protection, where clean water, clean air, adequate shelter and food, and primary health care are no longer considered societal privileges but as universal human rights (2003:12-14).

In a similar manner, the right to a clean and healthy environment as an overarching human entitlement is clearly stated in Principle One of the Rio Declaration on Environment and Development that “human beings are at the centre of concerns for sustainable development and are entitled to a healthy and productive life in harmony with nature” (UNCED, 1992:1). This implies that sustainable development cannot be realized if people live in a degraded environment, and at the same time a healthy population cannot be maintained if the environment is not adequately protected. Environmental health is affected when water and atmospheric quality and standards are compromised, and this in turn has effects on human health. From the study, it is evident that compliance to environmental regulations and standards by investors in Uganda’s mining sector is still a great environmental health concern.

7.1.2.2 The right to health

Closely related to the violation of the right to a clean and healthy environment discussed above as well as the right to decent working conditions is the violation of the right to health. When people are exposed to a degraded and polluted environment in addition to poor working conditions, they are susceptible to sickness and disease thereby undermining their right to health. Ahmed, Ferring and Ruiz argue that:

Today highly polluted and deteriorating environments in urban and rural communities of many developing regions cause a number of serious human illnesses and disabilities. Moreover, the widespread illnesses caused by environmental factors are preventable (2005:2).

Environmental degradation is responsible for a number of health problems. Health is a vital indicator of society’s overall wellbeing for both present and future generations, there by contributing to sustainable development. Providing safe environments ensures the health of future generations, which in turn contributes to the formation of stronger economies and dynamic societies. Therefore, “any action that seeks to improve the health of a human community by reducing environmental contamination in air, water and land, will benefit society at every level, whether they are social, economic or cultural in nature” (Ahmed, Ferring and Ruiz 2005:2) leading to development that is sustainable. Similarly, the International Covenant on Economic, Social and

Cultural Rights⁷⁰ mentions “the improvement of all aspects of environmental and industrial hygiene as one of the steps states parties should take towards the realization of the right to health” (ICESCR, 1966). The Committee on Economic, Social and Cultural Rights (CESCR) interpreted this provision as comprising of:

Preventive measures in respect of occupational accidents and diseases; the requirement to ensure an adequate supply of safe and portable water and basic sanitation; the prevention and reduction of the population’s exposure to harmful substances such as radiation and harmful chemicals or other detrimental environmental conditions that directly or indirectly impact upon human health⁷¹

Realization of the right to health is dependent on proper environmental protection. Therefore, unless the Government embarks on environmental conservation measures, the right to health will only be wishful thinking.

7.1.2.3 The right to safe and decent working conditions

The health and safety of all individuals at a mining site are basic social requirements of any development project (Natural Resources Canada, 2015). Nonetheless, health and safety issues in many mining sites in Uganda are undermined. For instance, the salt mining site in Katwe in south western Uganda is characterized by poor working conditions. “Miners lack proper safety gear and yet they are exposed to highly alkaline brine waters of pH above 9.5 daily” (Ddungu et al, 1990). Male miners use crude means of protection including old rubber tubes, socks and condoms to protect their private parts. Women on the other hand seek protection by packing their vaginas with cassava flour prior to entering the lake (Hinton, 2011b:177). Such exposure leads to a number of health hazards such as respiratory problems, eye irritation, skin diseases and sores, hyper-pigmentation of hair and skin (Okimait, Isingoma and Nsubuga, 2004:15), as well as damage to genitals and reproductive organs (Hinton, 2011b:177). The situation is not different in other mining areas. For example, in Karamoja region where Tororo Cement Limited (TCL) has failed to provide protective personal equipment (PPE) such as hardhats, safety goggles and gumboots to the miners

⁷⁰ Uganda is a member of the International Covenant on Economic, Social and Cultural Rights (ICESCR). It acceded to ICESCR on 21 January 1987.

⁷¹ CESCR, General Comment No. 14, The Right to the Highest Attainable Standard of Health (Article 12), UN Doc. E/C.12/2000/4 (2000), Para.15

(Hinton et al, 2011: 28) which has resulted in injuries and death of the miners due to their vulnerability to occupational hazards (ASF, 2014:40).

Such conditions of work undermine the dignity of the people and indicate that people are used as objects for generating wealth for the already economically powerful. A study by Avocats Sans Frontières at Kisiro cement mines in Moroto district in Karamoja sub region reports the frustration of some miners regarding the working conditions:

We get hurt every day, look at our wounds, just look... Tororo Cement used to give us iron sheets to protect us from the sun but they stopped, for no reason. Now we have to work under the scorching sun day in and out. That old man, has fainted several times out of sheer exhaustion and lack of water. If only Tororo Cement could bring water on the site, give us medicine for our wounds and food, our life would be so much better (2014:40)

Even amidst such unfavorable working conditions, the people continue to work. This shows that the people are desperate to earn a living, regardless of the conditions of work. The quotation above shows that miners are treated as means to an end (profit) instead of being treated as ends in themselves. Quoting Principle 1 of the 1972 Stockholm Declaration, Sohn notes that “man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations” (Sohn, 1973:452).

In addition, Article 7 of the International Convention on Economic, Social and Cultural Rights recognizes the “right of everyone to enjoy just and favourable working conditions which ensure safe and healthy working conditions” (ICESCR, 1966). Since Uganda has signed and ratified this convention, it is therefore obligated to guarantee that employers ensure safe and healthy working conditions for all its citizens. However, the Government seems to be unresponsive in ensuring that investors put in place safe working environments for their miners. This is contrary to the fact that Government has a mandate of ensuring that investors comply with the standard operating procedures for the mining sector which are aimed at improving the working conditions of the people. Opportunities like environmental audits (not announced in advance) to fine mining companies for human health and safety violations could help address the situation and ensure compliance. These audits would ensure that the company’s environmental performance is tested against its environmental policies and objectives.

7.1.2.4 The right to property

According to Uganda's Constitutional Court, "the right to property is the highest right a man can have over anything to which one claims ownership, from lands and tenements, to goods and chattels and in no way depends on another man's courtesy. A threat to this right is considered a threat to one's means of subsistence and even to one's life" (Tumusiime, 2012:2). However, in a number of mining sites in Uganda, the local community members have been displaced and dispossessed of their property, especially land. This is a violation of the right to property enshrined not only in Article 26 of the Constitution but also in a number of international and regional human rights instruments that Uganda has ratified and signed. These include the Universal Declaration of Human Rights, International Convention on Economic Social and Cultural Rights, as well as the African Charter on Human and Peoples Rights, among others. In the Albertine graben for example a number of people have been dispossessed and forcefully evicted from their land to pave way for the construction of an oil refinery (Ongode and Nalubega, 2014:2).

Land grabs are also occurring in Karamoja sub region where "mining companies are disregarding the region's indigenous people's land rights, sometimes fencing off swaths of land without the people's consent" (HRW, 2014:6-13). This has become the norm in many mining areas of Uganda despite demands to secure free, prior, and informed consent from the local communities. In view of development projects on indigenous lands, Article 32 of the United Nations Declaration on the Rights of Indigenous Peoples and the African Commission on Human and Peoples' Rights (ACHPR) affirms that "States have a duty to consult and co-operate with indigenous peoples in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources" (ACHPR and IWGIA, 2010:23). This is derived from the indigenous peoples' right to own, use, develop, and control their traditionally occupied lands and resources. However, the practice in many mining areas is that investors rarely seek free and informed consent from the indigenous communities.

7.1.2.5 The right to adequate and fair compensation

Closely related to the right to property is the denial of the right to adequate and fair compensation. This is especially common in the Albertine graben where, as a result of compulsory acquisition of land to facilitate the construction of an oil refinery and other infrastructure, the government of

Uganda is taking possession of previously private owned land. Resultant from this action is that compensation has to be made to the people for loss of their land, homes and even livelihoods. However, several complaints have been made by the local community resulting from unfair and inadequate compensation (Ongode and Nalubega, 2014:2). The unfair compensation is a result of under valuation and coercion to sign consent forms since many local people do not understand their rights and the remedial processes involved. Yet in cases where land owners legally acquire the land, they are “entitled to adequate and fair compensation amounting to no more or no less than the loss resulting from the expropriation of their property” (Tumusiime, 2012:2). It must be noted that just compensation is based on the principle of equity and equivalence which basically states that the adequacy of compensation should be measured against the goal of ensuring that people are neither impoverished nor enriched (Keith et al, 2008:11). Despite the fact that this ought to be the norm, the compensation practice in Uganda’s mining sector seems to be contrary to the principle of equity and equivalence.

In some mining areas such as Karamoja and the Albertine graben, land is customary owned and the majority of the people lack land titles, while many of the buildings are of a non-permanent nature made up of mud and wattle (Tumusiime, 2012:2). The 1998 Land Act tasks “each District Land Board to compile and maintain a list of rates of compensation payable in respect of crops and buildings of a non-permanent nature in addition to making annual reviews of the compensation rates” (GoU, 1998: Section 59). However, according to Francis Tumusiime:

The compensation rates are never compiled on time which leaves the valuation to estimation by contractors, who are usually not conversant with grass-roots conditions. Although the Constitution clearly guarantees the right to own property, the existing legislation does not spell out the compensation and resettlement modalities. Coupled with the fact that most affected grass-roots land owners lack the means and capacity to use the available (though not comprehensive) procedural and remedial windows. This perpetuates the destruction of social relations, homelessness, landlessness and injustice (2012:3-4).

This quotation shows the cause of the compensation problems in Uganda. Fair and adequate compensation is crucial because when people are not fairly compensated, there are increased complaints and could result in to lack of trust in the government especially if people’s grievances are not addressed. Some of the mechanisms that could help address compensation problems include establishment of an independent Board of Assessment that specifically addresses

compensation disputes on the amount payable. Another mechanism could be to review the mining law to make provisions for remedies on compensation to be determined by the High Court.

7.1.2.6 The right to food

In some mining areas, the local community's right to food has been undermined. A case in point is Buseruka sub country in Hoima district, where residents from nine villages⁷² within the area demarcated for the oil refinery who while awaiting compensation or relocation, were instructed not to grow crops and even construct new or renovate temporary housing on the land (ASF, 2014:28). In instances where the people cannot till land to produce food, agriculture the major source of livelihood for Ugandans is compromised, leading to threats of famine, hunger and malnutrition. How then can the local communities survive if they are not allowed to till the land? This is an abuse of the people's right to food. It could lead to crime such as stealing in attempt for people to survive. One of the ways this could be addressed is for Government to develop a fund from which money can be drawn and given to the local communities. This sum could be equated to an annual harvest and given to the local communities in installments so that they are able to purchase food stuffs.

7.1.2.7 The right to clean and safe water

Another human rights violation evident in Uganda's mining sector is the denial of access to clean and safe water. Mining has been associated with pollution, not only of the atmosphere but also of water resources. For example, water pollution emanating from mining is very evident at the defunct Kilembe copper mines in Kasese district where stockpiles of copper that were left behind after the closure of the mine thirty years ago are producing a steady flow of contaminants that are draining into nearby water bodies (Ongedo and Nalubega, 2014:9) particularly river Nyamwamba and lakes George and Edward into which river Nyamwamba flows. There is also siltation of a number of fresh water resources within the mining areas which has contaminated the water leading to water related illnesses as well as loss of aquatic biodiversity. The National Objective XXI of the 1995 Constitution states that "the State shall take all practical measures to promote a good water management system at all levels" to guarantee that all people in Uganda can access safe and

⁷² The names of the villages are Bukoona, Kagera, Nyamasoga, Kabakeete, Nyahaira, Kyapuloni, Kitegwa, Katooke, Nyakasenini (ASF, 2014:28).

clean water (GoU, 1995b). In view of this constitutional provision, the government of Uganda seems to have failed in its duty to guarantee safe and clean water for its citizens. In addition, Section 86 of the Mining Act provides that “wetlands or water sources shall not be obstructed, dammed, diverted, polluted or otherwise interfered with directly or indirectly” (GoU, 2003). However, even amidst these provisions, Uganda’s water resources are still polluted. The right to clean and safe water is fundamental in safeguarding the right to life. This is supported by the popular saying that “*Water is Life.*” Without clean water, there is no life. People cannot survive without safe drinking-water. The World Health Organization and UNICEF state that “in different ways at different ages, access to adequate water and sanitation services influences everybody’s health, education, life expectancy, well-being and social development” (WHO and UNICEF, 2005:10). This illustrates the importance of safe and clean water and how it is indispensable to survival and sustainability of life.

7.1.2.8 The right of access to information

Citizens have the right to know what government is doing. Article 41 of the Constitution of Uganda provides for the right of every Ugandan to access information in State possession (GoU, 1995b). However, the right to information within Uganda’s mining sector has remained unfulfilled because the local communities do not have the right information on the exploration and extraction activities taking place in their locations. A study conducted in Karamoja region shows that”

The absence of information is tagged to the politicization of mining interests in the area, as both local and national leaders seek to gain political mileage from a population that has high levels of ignorance. Attempts aimed at informing local communities about their rights to land over mining concessions are often interpreted as interference in political matters by political leaders leading to confrontation that civil society cannot sustain, since they themselves lack information and are deemed to be non-partisan. This limited engagement has meant that community knowledge has remained low on mineral rights and advocacy engagements with investors and leaders at all levels on mineral rights is nearly non-existent (Rugadya, Kamusiime and Nsamba-Gayiiya, 2010:22).

A later study by Avocats Sans Frontières in the same area in 2014 showed that the communities “do not have any knowledge or information on mineral assessments and or the issuance of mineral rights”. This is the case even with the Local government officials who also have no information on issuance of mineral rights in the area, since issuance is undertaken by the Central Government.

Local government leadership only gets to know that a licence has been issued when a mining company approaches them and asks them to sign it off (ASF, 2014:21). Similarly, a study undertaken in Ntoroko district showed that most of the residents decried the lack of information on the country's oil and gas sector, and some even expressed fear of the subject. The local leadership does not have sufficient information to pass on to the people (Musiime and Ongode, 2013). The following excerpt has details to the lack of information by the local community in Ntoroko district one of the districts in the Albertine graben.

Figure 6: Lack of information on mineral/ oil resource by the local residents

Ntoroko locals await oil news	Monday, 21st October 2013
<p>“The President warned us not to talk about oil,” said John, who operates a pub in Kanara town. Yet those willing to discuss the subject confessed their ignorance of it. “We only hear that (natural) gas was found and that they will come back. However, we are not sure whether the gas is there or not because we have not had any official communication about what is really happening,” says Rusoke Julius, another community worker in Rwebisengo town.</p> <p>“We do not have the full knowledge to engage the locals in oil issues,” he admits, adding “We are just giving them something small because even us, we do not have much information.”</p> <p>Yet, says James Kaahwa, some Community Based Organizations, like the Ntoroko Concerned Citizens that he works for, are being intimidated by some local and district leaders, being warned to refrain from venturing into oil matters. “Some people have threatened us a number of times to take us to court especially when we are on radio talking about oil because they argue that we do not have empirical evidence since we only read these issues in the newspapers,” he reveals.</p> <p>“They are threatening our lives and the leadership of our organization, but we are surviving.”</p> <p>The Ntoroko District Commissioner, Feddy Garyahandere, denies the accusation, saying that residents are allowed to hold their meetings freely anywhere in the district.</p> <p>“Whatever you heard is not correct. Before drilling started in this district, NGOs sent people to sensitize communities about the advantages and disadvantages of the oil activities. We held meetings especially in Kanara sub-county where the drilling was done,” she said.</p> <p>“In fact it was beneficial. They got jobs with the company, and some have even moved with the company to their new location. (For) those few that remained jobless, it is not the fault of the district.”</p> <p>She stressed that government had no intention of withholding useful information on oil and gas developments from its citizens.</p> <p>“Those who don't know don't want to know. We announced things in the media. They (locals) will always talk and we shall always defend the leadership,” she added.</p>	

Source: <http://www.oilinuganda.org/features/social-impacts/ntoroko-locals-await-oil-news.html>

This excerpt gives an example of the many cases of lack of access to information by the local communities. Many people are not knowledgeable on the developments in the oil sector within their region. Even those who seem to have information, they have minimal information. This shows how the lack of information can keep people from participating in their own development.

Many local people seem not to know what is exactly happening within their communities and yet if they are to benefit from oil development, availability of timely and accurate information is a prerequisite. There is no doubt that the lack of access to information about the Uganda's mineral sector has fostered and aggravated conflict between the investors and the local communities, as well as between the government and the local community. This is because the public does not have the relevant information to enable it to understand the dynamics of the mining sector. Without such understanding, the local community may have unrealistic expectations. When the expectations are not met, mistrust may result. This is reiterated by International Alert that:

Lack of information has fed suspicion and mistrust, and created divisions...while greater access to relevant information can restore the citizen's confidence and enable them to make more realistic expectations; and get empowered through gaining the insights and understanding that they need to prepare for the future (2009:8).

Secrecy and the lack of information in oil exploration and production led to a parliamentary revolt when "the Members of Parliament accused some cabinet ministers of taking bribes from the companies in exchange for oil deals" (BBC Africa, 12th October 2011). It was only after the move by the parliamentarians that some information was revealed but even then a lot more information was withheld from the public citing "commercial interests". This shows the huge communication gap between the government and the citizens, as well as between the investors and the local communities. Communication is fundamental in ensuring dialogue. It is only when the citizens have the right information that they can engage with the investors and even State agencies on matters affecting them.

7.1.2.9 The right to effective remedy⁷³

The right to remedy encompasses the individual right to have human rights violations effectively investigated; to provide equal and effective access to justice; and to provide effective remedies, including reparations (Roht-Arriaza, 1990:474). Governments have a duty to protect their citizens against business-related human rights abuses "through taking appropriate steps within their jurisdiction to ensure that when such abuses occur, those affected have access to effective remedy through judicial, administrative, legislative or other appropriate means" (Ruggie, 2010). This

⁷³A remedy pertains to the means by which a right is enforced, or a violation of a right is prevented, redressed or compensated (ASF, 2014:20)

implies that that the State must enact regulations for businesses and investors to end impunity for human rights abuses.

Effective grievance mechanisms play an important role in both the State's duty to protect and the corporate responsibility to respect (Ruggie, 2010). However, with regard to Uganda's mining sector, this does not seem to be the case. This is attributed to the fact that the Government has not effectively investigated the human rights violations that are reported by the local communities. It is unresponsive to the complaints raised and some government leaders tend to support the investors at the expense of the local communities instead of investigating the issues to ensure justice and fairness for all. For instance, the remarks of the President of Uganda during an annual conference for investors in Uganda's mining sector that the investors embroiled in land wrangles with residents living in mineral potential areas should not quit, but rather seek government's patronage to evict them citing the citizens as peasants who should not give investors headache⁷⁴. The remarks from a Head of State show that investors already have immunity and protection from the Government. This implies that even when the local communities complain about human rights abuses, they may not get justice. Such a statement could breed community distrust for the courts of law. The International Council on Mining and Metals emphasizes that "local concerns and grievances are inevitable but it is important to establish credible and trusted operational procedures to address such concerns" (ICMM, 2012). Failure to do so can undermine trust between companies and communities, and lead to an escalation of concerns.

7.1.2.10 The right to Education

The right to education for children has been undermined through the evictions, displacements and relocations. This right has been especially undermined in the Albertine graben where, as a result of government action, some people have been evicted from their land while others have been relocated to new areas. In a study conducted by Avocats Sans Frontières in Buseruka sub-county, respondents in Bukoona, Nyakasenini, Kitegwa and Kabakeete noted that "the schools in the areas had been closed because the teachers had moved away after compensation and the majority of the

⁷⁴The President of Uganda Yoweri Kaguta Museveni made these remarks, while closing the second annual mineral conference on Wednesday 2nd October 2013. Details about the report can be accessed at <http://mobile.monitor.co.ug/News/Museveni-okays-eviction-of-residents-in-mineral-areas/-/691252/2018208/-/format/xhtml/-/5iuqle/-/index.html>

children who attended these schools had relocated after their parents received compensation. The few remaining families with children of school-going age had to seek alternative education institutions for their children far from their residences, forcing children to commute approximately 5 – 15 kilometers daily” (2014:38). This distance is quite long for children, especially if they have to walk to and from school every day. This could affect the children’s morale to study leading them to drop out of school.

Elsewhere, children are not able to realise the right to education because they are working at the mining sites instead of being in school. For instance in Karamoja sub region, school-age children cannot access basic education because they are forced to engage in mining activities to contribute to their family income, most of which went towards providing food (ASF, 2014:39). This is the case in artisanal mining. Very often, large mining do not employ children. UNICEF notes that:

The greatest risk of child labour in the sector is within the supply chain. This risk is heightened during construction, when a company maintains relationships with a large number of contractors and suppliers”. This is because the required temporary labour force is often much larger than that employed during operations, and companies will frequently use contractors and labour brokers to meet these requirements. This heightens the risk of child labour (2015:14)

Article 33 (2) of the Constitution of Uganda reaffirms the “right to education for every child” and rests the responsibility on the government and the parents, while Article 33 (4) provides that “children should not be engaged in labour or employment activities that interfere with their education” (GoU, 1995b). Furthermore, where the rights to food, clean and safe water, health as well as a clean and healthy environment are undermined, the children are not able to go to school because malnourished and sick children cannot study well.

7.1.2.11 The right to development

Another right that is undermined by the activities of investors in Uganda’s mining sector is the right to development. Article 1(1) of the United Nations Declaration on the right describes the right to development as:

Inalienable human rights by virtue of which every human person and all peoples are entitled to participate in, contribute to, and enjoy economic, social, cultural and political development, in which all human rights and fundamental freedoms can be fully realized (United Nations, 1986:9).

In other words, the right to development aims at improving the well-being of all individuals. This means that all individuals must actively, freely and meaningfully engage in and benefit from development. Yet, looking at Uganda's mining sector there is lack of meaningful and active participation of the local community in the projects affecting them. This is coupled with poor working conditions and gross violations of people's rights, all of which undermine the right to development.

In the current section, the study has so far discussed the human rights violated as a result of mining in Uganda. However, it is important to note that it is not only human rights that are violated but also animal rights. Many forms of biodiversity in Uganda have suffered as a result of mining. For example, when forests are cut down to facilitate mining, a number of species are displaced as a result of habitat fragmentation and destruction while others are accidentally killed. When water resources are polluted, marine life is affected. Furthermore, when people are displaced, their domestic animals are also displaced. It is important to note that the rights of both people and other forms of biodiversity are important and as such, must be highly respected and protected.

7.1.3 Analysis in light of the principles of sustainable development

Following the principles of sustainable development discussed earlier in Chapter Two, Uganda's mining sector seems to fall short on some of the principles. For instance, Principle Twenty Two on indigenous people and their communities having a vital role in environmental management and development; and Principle Seventeen on undertaking environmental impact assessments where a number of small-scale and artisanal miners are not subject to EIAs and yet their contribution to environmental damage is incremental and cumulative. Another principle that is undermined is that of the polluter bearing the cost of pollution. In Uganda, this principle seems to be far from reality because those responsible for pollution of the environment are not bearing any costs. Instead the local communities suffer the effects of environmental pollution. In addition, the precautionary principle which encourages policies that protect human health and the environment in the face of uncertain risks is also undermined. In a number of instances, preventive measures to avert the negative effects of mining are not undertaken at the inception of the project and this has had adverse impact on human and environmental health.

Furthermore, although Uganda has implemented Principle Eleven of the Rio Declaration on enacting effective environmental legislation, it is clear from the study that the legislation is not well enforced. As a result, there is increasing degradation of the environment. Therefore the presence of the laws alone is not enough but it should be supported with proper enforcement of such laws. Likewise, the principle that calls for participation of all concerned citizens in environment issues is also undermined. From the study, it has been observed that local participation in mineral development is minimal in some areas and non-existent in others. As a result, lack of local participation has resulted in conflicts and misunderstandings between the investors and the local communities. The fact that there are various stakeholders, including citizens, implies that their involvement in key environmental and development issues contributes to a diversity of opinions and perspectives which enables policy makers to obtain a balanced perspective on the issue at stake. More still, the principle that human beings are at the centre of concerns for sustainable development is compromised. This is evident in the gross human rights violations and poor mineral resource governance discussed in the preceding subsections.

Government is obligated through the mining policy to ensure compliance with the existing laws and regulations on environment, human health and safety mainly through “strengthening the environment monitoring of the Ministry of Water and Environment; carrying out sensitization of the society on the impact of mining to the environment; encouraging the application of environmentally friendly technologies in mineral exploitation; drawing up and establishing health and safety regulations in all stages of mineral development through regulations and education; and formulating preventive measures against accidents and other human health and safety hazards” (GoU, 2000:20). However, from the above analysis, many of the issues are not practically addressed. The study has identified gaps between the theory and practice of environmental and mining laws in Uganda. The policies seem to be good on paper but are not enforced. There is therefore a need to move from theory to practice and enforce the implementation of these provisions and ensure sustainable mining. This study is therefore relevant to environment, investment and sectoral policy reviews taking into consideration the social, environmental and economic dimensions of sustainable development.

Having discussed the activities of investors in Uganda's mining sector using the sustainable development framework, the next section will analyze Uganda's mining sector using the ethical theory of consequentialism

7.2 Analysis of Uganda's mining sector using the ethical theory of Consequentialism

Chapter Two discussed the different approaches to the ethical theory of consequentialism highlighting their relevance to this study. In this subsection, the study analyses Uganda's mining sector from the different perspectives of consequentialism discussed earlier. These approaches include ethical egoism, subjective consequentialism and objective consequentialism.

7.2.1 Ethical Egoism

Ethical egoism demands that "each agent should act in his/her narrow self-interest because each person's only obligation is to cause the best consequence for him/herself" (Kernohan 2012:32). One of the issues that emerges from the research on the activities of investors in Uganda's mining sector is self-interest. Self-interest is concerned with the pursuit of one's own advantage or welfare to the exclusion of regard for others (Onions et al, 1973:1934). It is therefore a form of egoism. With regard to Uganda's mining sector, egoism is evident through the lack of concern for the environment by human beings (investors). This is especially reflected in the urge to pursue profit maximization at the expense of other environmental resources such as water resources, forest resources and biodiversity. The fact that extraction of minerals is undertaken without taking into consideration the well-being of the environment is a manifestation of self-interest and egocentrism on part of the investors. Therefore, there is nothing that can stop the investors from degrading the environment. This is reiterated by O'Neil who stated that "if one can exist solely according to the dictates of self-interest, there is nothing that can stop that individual from polluting and depleting the environment and its natural resources" (O'Neil, 1998: 162). It should be noted here that as long as self-interest as evidenced through profit maximization is the driving force behind mineral investments, the other elements of the sustainable development framework (society and environment) will continue to suffer as a result of human egoism. In his 2015 encyclical *Laudato Si*, Pope Francis cautions against human gluttony and greed in society that threatens the state of balance in ecosystem. He observes:

Caring for ecosystems demands far-sightedness, since no one looking for quick and easy profit is truly interested in their preservation. But the cost of the damage caused by such selfish lack of concern is much greater than the economic benefits to be obtained. Where certain species are destroyed or seriously harmed, the values involved are incalculable (no. 36).

Investments driven by egoism undermine sustainable development because they do not take into account the well-being and existence of future generations but rather those of the investors. Munyaradzi Murove notes that “the inherent lack of concern for the future can be discerned from the argument that self-interest dictates that the individual should pursue his or her self-interest at present without taking into consideration the economic well-being of future generations” (2005:9). This is justified by “the insatiable desire for wealth and the assumption that the resources of the earth are inexhaustible” (Heyne, 1983: 249). Such a rationale leads to “depletion and exhaustion of natural resources because the natural environment upon which human economic activities depend is considered as an externality” (O’Neil, 1998: 162). Murove adds that “this severing of our relationality with the natural environment deprives future generations of their economic well-being’ (2005:126) and is therefore a manifestation of lack of concern for our solidaristic existence. Handy argues that “a proper selfishness would see the sense in investing in others in order to create a better world for our descendants. Setting limits to our own needs and defining what is enough leaves more room to attend to the needs of others” (Handy, 1998: 113). Yet, in view of Uganda’s mining sector, there seems to be no limits set to the mineral resources and thus the unsustainable mining practices.

In Chapter Five, the study noted that investors in the mining sector especially in oil and petroleum have provided scholarships to students to undertake studies in oil and petroleum. This is a positive step towards enhancing the technical skills of the local citizens. However, some questions to ponder about are: “who are the individuals who receive these scholarships? Is it those coming from the mining areas or is it individuals from other areas who are seconded by the political elites and are in most cases connected to them?” One may be not be surprised to find out that the individuals who receive the scholarships are not members of the local communities where mining takes place but rather from other regions. Another point of concern is the value of the scholarships if the current mining practices seem to be geared towards depleting the current mineral deposits. The scholarships may not be of any benefit if there are no mineral deposits to mine in future unless more discoveries of minerals are made. In this regard, Herman Daly argues:

...the value of a sawmill is zero without forests; the value of fishing is zero without fish; the value of refineries is zero without remaining deposits of petroleum; the value of dams is zero without rivers and catchment areas with sufficient forests to prevent erosion and siltation of the lake behind the dam. Empty verbiage about the intergenerational invisible hand and the near-perfect sustainability of man-made natural capital is just the usual confused attempt to give a technical non-answer to a moral question (Daly, 1996: 221).

The implication of this quotation is that if consideration of the finite nature of the environmental resource is not taken into consideration, egoist tendencies of the current generation may compromise the ability of future generations to meet their own needs and this will undermine sustainable development. The egoism of the investors and some few individuals in the Government is not only degrading the environment but also depleting the country's natural resources upon which the future generations could depend for their own survival. When the pursuit of self-interest is the sole aim of investors, it becomes unreasonable for them to compromise their present opportunities for the sake of the future. Moreover, their present contribution to future existence is impossible if they are exclusively self-interested and without a sense of responsibility for the future.

7.2.2 Subjective consequentialism (the utilitarian perspective)

As earlier noted in Chapter Two, utilitarianism is an important theory in analyzing the activities of investors in Uganda's mining sector. One of the proponents of utilitarianism is John Stuart Mill and according to Donner, Mill's principle of utility holds that:

Actions are right in proportion as they tend to promote happiness and wrong as they tend to produce the reverse of happiness. By happiness is intended pleasure and the absence of pain; by unhappiness is pain and the deprivation of pleasure (1998:257).

From the discussion on the contribution of mining on development, society and the environment discussed in Chapter Five, one could argue that using the ethical theory of utilitarianism, the activities of investors in Uganda's mining sector are morally wrong. This is because they tend to produce unhappiness and pain for the majority of the people in the mining areas.

From the study there are many negative impacts of mining that seem to affect the majority, the poor local community members. The best consequences seem to be for the investors themselves. In as much as the investors pay taxes which are meant to benefit the local people in terms of social

services such as education, health, and improved road network among others things, an issue of concern is the quality of service delivery in the mining areas. The investors may construct class room blocks and health facilities for the local community, but if government is not ready to recruit and pay staff, what is the value of such facilities? Furthermore, it is not certain that the revenues collected go towards the local people who suffer the negative consequences of mining. If the revenues generated are used to improve services in the mining areas, why are many of the mining areas still lagging behind in terms of social services such as education, health, and infrastructure, and the people still live in poverty? For instance, Karamoja region - an area endowed with mineral resources has “over 80 per cent of Karamajongs⁷⁵ living below the poverty line and the region lags behind the rest of the country on all socio-economic indicators” (UNDP, 2012). In addition, the Human Poverty Index (HPI) in Karamoja is above 53 per cent compared to the 28.8 per cent national average (UNICEF, 2014). This is an indicator that the revenues generated from mining in the area do not actually reach down to the local communities that they are meant to serve. With all the minerals in the area, one would think that the region would have better services and the wellbeing of the people enhanced, but this is not the reality.

Furthermore, according to utilitarianism, “the ultimate goal of human action is to achieve happiness or pleasure and to avoid pain” (Burt, 1939: 791). This is reiterated by Vance and Trani that the utilitarian ethical principle guarantees the happiness and welfare of all, with no particular individual’s or group’s happiness and welfare regarded as more important than another’s. The right actions are those that promote “the greatest possible balance of happiness over unhappiness, with each person’s happiness counted as equally important” (2008: 373). The question arises as to how much pain or happiness do the people in the mining areas gain from the presence of investors? And how much pain or pleasure do investors get? Who suffers the greatest pain and who enjoys the greatest happiness? The previous chapters have showed that there is a serious public outcry regarding the activities of investors. Therefore based on the notion of happiness for the majority, investor activities in Uganda’s sector fail to meet the utilitarian ethical standards of generating happiness for the greatest number.

⁷⁵ Karamajongs are the local people belonging to the Akaramajog tribe. They are the indigenous people of Karamoja sub region in North Eastern Uganda.

From the utilitarian perspective, mining activities ought to be in accord with the principle of utility. This indicates that they should be geared toward enhancing and promoting the happiness and the welfare of the majority (local community members) rather than lessening and diminishing it. What this means is that the government officials as well as the investors must look beyond self-interest and other parochial attitudes to be all-inclusive and be supporters of the public interest. Their activities must therefore be concerned with promoting the common good and enhancing the general welfare of people, thus contributing to a good society. In my view, a good society is one that promotes the happiness and interests of its members and where all people are able to live a good life. In such a society, people are treated as an end in themselves and not a means to an end. This is in line with Kant's categorical imperative maxim⁷⁶ which "postulates that humanity should never be treated as a means but always as an end in itself" (Hill, 1980:84). Irene Van Staveren argues that "treating humanity as an end implies mutual respect and the protection of human dignity, which in turn assumes moral limits to human behavior"(Van Staveren, 2007:23). Johnson, quoted by Okechukwu, notes that the categorical imperative maxim "promotes information sharing and concern for people as it condemns deceptions, coercion, and violence" (2012:52). From the study, the activities of investors are characterized by use of violence on the local community members as well as forced evictions, all of which undermine human dignity.

Moreover, the prime duty of any government is to protect its citizens and provide them with services needed to improve their wellbeing and happiness. This is echoed by the United Nations Public Administration Network (UNPAN) that "the obligation of government is to protect peoples' rights and promote their individual and collective well-being as human beings" (2000:37). Therefore the aim of government agencies is to take charge of "health, education, safety, and to make the lives of people happier" (Gueras and Garofalo, 2002:50). Yet looking at the impact of the activities of investors on the people and their environment, the Government of Uganda seems to have failed in this prime duty. The Government is morally obliged to serve and enhance the interest and well-being of the people and not the interest of the investors alone. However, this doesn't mean that the investors should be left out completely because if this is the case then the investors may leave the country. Furthermore, in cases where the local people do not have the

⁷⁶ I understand that Kant is a deontological philosopher. However his notion of treating humanity as an end and not a means is relevant to my utilitarian argument for a good society in which people enjoy their rights and an enhanced wellbeing.

resources and expertise for mineral exploitation, this may leave the mineral resources unexploited. What this implies is that whatever activities investors engage in, they should not disadvantage the local community but rather uplift those communities. Therefore, as investors undertake mining activities, they should pursue such values as justice, and respect of others' right. Justice viewed in the lenses of equal treatment implies that all human beings have the same human rights and the right to equal treatment, irrespective of their origin, social status and needs.

In his theory of justice, John Rawls articulates the notion of justice as fairness where human beings have inviolable rights founded on justice. Rawls argues that "in a just society, the liberties of equal citizenship are taken as settled. They are not subjected to political bargaining or to the calculus of social interest" (Rawls, 1999:4). Justice is based on the absolute and inalienable human dignity of every human being and their equality. Justice grows when people cultivate a deep respect towards each other. This is expressed in the golden rule of mutuality and reciprocity as the basic norm of equity: "Do to others as you would have them do to you" (Globe ethics, 2015). This implies that not even the pursuit of development can displace such rights. Hence, based on this belief, it is not right and just to deprive freedom or subject some people to unjust treatment in order to achieve development as is the case in Uganda mining industry. Promoting justice is an expression of our mutual recognition of each other's basic dignity, and therefore a fundamental core to ethics and morality.

7.2.3 Objective consequentialism (the common good perspective)

Objective consequentialism demands that the intrinsic value that we ought to maximize should also extend to the ecosystem, including those entities which don't have mental life. One of the approaches to objective consequentialism is that of the common good. According to Kernohan, the common good approach demands that "each agent ought to act in such a way so as to contribute to the betterment of the community as a whole including the ecosystem" (Kernohan 2012:33). In my view, Kernohan's assertion presupposes the relatedness and interrelatedness of all entities. Yet looking at the environmental and social problems resulting from mining activities in Uganda, commitment to the common good seems to be undermined. This is because a certain category of people egoistically and inconsiderately safeguard their own benefits at the expense of the common good. The ethics of the common good therefore demands that mining activities should take into

consideration the well-being of not only the present generation but also the natural environment and the future generations.

Quoting other scholars, Murove notes that:

In order to promote the common good, there also has to be a balance or equilibrium between human needs and the needs of the natural environment. Striking a balance between human needs and the environmental well-being is possible on the premise that we make communities our starting point for the acquiring and distribution of wealth (2005:215)

This means that in working to achieve human needs, the needs of the natural environment should also be promoted. In other words achieving human needs and needs of the natural environment are indispensable. As such, the prevailing conditions in society must enable all people to reach their full potential, live a meaningful, fulfilled and dignified life but in an environment that is not degraded. Lack of commitment to the common good undermines the people's desire to live a good life and dehumanizes them, especially if they cannot attain decent livelihoods. It therefore becomes unethical to have a small number of individuals benefiting from mineral resource wealth whilst the majority of the people are living in poverty under excruciating conditions and a degraded environment. The ethics of the common good therefore "challenges us to view ourselves as members of the same community and, while respecting and valuing the freedom of individuals to pursue their own goals, to recognize and further those goals we share in common" (Velasquez et al, 2014). It is through viewing ourselves as members of the same community that we can work towards uplifting the community and ensure that development projects benefit everyone in the society.

7.3 Conclusion

The chapter has analyzed the activities of investors in Uganda's mining sector using the sustainable development framework and the ethical theory of consequentialism. The study has observed that there is poor governance of the country's mineral resources and yet good natural resource governance is a prerequisite for achieving sustainable development. Poor governance in Uganda's mining sector is manifested through a lack of transparency and accountability resulting from the failure of government to provide information about the mining activities including mining contracts, revenues as well as government spending and yet access to information is a

constitutional right; the unresponsiveness of the investors and the Government towards the citizens' complaints and grievances regarding mining; lack of participation of the local communities in decisions affecting them despite the fact that participation is conducive and fundamental for the exercise of rationality; and lack of adherence to the rule of law manifested in the failure of the law to apprehend the investors who do not comply with the provisions set out in the constitutional and various environmental laws.

At the same time, the Government has not empowered the local communities to reject suppression from the investors. It has instead remained insensitive to the plight of local communities and has not adequately addressed itself to their problems. It is important to note that empowerment of the local communities goes beyond projects aimed at increasing access to jobs, revenue generation and infrastructural development. It also focuses on internal development that enables the people to stand-up against any mistreatment and abuse that degrades them and restricts them from being active participants and recipients of development. This study therefore challenges the government of Uganda to re-examine its approaches to development in terms of the contribution to the environment and local community empowerment.

The chapter also noted that activities undertaken by both government and the investors involved in mineral extraction have led to complex human rights violations and abuses, sometimes with long-standing and irretrievable impact on the local communities. The human rights violated by both investors and the government include the right to a clean and healthy environment; the right to health; the right to decent working conditions; the right to ownership of property; the right to adequate and fair compensation; the right to food; the right to clean and safe water; right of access to information; the right to remedy; the right to education; and the right to development. Some of the human rights violations are done by the Government despite its ethical obligation to promote the wellbeing of all its citizens. This means that government cannot keep emphasizing sustainable development for the country when the wellbeing of its citizens is undermined.

It is clear that egoism is a driving factor for many of the mining activities in the country. Such egoism is evident through self-interest which is concerned with the pursuit of one's own welfare to the exclusion of regard for that of others. Many public leaders as well as investors pursue their own interests at the expense of the local communities. The local communities do not seem to benefit from mining activities in their locations and yet they suffer the negative impacts of such

activities. As a result, a wide gap exists between the wealth generated by the mineral resources and the wellbeing of the people. The chapter has noted that egoism not only undermines the welfare of the present generation but also that of the future generations. Moreover the activities of investors in Uganda's mining sector seem to produce unhappiness and pain for the majority while producing happiness for the minority. They therefore fall short from a utilitarian perspective. Bearing this in mind, there is need for an ethical paradigm to solve the challenges of the mining sector in order to bring about sustainable mining in Uganda. This ethical paradigm ought to put emphasis not only on development but also on relationality with both the environment and fellow humankind. It should also ensure sustainable livelihoods. This is the point of discussion for the next chapter.

CHAPTER EIGHT: TOWARDS A HOLISTIC ETHICAL PARADIGM OF SUSTAINABLE MINING IN UGANDA

8.0 Introduction

The preceding chapter analyzed the activities of investors in Uganda's mining sector through the sustainable development framework and the ethical theory of consequentialism. The chapter has shown that ethical issues in Uganda's mining sector hinge on mineral resource governance and human rights, among other factors, all of which have a bearing on achieving sustainable development. Poor mineral resource governance is manifested through a lack of transparency and accountability, lack of participation of the local communities in decisions affecting them, lack of adherence to the rule of law and unresponsiveness from both the Government and the investors to the people's grievances and complaints.

The chapter also noted that activities undertaken by both Government and the investors involved in mineral exploitation and extraction have led to complex human rights violations and abuses, sometimes with long-standing and irretrievable impacts on the local community. The rights violated include the right to a clean and healthy environment; the right to health; the right to decent working conditions; the right to ownership of property; the right to adequate and fair compensation; the right to food; the right to clean and safe water; right of access to information; the right to effective remedy; the right to education; and the right to development. It was further argued that unless mineral resource governance and the rights of both people and other forms of biodiversity are upheld, mining in the country will continue to be unsustainable.

In addition to the above, it was observed that egoism is a driving factor for many of the mining activities in the country. Such egoism is evident through self-interest which is concerned with the pursuit of investors' welfare. This is to the exclusion of regard for the local communities leading to a wide gap between the wealth generated from the mineral resources and the wellbeing of the people. As a result, mining has led to unhappiness of the majority (the local community) while promoting happiness of the minority (the investors and a few political elites) as noted in the previous chapter. This illustrates government's failure to ensure sustainable mining that is beneficial to all.

This situation raises a major ethical question: how can investors in Uganda's mining sector undertake development activities bearing environmental, social and economic concerns in mind in order to bring about sustainable mining? Ahsam Mohammed argues that "although economics is believed to be the best hope for formulating policy choices, it must involve diverse values that are not purely economic and hence not invariably measurable" (2012:14). Similarly, Vandana Shiva demands that we rethink poverty and wealth, because trading the non-tradable (for example, water or biodiversity) for profit creates poverty and rapacious environmental abuse. She further argues that "we need a paradigm shift toward a holistic world view, moving from a mechanistic, industrial paradigm to an ecological one, and a different definition of being human: from consumer to conserver" (1996:65).

Heather Eaton and Lois Ann Lorentzen (2003) also stress the strategic importance of challenging the capitalist system and point towards the development of an ethic that can help change the world for the better. Since the social, economic and environmental problems presented in Chapter Five are of social and moral nature, addressing them without recognizing their moral and social aspects is insufficient, if not entirely futile. The moral and social dimensions cannot be ignored. Therefore in pursuing development, ethics and morality ought to guide the activities of investors. This is attributed to the fact that ethical behavior is fundamental in guiding human conduct in any society.

Chapter Two of this thesis discussed the ethics of stewardship (an ethic of responsibility) and argued that for mining to be sustainable there is a need to take our stewardship role very seriously. From the findings of this study, it has been observed that there are tendencies of inhumane treatment towards both the environment and the local people, despite the fact that Government has responsibilities towards both the environment and its citizens. According to Hans Jonas, "this idea of responsibility should be based on a new kind of ethics appropriate in our technological age because the nature of human action has changed so dramatically in our times that it calls for a radical change in ethics as well" (1984:4). Relating Jonas's argument to the study implies that investors have to shift from the materialistic management model of operation which is "characterized by profit as the sole measure of success of economic activities and money as the main motivation of economic activities" (Zsolnai, 2011:892). It therefore requires a paradigm that takes into consideration the natural environment and humanity (both the present and future generations).

Ethical business practices ought to be grounded in a strong ethical mechanism that guides and influences the conduct of the people. Promoting sound development cannot be possible without having ethical mechanisms that help to encourage good behavior as part of the culture. Therefore in this chapter, the study proposes a framework for promoting sustainable mining in Uganda grounded on the ethic of stewardship. It seeks to achieve the fourth objective: “To propose an ethical framework for sustainable mineral development and sound environmental management in Uganda”. This ethical paradigm is presented in form of recommendations. These recommendations aim at creating an awareness-based ethic where investors ought to ensure that natural life conditions do not threaten the existence of humanity as well as other forms of biodiversity. At the same time, the recommendations intend to advocate for an ecosystem ethic where human beings understand that they are part of the biotic community and respect the environment when undertaking development projects. Such ethical paradigm equally emphasizes development and relationality between humanity and the environment and among humanity.

The proposed paradigm emerges from both the literature reviewed as well as the theoretical framework. It encompasses eco-health, human rights and an ethic of solidarity (with the environment and among humanity) as the ideal approach to ensure sustainable mining. This paradigm demands human readjustment in dealing with the environment while pursuing development, and demands inclusiveness of all citizens in their own development as one of the ways of enabling them attain their full potential. As such, it points towards strategies for addressing the challenges resulting from the current mining activities in Uganda. The first section discusses eco-health; the second section discusses the notion of human rights; the third section discusses the ethic of solidarity; while the fourth section presents other recommendations followed by a conclusion.

8.1 An eco-health approach to development

Human health cannot be “considered in isolation but depends highly on the quality of the environment in which people live. For people to be healthy, they need healthy environments” (Lebel, 2003: xi). As such, the eco-health approach focuses on the place of human beings within their environment. According to Jean Lebel, the eco-health approach recognizes the inextricable links between humans and their biophysical, social, and economic environments, and that these links are reflected in a population's state of health (2003:1). In other words, the economy, the

environment and the needs of the community have a bearing on the health of an ecosystem. Therefore using an eco-health approach encourages positive environmental action that can enhance both health and welfare at the community level (IDRC, 2015). The environment is essential for supporting and sustaining human livelihoods within and across generations. This value for human welfare morally obliges humanity to protect the environment. From the above, it is clear that the eco-health approach is oriented towards sustainable development.

From the study, it has been noted that there are a number of diseases and health hazards associated with mining. The level of human health that can be attained is subject to the capacity of the ecosystem. This is reiterated by Asakura et al that “human health is determined by the quantity and quality of goods and services from the ecosystems within which people live and engage in their livelihoods. Over-exploited ecosystems cannot sustain healthy human livelihoods, and can be hazardous to human health” (2015:6). In order to address such concerns, there is need to promote and enhance the health of both the natural environment and the people. This calls for an eco-health approach to mineral development. An eco-health approach to development is important because the health of both the people and the environment is fundamental for the development of the country. Hinton notes that:

The eco-health approach is a systems-based methodology that recognizes that health is reliant on the nature of all biological systems, from the individual up to the biosphere. It puts human health at the centre of development, while recognizing the critical interrelationship between health and the ecosystems which humans are a part of. Ultimately, it recognizes that development can only be sustainable when the wellbeing of both human beings and the ecosystem are considered (2011: 46).

However, according to Dominique Charron, “improving people’s health while promoting thriving resilient communities and environmental sustainability is one of the greatest challenges of the 21st century” (2012:1). Similarly, Amartya Sen argues that “the deprivation of health is bad even for the economy because people’s productivity depends on their level of nutrition and health. The functioning of the economy suffers from illness-related absenteeism” (2000:40). This illustrates that where people and the natural environment are unhealthy, their contribution towards the development of the economy is also minimal. This then adversely affects the country’s productivity and growth, eventually undermining economic development. Mergler argues that environment-related disease processes are irreversible or even relentlessly progressive. As such,

human health needs should be pursued in a holistic manner with emphasis placed on characterizing the health and well-being of population, disease prevention, and ecosystem equilibrium. Integrating human health considerations into environmental impact studies will help to contribute to more equitable mining development (2003:880). In terms of research, an eco-health approach to development involves “researchers and lay people, including community members, collaborating to enhance the biophysical, social, and cultural dimensions of the environment” (Richard and Gauvin, 2012:67-80).

An eco-health approach to development comprises local participation in decision making, good governance, social capital and availability and command over goods and services (Noronha, 2004:18). Understanding the impact of mining on the wellbeing of the people necessitates consideration of factors such as the ability to attain knowledge as well as their capacity to participate in the decision-making concerning mineral development within their local communities. Local participation in the decisions pertaining to mineral development is fundamental because it not only helps in identification of community needs, but it also supports the development of context-appropriate responses to the challenges identified by the local community. This eventually leads to the establishment of communication channels between the investors and the local communities in order to better understand and respond to the problems identified. Although it is true that involving the local community in decision-making entails greater time commitments, the outcome is usually information that is more pertinent and applicable to the target community.

An eco-health approach is predicated on an understanding that “protecting ecosystems and improving degraded environments are fundamental requirements for human health and well-being now and for future generations” (Charron, 2012:23) thereby contributing towards sustainable development. It is now unavoidable that we need to explore operative sustainable development approaches that take into consideration our continued existence and survival over the subsequent thousands to millions of years. This means that gaining wisdom and knowledge about the natural environment as well as a positive attitude towards living together with the natural environment ought to be enhanced. This calls for an ethics of responsibility towards the environment.

Kinne notes that “the more ecosystems and the human livelihoods in them are changing, the more an ethic of development is required that considers human responsibility for the global biosphere”

(2002:88). However, even though this is the ideal, realistically, there is an irresistible emphasis on economy growth and development as well as the use of technology over human responsibility and stewardship of the environment in contemporary society. As such, an eco-health approach to development could stimulate a resistance against the extreme valuing of economy at the expense of the environment and social pillars of sustainable development.

According to Cairns, since eco-health “is an approach that places high value on harmonious and sustainable relationships between the needs of human livelihoods, ecosystems and human health, it naturally follows that people should run their livelihoods by considering the dynamic nature of the ecosystem. This idea is in more accord with a sustainability approach which strives for a good balance between homocentric and eco-centric perspectives” (2003:43-45). Eco-health is therefore more ethically relevant to development in contemporary society since it takes into consideration the needs of both human beings and the other components of the environment. In order to promote the use of this approach, there is need to create awareness. One of the means is through eco-health education. Salgado notes that eco-health education is fundamental for “increasing people’s environmental awareness, which in turn influences them to uphold a harmonious and sustainable relationship between the ecosystem and activities for livelihoods, communities and health” (Salgado, 2008). When people are well informed, they are able to play an active role in conserving their environment in order to enhance their health as well as promote social development. This is reiterated by Asakura et al that eco-health education enables “people to become positive agents of change for ecosystem sustainability, social development, and human health” (2015:7).

8.2 A human rights approach

In Chapter Seven, the study indicated that there are a number of human rights abuses within Uganda’s mining sector instigated by both the Government and the investors. Many of these human rights abuses result from environmental pollution as well as unfair economic systems. The lack of respect for people’s rights therefore calls for a human rights framework to mineral development. Humans enjoy inherent worth essentially because they “possess not only a non-instrumental value, but also a special kind of worth or dignity in and of themselves” (DesJardins, 1993:146).

The human rights framework echoes the responsibility of duty-bearers, predominantly the Government to respect, safeguard and uphold human rights. It also illustrates the need for rights-holders to claim their rights. The Government has a primary obligation of endorsing the respect of human rights for all its citizens. This means that while encouraging investments in the mineral sector, the Government of Uganda should at the same time demand that investors respect the rights of the people in the mining areas. In other words, the investors' sole interests should not override the rights of the people. Obviously when the Government is keen on commitment to human rights, it will take action to protect its citizens from the exploitation, violence and harm caused by the mining activities. Where there is respect for human rights, the working conditions of the people will be improved, and people will be better protected from exploitation and abuse. At the same time, the capacity of the local people within the mining areas to claim their rights will be strengthened.

James Nickel asserts that the moral doctrine of human rights aims at recognizing the fundamental prerequisites and securing for individuals the necessary conditions for leading a minimally good life (1987: 561). Therefore in respecting human rights, all people have the right to be treated as ends in themselves and not a means to an end. This is reiterated by the eighteenth century philosopher Immanuel Kant that "each of us has a worth or a dignity that must be respected" (Rachels, 1986:114). This dignity makes it wrong for people to violate other people's rights or even use them against their will. To treat a person as a mere means to an end is to use a person to advance one's own interest. This has been well articulated in the previous chapter bearing in mind that many of the mining activities in Uganda are driven by egoism. The notion of treating others as an end in themselves illustrates the inherent worth of humanity. Such inherent worth offers a moral justification for promoting and protecting human dignity. For example in the context of Uganda's mining industry, this can be through respecting people's rights as well as permitting them the freedom to participate in decisions affecting them.

One of the ways of permitting the local communities to participate in decisions affecting them is through their active involvement in the analysis of costs for mining proposals presented by the investors before Government can grant any licence. This is because they are hit hardest by the negative impacts of mining especially environmental damage which sometimes can be permanent, as well as major social and cultural costs. Usually the practice is that investors undertake their own

assessments. However, Government cannot wholly rely on the assessments and appraisals of the investors because they may transfer many of the costs onto the local communities, the employees and the country in order to increase and enhance the project's net commercial benefits. The Government could consider working with independent third party certifiers. Eco and social certification could also be a valuable addition to the current practices.

In view of this, the Government of Uganda ought to implement stringent procedures to ensure that investors consult with the local people in the mining communities in order to obtain their free and informed consent prior to approving or commencing any project affecting their lands, including granting exploration licenses and mining leases. Development is good for any society. However, pursuing development projects without local community involvement and consent is not ideal and can bring about a lot of conflict, as has been noted earlier in the study. Mining communities should therefore be supported to proactively participate and engage in their own development.

All the information concerning mineral development should be provided to the local community members to enable them make informed decisions. This information should consist of the activities that the investors intend to undertake, the likely effects on the environment, health and livelihoods of the local community members, the mitigation mechanisms for the negative effects as well as the ways through which the community will benefit from the activities. Where local communities are consulted, their decisions ought to be free from any form of coercion or pressure by Government and even the investors. This will not only enable the local community participate in decision making but will also contribute to reduction of conflicts arising between the investors and the local communities. In this way, the Government and the investors will contribute to upholding the right to free, prior and informed consent of the local community to development projects.

Additionally, the Government ought to obligate and compel investors to prepare comprehensive and transparent social impact assessments such as human rights assessment reports in order to evaluate the consequences of their proposed activities on to the local communities. In the reports, the investors should be able to identify any possible risks of future human rights violations and at the same time develop mitigation mechanisms and remedies for such violations. Such social impact assessments should be conducted prior to mineral exploration and also prior to mineral extraction in consultation with the local community. After each assessment, a report should be

made available not only to the Government but also to the local community. The local community should be helped to understand the content of the report.

With regard to the extractive industry, there is a set of principles known as the *Voluntary Principles on Security and Human Rights*. The Voluntary Principles on Security and Human Rights are “a set of principles designed to guide mining companies in maintaining the safety and security of their operations within an operating framework that encourages respect for human rights” (McFetridge, 2008:ii). The principles are important for protecting human rights, promoting development, and avoiding or reducing conflict since they align with many governments’ policy objectives. They also help extractive companies to align their corporate policies and procedures with internationally recognized human rights principles in the provision of security for their operations (Hoag, 2015). McFetridge further notes that the principles oblige companies to “conduct comprehensive risk assessments prior to operation and consult regularly with host governments and local communities about the impact of their security arrangements on those communities” (2008: A-4). When mining companies align their corporate policies to human rights principles, there could be less cases of human rights violations against the miners and the local community. This could be a step towards truly authentic development.

8.3 An ethic of Solidarity

With regard to the relationship between humanity and the environment as well as among human beings, this study proposes an ethic of solidarity. Since relationships and interrelatedness are the basis for all human society, moral concern and care for others including the environment is fundamental. The present generation has a moral responsibility for the well-being of the future generations. This means that the current generation should preserve the environment, making it worth inheriting by the next generation. This study argues that non-maleficence ought to be our top duty. Where the environment has been polluted or degraded, the existence of the human person is undermined. This is echoed by Murove who states that “a person can only be a person in, with and through not just other people but also in, with and through the natural environment” (1999: 10). The implication of this is that it is not only relationships with other people that matter but also relationships with the natural environment. The natural environment has a great impact on the wellbeing of humanity. Mutual dependency and co-operation is crucial for day to day living.

Being good stewards towards others means that we should stand in solidarity with them. Like Murove argues:

Because of the fact that our humanness has been contributed to by the community as well as those who existed in the past, the individual's interest should be linked to the interests of others so that s/he will contribute positively to those who will exist in the future (2005: 211).

This means that we exist because of others and because we are members of a community, we ought to promote the wellbeing of other members within the community. According to Hartshorne, this “not only promotes solidarity among all that which exists, but is also an indication of an authentic ethical existence in which people show concern for the well-being of others thereby enhancing harmony and mutual understanding within the community” (Hartshorne, 1974: 204). It is therefore an ethical requirement to pursue mining or any other economic activity in a way that enhances the well-being of the community as a whole, instead of the well-being of just a few individuals. Rather than continually pursuing economic activities on the basis of profit maximization, this ethic of solidarity offers us the opportunity to examine the effects of avaricious-driven economic behavior on the well-being of both the present and the future generations.

An ethics of solidarity requires that our human existence ought to reflect communion between humanity and the natural environment. The existence of humanity is closely attached to the existence of the natural environment because there is no delineation between human existence and that of the natural environment. Humans are an integral part of the environment and constitute just one aspect of existence and reality. This is reiterated by Devall and Sessions who assert that “humans are intimately related to the all-inclusive self-realization in the sense that if we harm the rest of nature then we are harming ourselves. There are no boundaries and everything is interconnected” (2000:149). The implication of this observation is that the degradation of the environment resulting from mining and other economic activities will have adverse impact on human existence of both the present generation as is the case already as well as the future generation.

Pope Francis notes in his encyclical *Laudato Si* notes that: “because all creatures are connected, each must be cherished with love and respect, for all of us as living creatures are dependent on one another” (no.42). The implication of this is that since we are all connected and dependent on one another, we are each responsible for the care of the environment. Investors must therefore respect

the environment. Thus a truly authentic development ought to show concern for the environment upon which humanity is dependent for its existence. It also illustrates the importance of relationships, relationality and interrelatedness among humanity and between humanity and the environment. We cannot continue to talk about the wellbeing of humanity without talking about the wellbeing of the environment as a whole. The ethical implications of this moral demand is that humanity must deliberately and intentionally get out of its “comfort zone” and embrace the actuality of relationships, interrelatedness and interdependency. It thus follows that such interrelatedness ought to be reflected in our thinking and actions.

An ethics of solidarity invites us to show concern and empathy for the plight of others, especially the voiceless and those who cannot fend for themselves. From the study, it has been observed that very often the local community members within the mining areas suffer most of the negative impacts of mining, and yet despite complaints, their voices are not listened to. Murove argues that “human actions are communicative and are responded to by other members of society”. He emphasizes that “it is therefore our ability to communicate and respond to the community which lures us into advocacy ethics which takes into account the interests of those who cannot fend for themselves and are living in inhumane conditions” (2005:214). As such, “there is no self that is meaningful apart from the well-being of others” (Samkange and Samkange 1980:52). Only through the “co-operation, influence and contribution of others, can one understand and bring to fulfilment one’s own personality” (Munyaka and Mohlabi, 2009: 70).

It is important to note that communicating and responding to the needs of the community could be one way of advancing and fostering the common good. Humanity is indivisibly one and all human beings, no matter whether they are living now or in the future, are related and interrelated to the extent that they constitute the same organic whole. This conceptualization of the common good implies that “economic activities ought to take into consideration the well-being of the natural environment and the future generations, and that wealth must be made accessible to everybody in society” (Murove, 2005:215). However, making wealth for instance mineral wealth accessible to everyone in society demands that the economy be aligned towards the advancement of human needs rather than wants. Nevertheless, advancing human needs ought to be kept in symmetry with the needs of the environment. This could be a step towards sustainable development. It is therefore

an ethical concern when investors immerse in a pool of wealth, while the local community are living in excruciating conditions and agonizing under poverty and ill-health.

8.4 Other recommendations

8.4.1 Enforcement and dissemination of environmental laws and policies

Government should promote dissemination of knowledge on environmental laws and mining laws to the local government leadership as well as the local communities in the local languages. It should further improve communication and access to information regarding specific exploration concessions, benefits to those specifically affected communities, and how any specific project will affect the communities' livelihoods (HRW, 2014:88). Many local people including the district local governments do not have information regarding mineral exploration in their communities. Given this ignorance, the investors have taken advantage of them.

In addition, there should be strict enforcement of environmental and mining laws and regulations. In other words, the environmental laws should move from paper into action. As observed earlier in the study, Uganda has a number of well written environmental laws and policies. Therefore the issue is not the lack of environmental laws but rather the enforcement of such laws. The rule of law should be reinforced to ensure impartial protection of people's rights by the Government and investors.

8.4.2 Improve environmental monitoring and compliance

There should be vigilant monitoring of mining and other development projects by the National Environmental Management Authority (NEMA). In order to enhance environmental monitoring, the Government should increase the budget for environmental monitoring instead of the environmental inspectors being dependent on the mining companies to facilitate their movements. In circumstances where the company facilitates the inspector, the report from the monitoring exercise may be biased and not transparent. This is because the inspector may report according to the demands of the company and not according to the environmental standards.

8.4.3 Development of clear policies for mineral resource development

The Government of Uganda should develop a robust public policy controlling mineral resource development in order to maximize public net benefits from the country's minerals, as well as realign public and private sector incentives with the health and wellbeing of the environment and ordinary citizens. The United Nations notes that the most important policy instruments are those that incorporate the cost of environmental degradation in national accounts, introduce payments for ecosystem services and tax reform, phase out environmentally harmful subsidies, strengthen property and land tenure rights and improve the regulatory framework (UN Millennium Project, 2005:14). The policy should guide mineral resource development to appropriate sites and clearly spell out the use of appropriate technologies. In the policy, the local communities should be allowed to reject mining proposals when the mining companies fail to comply with the set standards. Another option is for the local communities to legally fight mining when human rights and environmental abuses arise. As such, the policy should be translated into the local languages and made available to the local communities and leadership. This could be one way of increasing the communities' benefits from their mineral resources and at the same time enable the local community to hold the investors accountable on their promises to conserve and protect the environment as well as the people.

The Government, through the Ministry of Energy and Mineral Development, should develop a comprehensive communications strategy to foster proper communication about the country's mining sector. It is only when the citizens have the right information that they can engage with the investors and even State agencies on matters affecting them. This communication strategy should also clearly elaborate the methods to publically discuss the contracts between the Government and mining companies so that the public is aware of how they will benefit from the extraction of the minerals. It should also comprise a systematic approach to the way the mining sector engages with the local communities, instead of leaving each mining company to do as they please.

8.4.4 Re-examining the misconception of neo-liberal economic models

From the study, it is evident that the neo-liberal economic model is the driving factor behind Uganda's investment and development policies. It is important to note that the application of this model puts substantial pressure on the natural environment. Such models emphasize the notions

of homo economicus and Gross National Product (GNP) among other things. Murove notes that “GNP as an indicator of a healthy economy and a good market is deficient because it does not reflect the complex dynamics of poverty, illiteracy and effects of economic activities vis-a-vis ecological communities. For the GNP to give a true reflection of the well-being of society and the environment, it should be based on the welfare of our common existence instead of measuring only income” (1999:200). This thus implies that neo-liberal economic models of development need to be deliberately challenged and confronted because they undermine the resilience of nature. Other indicators such as the Genuine Progress Indicator and Green accounting among others could be used by the Government in order to improve the country’s GNP.

8.4.5 Intensify environmental education

As noted earlier, the Government of Uganda has a comprehensive environmental education strategy. However, even amidst it, environmental degradation and abuse continues. Since Uganda’s environmental education program should be intensified with the aim of changing people’s mindsets and behavior about the environment. As such, it should be continuous throughout the year especially the non-formal strategies that target those out of school. Furthermore, environmental educational should practically target all the sectors of the economy seeking to raise public awareness on environmental issues more broadly. The United Nations Environmental Programme (UNEP) notes that “an educated public can be one of the most powerful weapons in the world’s battle against harm to the environment” (UNEP, 2007). This is true, but it is hard to fault the poor for choices that degrade the environment in the absence of other choices/alternatives. Nevertheless, imparting environmental knowledge could go a long way to create an informed public, one that clearly understands the implications of its activities on the environment.

In his book “*Prosperity, Poverty and Pollution*”, Nurnberger discusses agents of change which command “the full range of levels of competence” (1999:361). Among the most important stakeholders in passing on environmental education is the media (particularly print, broadcast and internet media). Anderson makes a thorough discussion about the influence of the media in environment-related issues such as raising environmental awareness and policy-making (1997:84). The media is a platform where change can be initiated. In this era of virtual reality and cyber age, internet media would go a long way to educate the public on environmental issues, environmentally friendly behavior as well as provoking, challenging and revealing beliefs, principles and policies which

symbolize tenets that are not socially and ethically adequate, and negatively impact the wellbeing of society. However, the Government of Uganda should first and foremost build the capacity of the media to report on environmental issues by providing them with both general and specific environmental information. One way through which this could be done is by means of regular press conferences and briefings.

More still, religious and traditional institutions and leaders tend to play a significant and critical role in how people act. These leaders should also be targeted and equipped with environmental information so that they are able to pass it on. Through structures and institutions with which people identify with and have a strong inclination to, they can be made aware of the seriousness of the environmental crisis so that they come to appreciate their role in curbing it. This could also enhance peoples' sense of social responsibility and proactive environmental citizenship, all of which are positive steps towards enhancing their environmental stewardship role.

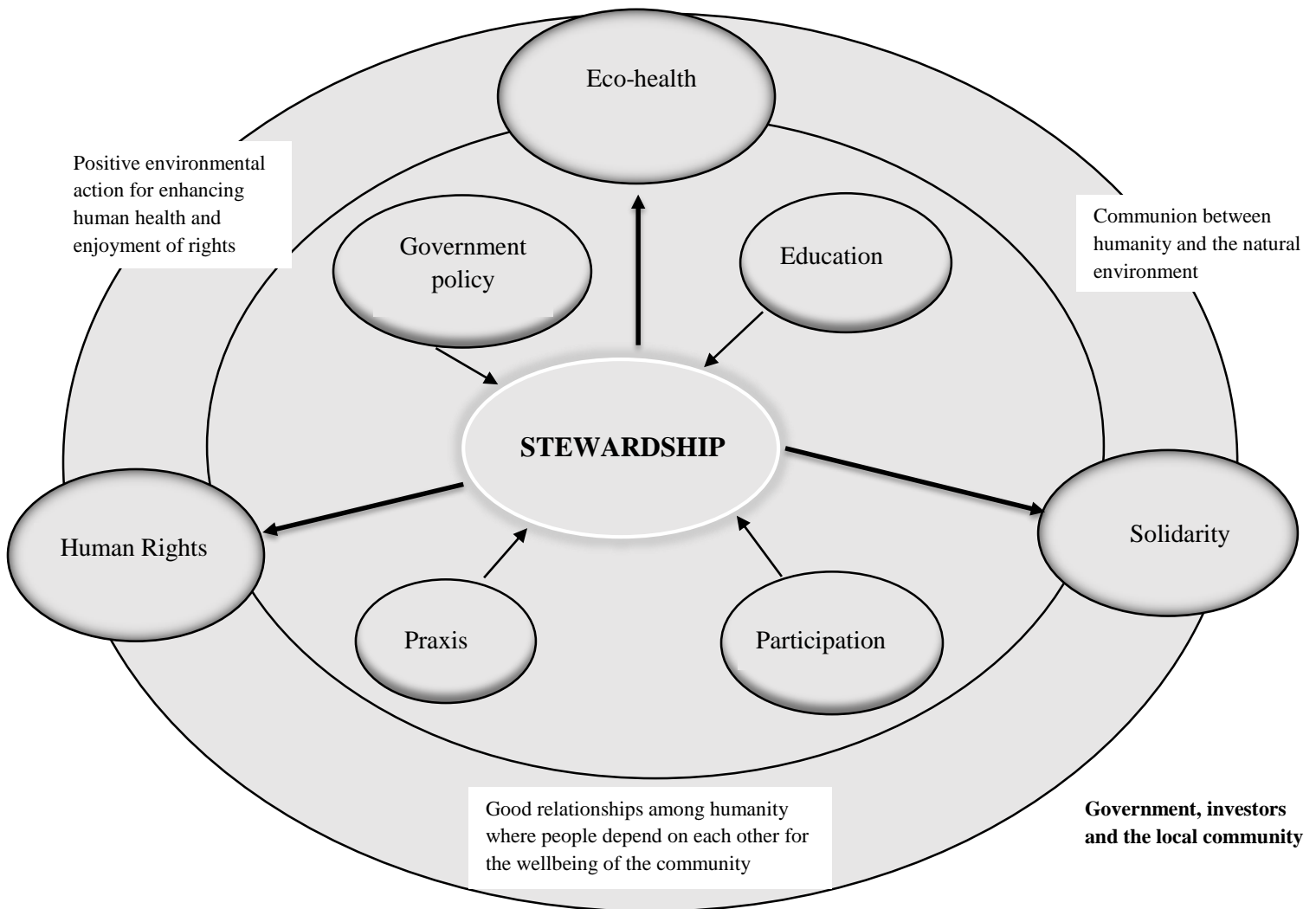
8.4.6 Recognizing the role of special groups in environmental conservation

There is need to create environmental awareness across all groups in society in order to bring about concerted effort towards environmental protection. As such, the Government of Uganda should recognize special groups and the role they can play in environmental conservation. Special groups such as women, children and youths should be mobilized to unleash their potential in environmental conservation and protection. Agenda 21 in its Chapter 24 echoes the role of the State in integrating women in environment and development. Similarly, Chapter 25 of Agenda 21 recognizes the role of children and youths in environmental conservation. It states:

The youth comprise nearly 30 per cent of the world's population. The involvement of today's youth in environment and development decision-making and in the implementation of programmes is critical to achieving sustainable development. Children not only will inherit the responsibility of looking after the Earth, but in many developing countries they comprise nearly half the population. Furthermore, children are highly vulnerable to the effects of environmental degradation. They are also highly aware supporters of environmental thinking. The specific interests of children need to be taken fully into account in the participatory process on environment and development in order to safeguard the future sustainability of any actions taken to improve the environment (UNCED, 1992).

It is true that the current generation of youth and children is the next generation of future leaders and so their way of thinking about environmental issues is critical in shaping tomorrow's environment. This implies that children and youth should be equipped with environmental information and also be given opportunity to actively participate in decisions concerning the environment because the decisions not only affect their lives in present times but also have a great bearing on their future. Therefore giving them the opportunity to participate in decision-making will equip them with the intellectual ability to garner support and contribute unique perspectives that take their needs into consideration.

Figure 7: Promoting sustainable mining in Uganda: A holistic ethical framework



Source: Schematic illustrating the findings of the study

The above illustration shows a holistic ethical framework for promoting sustainable mining in Uganda. Given the several insufficiencies in the current mining practices in Uganda that have been elaborated throughout the thesis, this study proposes this framework. The study envisages that the framework could help address the underlying challenges with in Uganda's mining sector that have adverse impacts on the environment and the society. The framework aims at ensuring the involvement of varied actors in averting the crises that may occur as a result of unsustainable mining. This is because everyone's contribution matters. The schematic presents three broad constituent parts (eco-health, solidarity and human rights which are connected to one another. These constituent parts revolve around the ethics of stewardship. Eco-health, human rights promotion and solidarity are presented in a cyclic manner around stewardship to suggest the principle of systems thinking and a sense of responsibility towards both humanity and the environment. It acknowledges the importance of communion between humanity and the natural environment arguing that the health of the environment is equally important as that of humanity. As such, positive environmental action is crucial for enhancing both human and environmental health. In the context of mining, this would mean engaging in mineral development while ensuring as minimal damage to the environment as possible. Where there is minimal environmental damage, there is a likelihood of minimal human health issues resulting from environmental degradation.

This framework could also ensure that good relationships exist between and among humanity. Good human relations would mean that people depend on each other and that all humanity is treated as an end in itself. This is the true spirit of solidarity. It is important to note that in order to achieve sustainable mining, everyone's (Government, investors, and the local community) contribution matters. Each of these actors has a role to play and thus they need to work together to promote mining that is truly sustainable.

In each of the constituent parts of the framework, government policy, education, praxis and participation are fundamental. All these should contribute towards stewardship. Government policy entails enforcement and dissemination of environmental laws and policies. Furthermore, it includes development and enforcement of clear policies for mineral development in order to maximize public net benefits and realign mining sector incentives with the health and well-being

of the environment and the local communities. It also involves reexamination of neo-liberal economic policies which put substantial pressure on the environment.

For positive environmental change to occur, there is need for an informed critical mass. Such an informed critical mass can be realized through intensifying environmental education as well as promoting moral and civic education. This education should practically target all sectors (both public and private) in order to change mindsets and behavior so that people appreciate the importance of the environment and their role in curbing the ecological crisis. Institutions should be required to develop an environmental education syllabus for their workplace with topics centred on key environmental challenges in Uganda. They should also conduct environmental awareness among their staff. Further, at the grassroots, environmental education could be promoted through different forums for instance, during the village meetings. Media, religious and cultural leaders should also be trained and equipped with environmental information so that they are able to pass it on to the people. In articulating the power of education, Nelson Mandela (2012) argued that education is the most powerful weapon which we can use to change the world. This means that through environmental education the citizenry can be empowered to become agents of environmental conservation and stewardship.

Another factor to consider in each of the tracks is praxis. Praxis encompasses a shift from theory to practice. After the people have been equipped with knowledge on sustainable mining and environment conservation, praxis would require them to apply that knowledge within their communities as they strive towards better mineral resource development as well as environmental management and conservation. Praxis could entail protesting in case of environmental damage, monitoring investor's actions and calling investors to ethical practices in case of violation of rights and the collective good. In order to ensure sustenance of environmental conservation, efforts must begin with the individual. Individuals ought to take it upon themselves to conserve their environment. There should also be vigilance in monitoring to ensure compliance to environmental and mining laws. There is no use of having good policies on paper when their implementation and enforcement is insufficient.

Closely related to praxis is participation. It entails collective responsibility and involvement of all actors in the decisions pertaining to mineral development and environmental protection as a way of encouraging them to be good stewards. Mineral resource development in Uganda must be

critical, purposeful and must permit participation for the society and environment. Participation helps in identification of community needs with regard to mining projects. It also supports the development of appropriate contextual responses to the challenges identified by the local community. This then leads to the establishment of communication channels between the Government, investors and the local communities in order to better understand and respond to the problems identified. Participation could be in form of local community involvement in environmental impact assessments and decision making processes concerning mining projects without any form of coercion; local community monitoring of mining activities to ensure compliance; brainstorming; attending meetings; and engaging in protests in case of any abuse resulting from investor activities.

8.5 Conclusion

This chapter was concerned with recommendations for a holistic ethical framework of enhancing sustainable mining in Uganda. It is important to note that for sustainable mining to be real, an all-inclusive ethic has to be adopted; an ethic that will promote and enhance a harmonious interaction between and across the three components (environment, society and the economy). Since the health of both the natural environment and the people is fundamental for a truly authentic development, the study proposed an eco-health approach to mineral development. The eco-health approach enhances the health of both the natural environment and the people. The chapter has noted that one of the key components of this approach is local participation which not only helps in identification of community needs, but also supports the development of context-appropriate responses to the challenges identified by the local community. This then leads to the establishment of communication channels between the investors and the local communities in order to better understand and respond to the problems identified.

Another component of the proposed holistic ethical framework is respecting, safeguarding and upholding human rights of all the people by treating them as ends in themselves, because all people have a worth and dignity that must be respected. In view of the human rights approach to development, people ought to be given the freedom to participate in decisions affecting them as one of the avenues for reducing conflicts arising between the investors and the local communities. The study also notes that when mining companies align their corporate policies to human rights

principles, there could be fewer cases of human rights violations against the miners and the local community. This could be a step towards truly authentic development.

An ethics of solidarity is also proposed as one of the components of the holistic ethic for ensuring sustainable mining in Uganda. The chapter notes that we have an ethical obligation to promote the wellbeing of all members of the community including the environment because relationships and interrelatedness are the basis for all human society. It therefore follows that a truly authentic mineral development ought to be sensitive to the needs of both the present and the future generations, as well as those of the natural environment.

Government policy, environmental education, praxis and participation are also crucial for this holistic framework. Recommendations here include the enforcement and dissemination of environmental laws and policies; improvement of environmental monitoring and compliance; development of clear policies for mineral resource development; intensifying environmental education; and recognizing the role of special groups especially women, youth and children in environmental conservation. The proposed framework in this study seems to justify itself as a framework that is ethically informed and comprehensive because it is sensitive to a range of challenges pertaining to development and environmental issues in Uganda.

CHAPTER NINE: SUMMARY, CONCLUSIONS AND CONTRIBUTION OF STUDY

9.0 Introduction

The previous chapter proposed an ethical paradigm for sustainable mining in Uganda. This current chapter presents a summary and conclusions from the study. It brings to an end the issues of concern of this thesis in a concise form. The thesis aimed at ethically critiquing the contribution of Uganda's mining sector to development, society and the environment. This has been achieved through engagement with a number of studies on the topic. This chapter is divided into three major sections. The first section presents the summary, the second section presents the general conclusions from the study and the last section is a contribution of the study to the existing body of knowledge.

9.1 Summary

This section provides a summary of the major findings from the study chapter by chapter.

Chapter One introduces the study and gives a general background. The chapter notes that this study was born out of the passion towards nature that I developed from my early childhood. Having been raised in the countryside, I grew up surrounded by extensive natural green vegetation. However, it has disappeared and the land is now occupied by buildings, factories and gardens. There is therefore an escalating environment crisis in Uganda. Another motivation for this study is the significant commercially viable reserves for minerals and the discovery of commercial oil deposits in the Albertine graben in 2006. The discovery was greatly applauded by the Government that it would help the Uganda economy grow from a low income country to a medium economy in the near future through provision of jobs and increased GDP. As a result, there are a number of investors joining the mining sector. Meanwhile, the Government makes no mention about the adverse impacts of oil and mineral exploration and production on the environment and the society, yet such development projects if not properly undertaken could instead halt development.

The chapter notes that some research has been undertaken on the mining sector in Uganda, however, there is little perspective on the contribution of the sector to development, society and the environment from an ethical lens. I thus identified the gap that this study seeks to fill, the ethical critique of Uganda's mining sector. As a result, the desire to engage in the current debate

surrounding the environmental crisis coupled with the increasing investments in Uganda's mining sector motivated me to undertake this study. It stated the key research question: what are the ethical implications of the contribution of Uganda's mining sector to development, society and the state of environmental crisis? In answering this question, four critical questions were posed. These questions were to be answered through the achievement of four objectives. To reiterate, the objectives of the study were as follows:

1. To critically examine the activities of investors in Uganda's mining sector.
2. To assess the contribution of Uganda's mining to the economy, society and the environment.
3. To critically examine Government's response to the environmental crisis.
4. To propose an ethical paradigm for promoting sustainable mining in Uganda.

The chapter proposed a critical approach in seeking to answer the key research question. Through a critical research paradigm based on existing literature, the study was able to review mining and environmental laws as well as compare mining projects in the different areas of Uganda. It exposed the impact of the sector on the environment, society and the economy. It also exposed the weaknesses of the Government in addressing the environmental crisis in the country as well as social injustices, pointing out that the Government has remained insensitive to the plight of the local communities in the mining regions. From this exposure, I was then able to apply the ethics of stewardship and responsibility to prescribe a holistic ethical paradigm for ensuring sustainable mining.

Chapter Two discussed the theoretical frameworks that underpin this study. It demonstrated that the sustainable development framework is an appropriate approach for understanding, and evaluating the impacts of development activities on the environment, society and the economy. The chapter presented the definitions and meaning of sustainable development, some of the principles of the SD framework that are applicable to the study, and the major components and approaches of the SD framework. In this study, the sustainable development framework represents the relationship between the environment, society and the economy and points to the fact that for any activity to be sustainable it must take equal consideration for the society, the economy and, above all, the environment because true and genuine development cannot take place upon a deteriorating environmental resource base; neither can the environment be protected when

development excludes the costs of its destruction. Genuine development is therefore development that meets the triple bottom line where all three systems interact on an equal basis. For instance, it preserves the environment, promotes a healthy life and communities thrive while keeping the economy stable.

In using the SD framework, the study notes that human society and development are wholly-owned subsidiaries of the environment. Therefore the integration, understanding and acting on the complex interconnections that exist between the environment, economy and society is fundamental. With reference to mining, the SD framework could argue that mining cannot be done independent of the environment. This is because the environment provides mineral ores and deposits. Unsustainable mining not only affects the environment and society, but the economy as well in the long run. As such, all mining activities should seriously consider the environment, because without it, they cannot be undertaken. We also must remember that we are part of nature and not independent from it. Whatever activities we undertake that inflict harm on the environment, the effects will affect us. The chapter further notes that in as much as the SD framework faces several objections from a number of scholars, it still enjoys wide applicability because it brings together all the three elements (environment, economy and society). It does not undermine the environmental or social systems on which the economy depends. As such the SD framework provides us with the lens to evaluate the impact of mining on both the environment and development.

In addition to the sustainable development framework, this chapter also discussed the ethic of stewardship. The chapter notes that environmental stewardship demands that we take responsibility for the effects of our choices on the environment to ensure that it is sustainably managed for both the current and future generations. It offers an approach to the care and management of natural ecosystems, upon which human activities and habitats depend through conservation and sustainable practices. The welfare of present and future generations can only be secured through proper stewardship of the environment now, not tomorrow. This chapter notes that with regard to mining, environmental and social changes are bound to occur. Disruptions can impact the physical environment as well as the local communities in the mining areas. However, some of these impacts can be avoided or mitigated if companies are pressured to operate according to the best possible standards. These standards ought to be designed in a way that ensures the

respect for and well-being of the environment and the community. Therefore, it is necessary for all of us to seriously take on the role of being environmental stewards in everything that we do. We must ensure that we truly understand and appreciate the impacts of our actions and make the hard decisions necessary to ensure that we do not destroy all our natural environments just for the sake of trivial wants. The chapter further noted that stewardship also involves standing in solidarity with others where our interests ought to be linked to the interests of others so that we contribute positively towards those who will exist in the future. Such empathy towards the plight of others, especially those discriminated against, and whose voices regarding development projects are not heard underscores our stewardship role. Whether we seek an ethic for stewardship in the sense of ensuring a livelihood for the future generations, or in the sense of assuring quality in the natural environment, the urgency for an acceptance of a sensible ethic of stewardship is enormous.

Another theory discussed in this chapter is the ethical theory of consequentialism. Owing to the fact that the study intended to ethically critique the contribution of Uganda's mining sector to both development and the state of environment crisis, the SD framework as well as the environmental stewardship approach alone are not enough. There is need for an ethic that assesses the consequences of the activities of the mining sector on the environment, society and development, and therefore consequentialism is the appropriate ethic. Consequentialism evaluates the entire ecosystem, and not just sentient beings. Although consequentialism is not a completely satisfying theory based on the objections raised by most scholars, it is still able to provide an ethical lens which can help us to understand the impacts of mining on development, society and the environment. This is because it is able to accommodate diverse moral concerns that have claims to our attention. It is therefore fundamental in guiding and evaluating decision-making processes in contemporary society, including environmental policies and actions.

Chapter Three presented an overview of Uganda's natural environment. It started by providing the general background information on Uganda, mainly the location and size, relief, climate, vegetation, drainage, geology, population, and major economic activities. The chapter further discussed the components of the country's natural environment particularly biodiversity, water resources, land and forests resources, minerals, and the atmosphere including their current status. What is clear from the chapter is that Uganda's natural environment is deteriorating in quality and quantity. This is evident through the key environmental challenges of deforestation, loss of

biodiversity, declining quality of water resources and wetlands, land degradation, soil erosion, pollution, climate change and poor waste disposal among others. The chapter noted that the major causes and contributing factors to the environmental crisis in Uganda are poverty with 67% of the population either poor or highly vulnerable to poverty (MGLSD, 2013); population growth with 34.9 million people at an annual growth rate of 3.03 (UBOS, 2014b:12); urbanization at an annual growth rate of 5.5% and largely influenced by rural-urban migration (UBOS, 2014b:11); low government commitment to environmental conservation evident through degazetting of forest areas, wetlands, and other water catchment areas previously recognized as gazette reserves; and low budget allocation to environmental conservation efforts (Rwakabamba, 2009:125) as well as minimal judicial capacity in the jurisdiction involving violations of the right to a clean and healthy environment.

Chapter Four gave an overview of Uganda's mining sector. It highlighted the history of mining in Uganda noting that mining in the country started in the ancient times by artisans while formal mineral exploration started during the colonial times with the arrival of the British explorers. The major mineral occurrences in Uganda include industrial minerals such as asbestos, graphite, kyanite, garnet, talc, feldspar, kaolin and clay mainly in central and northern Uganda; gold, salt and base metals such as copper, cobalt, nickel, lead and columbite-tantalite, tungsten tin, beryllium, lithium, niobium, tantalum, bismuth and iron ore in the south west and Buganda region; and limestone, apatite, pyrochlore, vermiculite, iron, titanium, vanadium, zircon, baddeleyite, uranium, Vermiculite, phosphate and thorium in eastern Uganda.

The major investors in Uganda's mining sectors include large foreign exploration companies mainly involved in oil and petroleum exploration such as Total E & P Uganda, China National Offshore Oil Corporation (CNOOC) Uganda Ltd, Tullow Uganda Operations Pty Ltd, Tower Resources, and Dominion. The sector also has small scale investors mainly of Ugandan, Chinese and Indian origin who are mainly interested in speculative license trading, attracting foreign joint venture partners or buying from artisanal miners active on their sites. Another category of miners presented are the artisanal community miners who are the majority and they use the most rudimentary methods and tools to extract minerals. The chapter further presented Uganda's mineral regulatory framework which is aimed at ensuring that the country and its citizens benefit from the mineral resources. The framework comprises of institutions charged with monitoring and

controlling mineral exploitation; the mining laws; and the mineral taxation system - all of which are aimed at ensuring the mining is sustainable. More still, the chapter presented the investment code of Uganda and observed that the code has a clause on the protection of the environment which all investors must uphold, although in practice, this provision is not upheld by many investors.

Chapter Five discussed the contribution of Uganda's mining sector to development, environment and the local communities where mining activities are undertaken. The chapter noted that mining has presented unique opportunities and challenges. Some of the positive impacts of mining that are noted on Uganda's economy include revenue generation, employment creation, economic diversification and infrastructural development. On the other hand, the chapter noted that mining in Uganda is also responsible for land degradation; pollution of the atmosphere, water and soil; biodiversity loss; loss of property; displacement of people; and increased misunderstandings between the investors and the people and also between people and the government - all of which contribute to violations of human rights of the local people. The chapter showed that local communities have no voice in the decisions of the various mining projects and yet full endorsement and backing of the local communities is fundamental for genuine development to occur. As such, the local communities are dissatisfied with the activities of investors. At the same time, the Government seems to have failed in its duty to protect its citizens.

Chapter Six discussed the Government's response to the environmental crisis in Uganda. It presented the environmental regulatory framework including the key institutions charged with environmental protection; environmental laws and policies; as well as some of the international conventions and agreements on the environment which Uganda has signed and ratified. It also discussed the environmental impact assessment regulations in Uganda. The chapter showed that Uganda has a thorough policy and legislative framework for environmental protection, but noted that the proper implementation and integration of the framework in the investment policy was questionable. The chapter further noted that Uganda has a good mechanism for integrating environmental concerns in its development. This mechanism comprises environmental education and awareness campaigns which are all-inclusive, targeting both the formal education and non-formal educational sectors. One issue that emerged from the discussion is that the current environmental crisis in the country is not as a result of lack of environmental laws and policies or even lack of environmental education and awareness. This was based on the fact that Uganda has

substantive legislations addressing the different components of the environment. At the same time, the citizens are exposed to environmental education. However amidst all these, environmental conservation efforts in Uganda are failing because the people seem not to take their stewardship role seriously.

Chapter Seven analysed the activities in Uganda's mining sector through the sustainable development frame work and the ethical theory of consequentialism. The chapter showed that major ethical issues in Uganda's mining sector hinge on mineral resource governance and human rights - all of which have a bearing on achieving sustainable development. Poor mineral resource governance is manifested through lack of transparency and accountability, lack of participation of the local community in decisions affecting them, lack of adherence to the rule of law, and unresponsiveness from both the government and the investors to the people's grievances and complaints. The chapter also noted that activities undertaken by both government and the investors involved in mineral exploitation and extraction have led to complex human rights violations and abuses - sometimes with long-standing and irretrievable impact on the local community. The rights violated include the right to a clean and healthy environment; the right to health; the right to decent working conditions; the right to ownership of property; the right to adequate and fair compensation; the right to food; the right to clean and safe water; the right of access to information; the right to remedy; the right to education; and the right to development.

The chapter also noted that it is not only human rights that are violated but also animal rights. Many forms of biodiversity in Uganda have been displaced, while others have been killed as a result of pollution and clearing forests to pave way for mining. The chapter argued that unless mineral resource governance and rights are upheld, mining in the country will continue to be unsustainable. It emphasized that the rights of both people and other forms of biodiversity are important and as such, must be highly respected and protected.

The chapter further observed that egoism is a driving factor for many of the mining activities in Uganda. Such egoism is evident through self-interest which is concerned with the pursuit of investors' welfare to the exclusion of regard for the local community. This has led to a wide gap between the wealth generated by the mineral resources and the wellbeing of the people, both present and future generations. As a result, mining has led to unhappiness of the majority (the local

community) while promoting happiness of the minority (the investors and a few political elites). This illustrates government's failure to ensure sustainable mining that is beneficial to all.

Chapter Eight noted that ethical business practices ought to be grounded in a strong ethical mechanism that guides and influences the conduct of the people. As such it proposed a holistic ethical paradigm to ensure sustainable mining in Uganda. This paradigm was informed by the ethics of stewardship which is an ethic of responsibility discussed in Chapter Two. The proposed framework encompasses eco-health, human rights and an ethic of solidarity. This paradigm is supportive of the incorporation of ethical values into decision-making, demands human readjustment in dealing with the environment while pursuing development, and demands inclusiveness of all citizens in their own development as one of the ways of enabling them attain their full potential. It takes into consideration both the needs of the natural environment and those of humanity for the present and future generations. It includes of an awareness-based ethics where investors ought to ensure that natural life conditions are favourable for the existence of humanity, as well as other forms of biodiversity. It also includes an ecosystem ethic where human beings understand that they are part of the biotic community and therefore respect the environment when undertaking mineral development projects. In so doing, the framework emphasizes development and relationality between humanity and the environment and between humanity.

Other recommendations that comprise the proposed ethical paradigm include the enforcement and dissemination of environmental laws and policies; improvement of environmental monitoring and compliance; development of clear policies for mineral resource development; intensifying environmental education; and recognizing the role of special groups, especially women, youths and children in environmental conservation.

Chapter Nine is the summary and conclusion of the study.

9.2 Conclusions

There is a lack of political-will for environmental conservation and protection in Uganda. This is evident through the lack of sufficient financial support to environmental conservation efforts. Uganda has a very good environmental legal framework on paper but its enforcement and implementation is still a challenge because the National Environmental Management Authority is underfunded. As a result, it cannot effectively carryout its mandate. This illustrates the irony of

Government which on one hand is claiming to be concerned about the environmental degradation in the country but on the other hand cannot sufficiently fund and staff environmental conservation efforts. Good environmental as well as mining laws and policies alone cannot contribute much towards environmental conservation unless there is political willingness to facilitate their implementation. Political willingness would imply that the Government adequately funds and staffs the National Environmental Management Authority to enable it undertake and fulfill its mandate.

The Government's approach to development of the mining sector as well as the other sectors seems myopic, biased and opaque. From the study, several disagreements and disputes between the investors and the local communities have been reported. There are also gross human rights violations but government is silent about the misconduct of the investors towards its citizens. As such, there seems to be a wide gap between the wealth generated by the minerals and the wellbeing of the people. Even where civil society groups have openly criticized the investors about their violation of human rights and escalating the environmental crisis in the country, no efforts have been made by government to respond to this. They are instead referred to as enemies of development. Government seems to be more concerned about the economic aspect of development paying less concern to the social and environmental aspects. Where the environment and the society are not accorded adequate attention, development cannot be sustainable. The Government may have to use the revenue generated to restore the degraded environment. Worse still, members of the next generation may have to incur the costs of environmental restoration or else risk living in a degraded environment which is not conducive for their health.

The Mining Act requires investors to undertake an environmental impact assessment but does not require them to conduct social impact assessments as a result of mineral exploration or any other activity related to mining. This could partly explain why the investors are not very much concerned about the rights of the local people within the mining areas. This is evident through the increasing conflicts arising between the investors and the local people.

From the study, it is evident that the mining costs are usually ignored by the Government since it only focuses on the market value of the minerals. For instance, with regard to the oil and gas exploration and production in the Albertine graben, several reports are "fronting" the benefits or wealth the country can earn in the production of its 3.5 billion barrels. Among the benefits is

spurring economic growth, creating employment, fostering technology transfer and generating revenues for investments in development of other strategic sectors such as infrastructure and human resource development (National Planning Authority, 2013:47-50). No mention is made by Government about the negative effects of mineral and oil exploration and production on the environment and the general living standards of the local people in the mining areas. In the Albertine graben, the possible wealth to be generated is exaggerated over the likely environmental and social costs that could arise from the oil discovery. It is not surprising that even before production begins, the local people are already complaining about the damage arising from oil exploration to their environment and property. Sustainable management of Uganda's mineral resources may remain a dream if the government as well as the investors do not take the environmental and social aspects of sustainable development into serious consideration, but rather choose to focus on the economic aspect.

There is no doubt that the governance of the country's mineral resources is still a challenge. Poor natural resource governance is evident through a) lack of transparency where the public has no access to all the information on mineral development, especially the contracts, receipts and revenues collected from the mineral resources; b) lack of rule of law where the investors who fail to protect the environment are not reprimanded inspite of binding laws; c) lack of participation of the local communities in decisions on mineral development which is responsible for conflict and misunderstandings between the communities and the investors; d) poor accountability as a result of lack of information by the local community on the activities of the investors and Government in mineral development; e) unresponsiveness from the Government as a result of failure to listen to the people's complaints regarding the impact of mining on their well-being and environment and; f) gross human rights violations. With such challenges in the mining industry, good governance of the country's mineral resources will only be an illusion.

From the study, it is evident that Uganda has a comprehensive institutional, policy and legal and framework on environmental protection and conservation. However, proper enforcement and implementation of the environmental policies and legislation remains a big challenge. This is attributed to insufficient funds to undertake monitoring visits at the mining sites in order to establish company compliance to environmental laws; low budgetary allocations to environment protection; and minimal judicial capacity in the jurisdiction involving violations of the right to a

clean and healthy environment, among other factors. In addition, Uganda has a comprehensive environmental education and awareness strategy targeting the different categories of people but a lot remains to be desired with regard to environmental conservation and protection. The current environmental degradation in the country shows that many of the people are still ignorant about their contribution towards environmental conservation. In other words, their response to the environmental problem does not seem to reflect the efforts government has put in training and creating awareness about the environment. At the same time, compliancy to environmental regulations and standards by investors in Uganda's mining sector is still a great concern.

A wide gap exists between the wealth generated by the resources and the wellbeing of the people. This is evident in the unfair distribution of the costs and benefits of mining in Uganda. For instance, in many of the country's mining regions, local communities and populations most directly affected by the mining development seem to benefit less from such developments and yet they suffer the negative impacts most. For example, Karamoja is one of the regions in Uganda having the "highest poverty index where over '80 per cent of Karamajongs' (UNDP, 2013) live below the poverty line and the region lags behind the rest of the country on all socio-economic indicators". A study by UNICEF shows that "the Human Poverty Index (HPI) in Karamoja is above 53 per cent compared to the 28.8 per cent national average" (UNICEF, 2014). Many of the minerals in Uganda are located in Karamoja. The high rates of poverty suffered by the Karamajongs indicate the unfair distribution of costs and benefits accruing from mining activities in the region.

9.3 General conclusion and contribution of the study

The study set out to ethically critique the contribution of Uganda's mining sector to development, society and the environment in order to establish whether they are investors or infestors. It has shown the ways in which the activities have impacted the economy, society and the environment. What has been demonstrated is that there are still incongruities and clashes between mineral development and the environment which have largely contributed to the current environmental crisis in the country. Therefore, from the study, Uganda's mining sector comprises of both investors and infestors.

The study further proposes a holistic ethical paradigm to ensure sustainable mineral development, social development and environmental management. This paradigm includes the eco-health and

human rights frameworks as well as the ethics of solidarity. Whereas scholars have written about each of the frameworks separately, no scholar has discussed all the three together to respond to the contradictions between development and environment. Therefore, the design of the proposed paradigm is the unique contribution of this study to the existing body of knowledge. The study argues that the proposed paradigm could be a counter balance to make investments and development projects more inclusive; value the environment; enable local participation and also help humanity rethink and reconsider its place in the universe. It challenges the investors and the Government of Uganda to re-examine their approaches to development and investments. My hope is that this study is a small contribution to the much needed process of critically transforming the current practices of investors not only in the mining sector, but also other sectors in order to bring about development that is truly sustainable and addresses the contradictions between development and the environment.

The study could also motivate researchers in relevant fields to conduct further research on sustainable development, with due focus on wider ethical values, and their application to particular regions. Using Pienaar's expression cited by Sonene Nyawo, "through the study I might only have laid a foundation and a couple of bricks for a two bedroomed house. Others may come along and complete the building. Some may even build an extra room and years later the developer might tear it down to rebuild it to be an office space" (2015:217).

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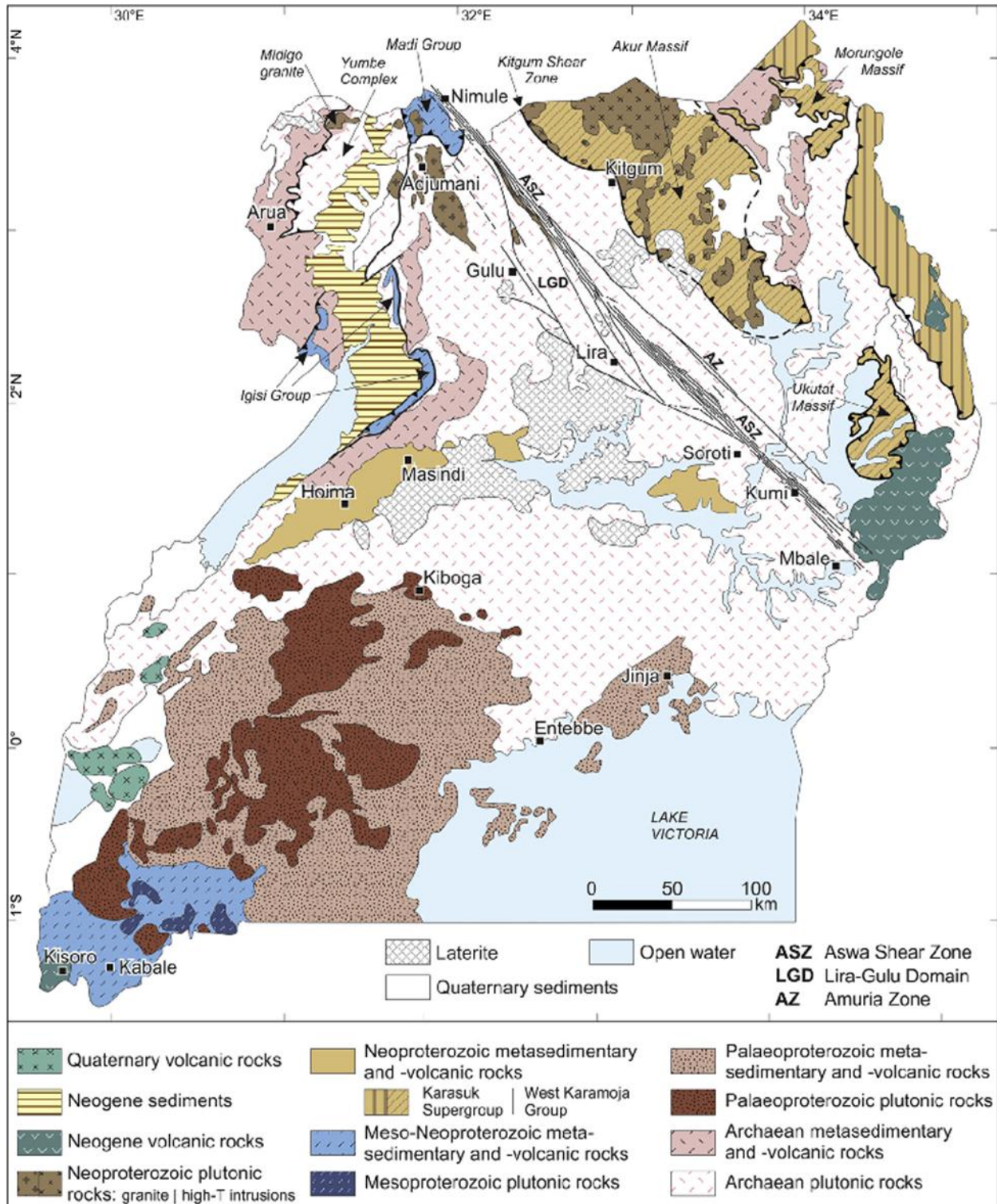
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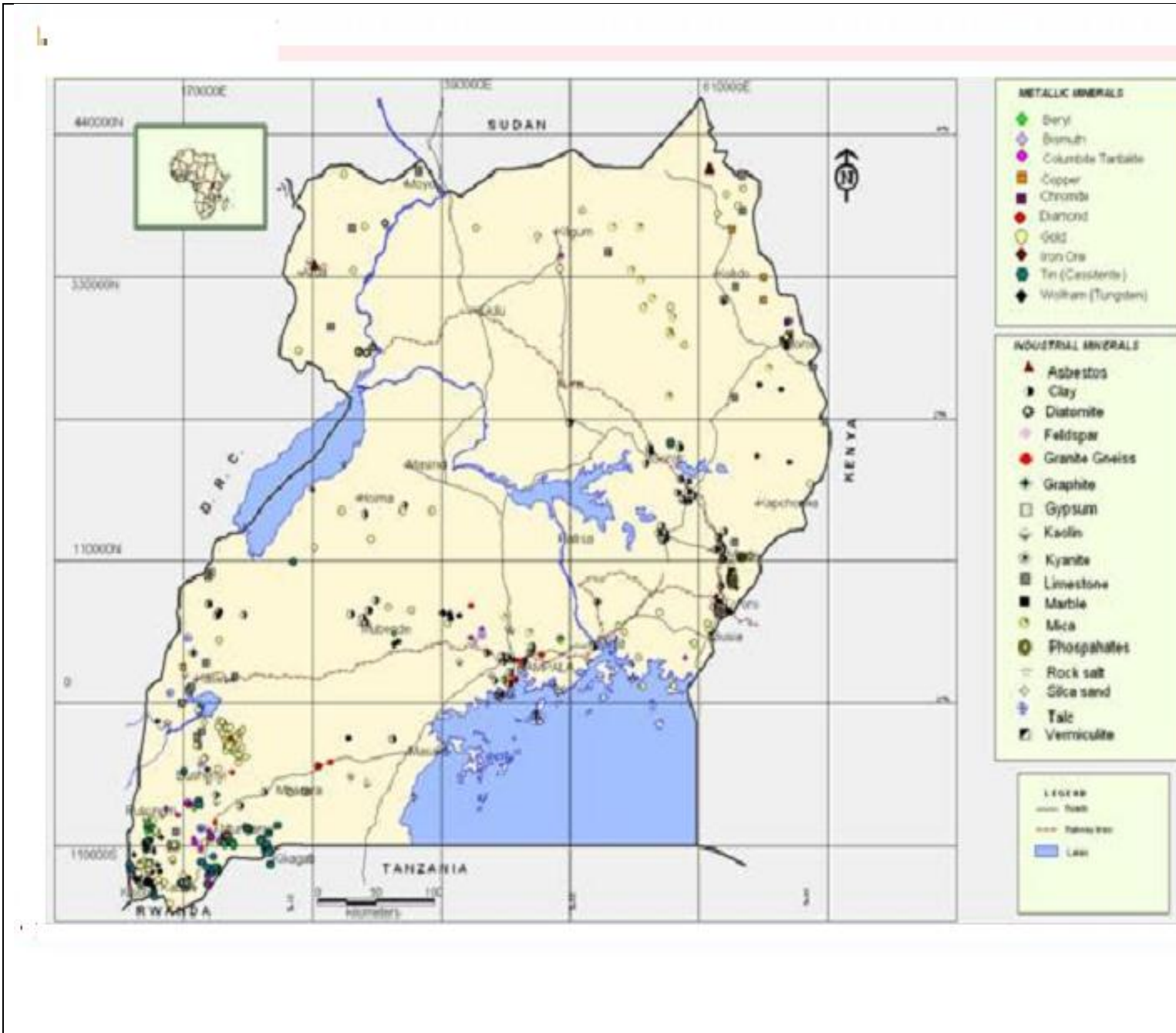
APPENDICES

Appendix I: Uganda's Tectonic thermal domains



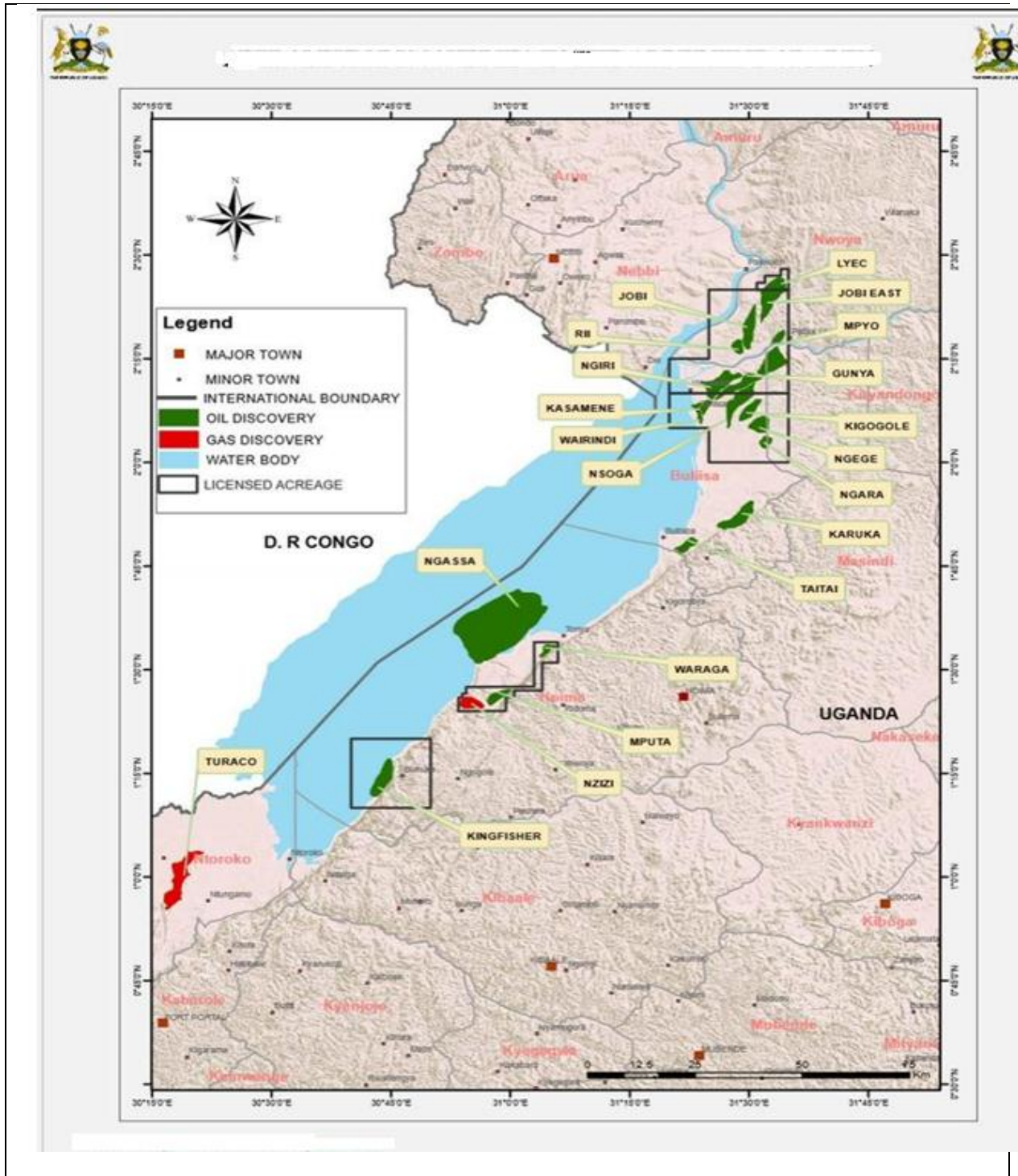
Source: Saalmanna, K. Mantta, I., Nyakechoc, C., Isabirye, E. 2016.

Appendix II: Mineral Occurrences in Uganda



Source: Ministry of Energy and Mineral Development

Appendix III: Oil and Petroleum Discoveries and Exploration in the Albertine Graben



Source: Petroleum Exploration and Production Department, 2014