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South African transnational mining companies and environmental impact assessment in the Democratic Republic of Congo

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South African transnational mining companies and environmental impact assessments in the Democratic Republic of Congo.

By

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A Research Report submitted to the Faculty of Science, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Science (Environmental Sciences).

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Johannesburg February, 2015

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DECLARATION

I declare that this Research Report is my own, unaided work. It is being submitted for the Degree of Masters of Science (Environmental Sciences) at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.

_____

(Signature of candidate)

_____31_____day of__January_____2015____in_Johannesburg_____

ABSTRACT

This study examines the practice of environmental impact assessments (EIAs) by South African mining transnational companies (TNCs) operating some mining projects in the Democratic Republic of Congo (DRC). It analyses whether and how South African mining TNCs carry out EIAs for their mining projects in the DRC, especially whether they follow (1) the DRC EIA policies, (2) the South African EIAs policies (3) international EIA policies, or (4) internal company policies. It also examines what motivates the companies to follow any of the policy path, by assessing whether financial or policy regimes evaluations motivates the TNCs to follow the certain path. Through the case studies of AngloGold Ashanti and Metorex (Pty) Limited, the study demonstrates the complexity involved in making decisions on choosing a policy path to follow which confronts TNCs. The conclusion we draw from this study is that TNCs do not follow a single policy path in carrying out EIAs but integrate a number of policies and standards and the integration of various policies and standards demands highly qualified and well trained staff as well as availability of an enabling scientific and research infrastructure within the host country.

Keywords: environmental impact assessment; South Africa, transnational mining companies; business and sustainability; DRC.

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LIST OF ABBREVIATIONS

AAM	African Associated Mines
CODELCO	National Copper Corporation of Chile
DPEM	Department for Protection of the Mining Environment
DRC	Democratic Republic of Congo
EIA	Environmental Impact Assessments
EIS	Environmental Impact Studies
EMS	Environmental Management Systems
EMPP	Environmental Management Plan of the Project
ESIA	Environmental and Social Impact Assessment
IFC	International Finance Corporation
LDCs	Less Developed Countries
NEPA	National Environmental Policy Act
R&D	Research and development
TNCs	Transnational Companies

CHAPTER 1 INTRODUCTION

1.1 General Introduction

Over the last few decades, the importance of environmental management has increased dramatically and therefore has been widely adopted in the legislative frameworks and public policies of most countries (Coenen, 2008). Mitchell, (2001:6) states that environmental management covers decisions and actions "concerning policy and practice regarding how resources and the environment are praised, protected, allocated, developed, used, rehabilitated, remediated and restored, monitored and evaluated". Environmental management deals with an important dilemma of finding a balance between the rapid depletion of natural resources used to meet the needs of a growing world population and the worsening environmental degradation (Kapoor, 2001). In dealing with this dilemma, most countries have called on businesses to account for their actions on the environment and to consider environmental sustainability issues in their operations through policies, laws and regulations that prioritise environmental impact assessments (EIA).

An EIA is a major environmental management tool, which could directly address the environmental impacts of development projects that may negatively affect the natural environment. The origins of EIA legislation lie in the National Environmental Policy Act (NEPA) (1970) of the USA (Garb, Manon, and Peters, 2007; International Association for Impact Assessment, 1999; Jay, *et al*., 2007; Mitchell, 2001). For the first time in environmental public policy, legislation proposed a systematic approach to assess and predict environmental impacts (Garb, *et al*., 2007). Its drafters aimed to reform decision-making processes and mainstream development priorities "in a way that would be enforceable and subject to external review" (Caldwell, 1993:5).

According to the International Association for Impact Assessment (1999:1), an EIA is "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made". In spite of possible variations, the principal stages of an EIA are screening, scoping, assessing impacts, reviewing, implementing and monitoring/auditing

(Garb, *et al.*, 2007). The content of an EIA, and its institutionalisation, have gradually developed throughout the world from being a tool for measuring biophysical environmental impact to being a decision-making tool which considers environmental, economic, and social aspects (Jay, *et al.*, 2007).

In this modern world, an understanding of the negative and positive effects of business operations on the environment is paramount. The ideal situation is to have all business entities carrying out EIAs before they start any new business venture or when they modify already existing operations. However, the real business world is far from this ideal scenario (MMSD 2001). The business world has firms of various sizes and capacities, with various missions and values, and different perceptions on the environment. The pursuit of profits by businesses makes them sometimes disregard the norms and ethos of environmental management and sustainability. The consequences of businesses exploiting natural resources without paying due diligence on consequences on the environment are usually disastrous for local communities, a region and nations (MMSD 2001). The negative effects of such wanton exploitation of resources that does not cater for sustainability can be profoundly felt by the current and future generations, especially when they relate to mining activities.

This research analyses the policy and practice of EIAs by South African transnational mining companies operating in the Democratic Republic of Congo. It examines whether, how and when these transnational mining companies do environmental impact assessments in the country. It explains the laws and policies that govern the EIAs that these companies carry out in the country. It also analyses the key factors that motivate the transnational companies (TNCs) to carry out the EIAs and highlights some specific policy, operations and systems changes that may be necessary to the current regimes, institutions and operations.

1.2 Statement of problem, study aims and objectives

1.2.1 Statement of problem

In practice, EIAs have constantly been deployed as environmental management tools that guide project designs, planning and operations aimed at mitigating the negative environmental

consequences and enhance environmental sustainability. Yet, policies and policy implementation on EIAs vary in many countries. The strength and weaknesses in policy and policy implementation depends on various aspects, including whether the policy is implicit or explicit to the EIA; the capacity of institutions supporting the policy; and the general perceptions of actors about the implications of compliance and non-compliance.

The strengths of EIA policies and policy implementation and the practice of EIAs should be a concern for both companies and governments focusing on sustainability. EIA policies and policy implementations should even be of more concern to TNCs as these can affect their reputation, interaction with local communities and ultimately profits. The main challenge that TNCs face with regards to EIA policies and policy implementation is that their subsidiaries have to adhere to local regulatory requirements, whilst at the same time conforming to standards established at the headquarters. The standards that are set by the TNCs headquarters can either be strong or weak in comparison to local regulations, which can cause serious operational challenges. It is thus imperative to understand how TNC's navigate the EIA policy and regulatory terrains of foreign countries, and how they actually solve the dilemma of whether to comply with local laws/ policies or strictly stick to their established standards.

This study examines whether and how EIA policies and/or standards guide South African mining TNCs operating in the DRC. It assesses whether and how the company practices are motivated by financial considerations or an evaluation of the strengths or weaknesses of the EIA policies and policy implementations in the country. It also makes some recommendations on EIA policy and practice.

1.2.2 Study aims and objectives

The main aim of this study is to examine the policy and practice of EIA of South African mining TNCs operating in the DRC. There are four specific study objectives, including:

(1) To examine whether, how and when South African mining TNCs carry out EIAs in the DRC.
(2) To investigate and determine the laws, policies, and or standards that govern the EIAs carried out by the South African TNCs.

(3) To explore the key factors that motivate TNCs to carry out the EIAs.
(4) To recommend specific policy, operations and systems changes that may be necessary to the current regimes, institutions and operations.

1.3 Justification and contribution of the study

1.3.1 Justification of the study

Although there is plenty of literature on the impacts of mining on the environment, environmental management in the mining sector and business and sustainability, the literature is limited in its focus on the policy and practice of environmental impact assessments, especially by TNCs. Available literature assumes the practice of EIAs by domestic firms to be the same as that of TNCs, yet the characteristics of domestic firms are completely different from those of TNCs. Much of the available literature on TNCs and the environment also focus on the effects of the projects already in operations without much regards to what happens during the project design and feasibility phases, including EIAs. In addition, studies that have so far been carried out have not really analysed some TNCs from Africa that are investing in other African countries and in particular case of the DRC where insecurity and instability are a major issue of concern. The study of policy and practice of EIAs by African TNCs investing in African countries contributes immensely to the debates on the environmental ethos of TNCs from emerging or developing economies.

1.3.2 Contribution of the study

The study makes several contributions to the understanding of businesses and sustainability in general and South African transnational mining companies and the environmental impacts of their actions in foreign African countries such as the Democratic Republic of Congo (DRC) in particular. The study informs policy and practice in the two countries. It also influences the operations of South African transnationals on the African continent. The study contributes immensely to current debates on TNCs from the emerging countries and sustainability ethos or the environment and environmentalism.

1.4 Outline of the study

The study is divided into five chapters. Chapter 2 provides an overview of the literature on the policy and practice of environmental impact assessments (EIAs) by South African mining transnational companies (TNCs) operating some mining projects in the Democratic Republic of Congo. Chapter 3 presents the methodology for the study and the challenges encountered in carrying out the study. Chapter 4 presents the empirical evidence through two case studies of Anglo Gold Ashanti and Metorex which demonstrate the practice of EIAs. Both Anglo Gold Ashanti and Metorex are the South African TNC involved in mining projects for which they had to carry out some EIAs in the mining sector in the DRC. Chapter 5 analyses and discusses the findings presented in chapter 4. It also presents the policy and practice implications of the findings and also gives some insights on areas of further studies.

CHAPTER 2 LITERATURE REVIEW

2.1. Introduction

This chapter provides an overview of the literature on environmental impact assessments (EIAs) by South African mining transnational companies (TNCs) operating some mining projects in the Democratic Republic of Congo. It commences by generally exploring the literature on business and sustainability. This is followed by a review of literature on the environmental impacts of mining. It also reviews literature on environmental management in mining context and the practice of EIAs by TNCs. The chapter also points out the gaps in available literature, thus providing a justification for the study. But first, we examine the business and sustainability.

2.2 Business and sustainability

TNCs impact on the environment through activities that relate to extraction of raw materials, production and supply to consumers (Bowfield, 2013). The debates on business and the environment have a long history. Hoffman (2001) traces the history of the relationship between business and the environmental in the USA. He notes that in the 1970s firms paid little regards to the effects of their activities on the environment. The general belief prevalent among corporates was clearly stated by Friedman in the New York Times Magazine in 1970 that "any company making pollution control expenditures beyond what was required by law in order to contribute to the social objective of improving the environment was practicing pure and unadulterated socialism". Furthermore, a 1974 survey on company Boards found that many firms viewed investments in issues of the environment by corporates negatively and as unnecessary (Hoffman 2001).

However, there were several forces in the 1980 and 1990s that caused a radical change in the manner in which businesses perceived and subsequently invested the environment. In 1995, Michel Porter and Claas van der Linde wrote in the Harvard Business Review that unlike the popular belief of the 1970s, environmental protection was not a threat to firms but rather an opportunity and firms could increase their competitive edge through investing in the environment. Hoffman (2001:3) claims that Porter and van der Linde were arguing that any

“company that made pollution control expenditures beyond what was required by the law was practicing pure and unadulterated capitalism”. Because of these changes businesses began to view the environment as well as the natural resources not only as something to be exploited or preserved but as something to be managed.

It is in this milieu that the term sustainability emerged to refer to the management of various inputs that include natural resources by businesses (Bowfield, 2013). However, several definitions of the term sustainability have since arisen over the past years. The terms has evolved from being premised on natural and ecological facets of the environment, to include socio-economic, ethical and political aspects of societal interaction with the environment. In the context of business, sustainability has been defined differently. Whereas the Dow Jones Sustainability Indices have defined sustainability as a business approach that creates long term shareholder value by embracing opportunities and managing risks deriving from environmental, social and economic developments; a consultancy firm Accenture has defined it as the way an organisation increases its positive and reduces its negative effects on society, the environment and economy. Besides the business focused definitions of sustainability, the Brundtland Commission of 1987 further linked sustainability to sustainable development– a broad concept that was defined as “meeting the needs of the present generation without compromising the ability of the future generations to meet their own needs” (UNCED, 1992).

In general, the concept of sustainable development includes the simultaneous consideration of economic growth, environmental protection, and social equity in business planning and decision-making which ultimately produces positive outcomes to humanity (Schmidheiney, 1992). Sustainable development, as expressed in the Brundtland Report of 1987 is premised on the belief that social equity, economic growth and environmental maintenance are simultaneously possible. In fact, the Brundtland Report highlights the three fundamental components of sustainable development, namely the environment, the economy, and society, which later became known as the triple bottom line. The sustainable development discourse espoused in the report shows that it is important to apply integrated, sustainable solutions to a broad range of problems related to population, agriculture and food security, biodiversity, energy choices, industry, and more (Du Pisan, 2006). It further acknowledged the tension between economic growth and environmental protection. It concluded that economic growth

was essential, particularly in the developing world, but that there should be a switch to sustainable development, which would be environmentally sound.

In pursuit of sustainable development imperatives, Rondinelli and Bery (2000) point out that firms have created voluntary environmental programs to manage more effectively the environmental impacts of their plants, facilities, and operations. Rondinelli (2006) further comments that these sustainable development initiatives are especially important in transitional and developing countries around the world where environmental conditions are already hazardous, where social conditions often lag far behind those in richer countries, and where regulatory protection for people and the environment either may not now exist or is ineffectively implemented.

In this regard, the concepts of sustainability and sustainable development are of importance to this study which focuses on the policy and practice of EIAs by TNCs. In fact, the discussions on how to realise sustainable development have analysed the roles and contributions of TNCs as international actors that affect the environment, the economy, and society. This study contributes to the body of existing literature by analysing how TNCs minimise the negative effects of their activities through carrying out EIAs in the DRC.

From the sustainable development discourse which emphasises on the environment, the economic and the social, some authors have framed and developed a discourse and models that highlight these in terms of capitals which renders the concept of sustainable development practical. The leading agency in conceptualising sustainable development in capital form is the Forum for the Future, which has conceptualised the resources available for human progress as different sorts of capital—natural, human, social and manufactured. Ekins *et al*. (1992) observes that the four capital model was developed by economists at The World Bank and then further by the UK sustainable development charity, Forum for the Future, where a fifth capital—financial—was added for the purposes of clarity and completeness (Parkins *et al*. 2003).

The theory behind the five capitals model emphasises that businesses do not deal with a single capital but five different capitals namely natural, human, manufactured, social and financial. Explaining these further, whereas human capital consists of the health, knowledge, skills, motivation and spiritual ease of people as well as the things that enable people to feel good about themselves, each other, and to participate in society and contribute productively towards its well-being (wealth), social capital is all the different cooperative systems and organisational frameworks people use to live and work together, such as families, communities, governments, businesses, schools, trade unions, voluntary groups and manufactured capital comprises all of the human fabricated 'infrastructure' that is already in existence, namely the tools, machines, roads, and buildings, (Parkin *et al*. 2003). Financial capital reflects the productive power of the other types of capital, and enables them to be owned or traded and natural capital is in two main forms thus resources and services, (Porritt, 2005).

It is general believed that any business uses these five types of capital to deliver its product or services. In the five capital model, a sustainable organisation maintains and where possible enhances the stock of the five capital assets, rather than deplete or degrade them. Hence businesses should create a balance on these five capital items. Porritt, (2005) notes that sustainability, within the five capital model, should be understood in terms of the economic concept of wealth creation which allows business to broaden its understanding of financial sustainability. By considering other capitals, business can reflect on how wider environmental and social issues can affect its long-term profitability.

Furthermore, whilst the five capitals model accepts that all businesses have an impact on the environment, especially through energy consumption and waste production, it also explains that a strong consideration of sustainability by business depends on capital interdependence with the natural environment. The recommendations from the model include that businesses need to be aware of the limit to use of the natural environment, and operate within these limits. Business can for example institute measures such as eliminating waste, re-use or recycle the waste where possible and lowering energy consumptions (Goodwin, 2003).

The most important rule within the five capital model in relation to this study is the constant capital rule, which implies that development can be called sustainable, if it ensures constant

capital stocks or at least constant capital services (Constanza and Daly, 1992; Hartwick, 1997; Pearce, 1998; Pearce and Atkinson, 1998).Within this rule is the notion of weak and strong company in relation to sustainability. The weakness and strength of business in terms of sustainability is judged on whether the firm promotes economic rather than other type of capital. The relation between a company's use of environment resources and its pursuit of economic gains describes its efficiency against environmental exploitation termed eco-efficiency. By definition, eco-efficiency describes the degree to which a company uses environmental resources relative to its economic activity (Schategger and Burrit, 2000). Proponents of eco-efficiency claim that improvements in eco-efficiency enhance corporate contributions to sustainability (Callens and Tyteca, 1999). When analysing the relationship between sustainability and eco-efficiency one can distinguish between weak and strong improvements of eco-efficiency (Schategger and Burrit, 2000). Whereas strong improvements in eco-efficiency comprises of improved economic and environmental performance, weak improvements means improvements on a single dimension of these.

Based on the five capital model, this study's focus on the practice of EIAs by TNCs examines how firms condition the other four capitals in order to produce better natural capital. In this regards, the way TNCs deploy their financial, social and human capitals in mining operations through EIAs in order to promote sustainability of the natural capital is the core objective of this study. EIAs contribute in many ways towards ensuring harmony among the five capitals.

Another theory that also deals with business and sustainability is the theory of ecological footprint introduced by Ree and Wackernagel (1994). It measures the biologically productive area necessary to support current consumption patterns, given prevailing technical and economic processes. An understanding of the exploitable resources and the consequent footprints arising from the exploitation also makes business focus on the environmental impacts of their actions and mitigate the negative consequences. The main argument that arises from the theory of ecological footprints is that, if businesses were able to profitably exploit resources within the carrying capacities of the natural capital, then global sustainability would be achieved (Rees, 1992). In practice, businesses can calculate their ecological footprints using an ecological footprint calculator. These calculations help businesses analyse the areas which they are doing well and those areas that need improvements. Such calculations basically

attempt to limit the business' ecological footprint and promote sustainability in the long term. If conducted properly, ecological footprints calculations and other associated processes can have positive implications for how firms interact with the environment (Moffatt, 2000).

EIAs, which are the subject of this study, provide the baseline data and information necessary for many other processes and can provide basic information that can be considered in developing an understanding of the firm's ecological footprint. The results of calculations of ecological footprints are bold but easy to understand policy statements, whose effect is to promote sustainability, especially when they are made in a context where there are both formal and informal mechanisms and measures to encourage and enforce compliance among firms. Naming and shaming is one popular way to promote compliance and ensure that firms operate whilst considering the effects of their actions on the environment, (Rand and Nowak, 2009).

Whilst discourses on business and sustainability are potent in promoting positive interaction between firms and the environment, they mainly focus on the stage when business operations are already taking place and not the planning or design stages of the businesses. Thus implementation of some recommendations coming out of calculations of ecological footprints can be viewed as reactionary and not necessarily proactive (Moffatt, 2000). Furthermore, whilst the five capitals model also has been acceptable in many circles, it remains a model, and its effects upon implementation are marred by various systems and institutional weaknesses that are prevalent in the mining sector. Of importance though, is that the discourses and theories on business and sustainability highlights that it is important for any operational businesses to take into consideration the environment. In order for business to do so, there is need for them to analyse and understand the impacts of their activities on the environment.

2.3 The environmental impacts of mining

This study focuses on TNCs with operations in the mining sector. Mining involves "digging, removing soil, and separating out ores and non-metal minerals", (World Bank and International Finance Corporation, 2002:1). Similarly, Bell and Donnelly (2006) defines mining as a process of extraction or abstraction of mineral deposits from either the surface of the Earth or beneath the surface. Mining is one activity that has taken place since the early existence of humanity on earth and has facilitated human civilisation. It is an activity that has a global coverage and

is practiced at different scales in developing and the developed countries. Over time, the global demand for minerals has been increasing in line with progress in human civilisation hence Bell and Donnelly (2006) note that present day society is more dependent on minerals industry than in the past and the mining of minerals contributes to the sustained development of developed countries and helps to alleviate poverty and improve the quality of life for people in developing countries.

In the mining process, first, mineral deposits have to be located, they are then worked and subsequently processed and it is the working and processing of the minerals that can cause damage to the environment. Diamond, (2005) notes that in comparison to other extractive resources such as oil and gas, hard-rock and coal mining has greater environmental impacts. Studies that examine the environmental impacts of mining generally focus on the effects of mining on fauna, flora, water and air, (Bell and Donnelly 2006; Hester and Harrison, 1994; MINEO Consortium 2000). This means that where mining takes place, land is disturbed, the topography is changed, and the hydrological conditions are affected adversely.

However, Bell and Donnelly, (2006) points out that the degree of the impact that mining has on the environment varies depending on the minerals worked, the method of working, and the location and size of the workings. In spite of this, mining should generally be considered to impact on the living and non-living organisms that exist in the site where it takes place-thus the ecosystem. An ecosystem denotes a community of living organisms (plants, animals and microbes) in conjunction with the non-living components of their environment (things like air, water and mineral soil), interacting as a system. These biotic and abiotic components are regarded as linked together through nutrient cycle and energy flows. They can come in any size but usually encompass specific, limited spaces. (Millenium Ecosystem Assessment, 2005).

Mining generally has both positive and negative economic, social, and environmental impacts but unlike many other studies, we argue that the mining cycle framework is important in explaining the environmental impacts of mining. This approach departs from studies that explain the effects of mining on the environment in general. The mining cycle framework is ideal but portrays a mining project as consisting of stages or phases that begin with mineral ore exploration, mine development, mine operations/ active mining, disposal of overburden or

mine waste, ore extraction, beneficiation, tailings disposal, site reclamation and closure and ending with the post-closure period (Kitula, 2006). Each phase of the mining cycle is associated with different sets of environmental impacts. Using this cycle, the environmental impacts of mining are found in the construction, operations and mine closure phases (MMSD 2001).

During the mining construction and operations phase, land disturbance without proper control can be disastrous. As these phases involve digging and removing top soil, the most fertile land and all vegetation with its biodiversity disappear (MMSD, 2001). Hester and Harrison (1994) observe that at this stage waste rock is dumped on local land and leachate to local rivers. If mining construction or operations are carried out in a fragile and relatively closed ecosystem, such environmental disturbances affect the biodiversity and ecological systems of a region (Warner and Sullivan, 2004). Large amounts of dust are generated during this phase.

Worth mentioning is that TNCs now have the capabilities to construct and start mining operations nearly anywhere in the world due to their financial wherewithal and the advances made in technology. In most developing and least developing countries, mining constructions and operations are taking place in geographically remote areas. This disturbs biodiversity and makes ecosystems vulnerable to human activities. In the case of some countries near the equator, mining is taking place in many inaccessible and isolated parts of these countries and forests are cleared for the operations to take place.

Besides the valued mineral, the main waste of the operations phase of mining especially in areas where there is low metal concentration bearing ores are huge amount of soil that are dumped. Mining generates various types of waste, including overburden, waste rock, tailings and heaps of leach-spent ore (MMSD, 2002:234). Mounting tailings are created after separating the ore. The common solutions are dumping tailings into a river or ocean, piling them up on land, or (mostly) behind a dam (Diamond, 2005:453). All cause water pollution (MMSD, 2002; Otto, 2009). Water pollution can take place through mine discharges into flowing rivers. It can also be a result of the mining operations using clean water and discharging dirty and at times warm or hot water after use in the operations. Furthermore, water pollution can arise from mining activities that change the course, quality and quantity of the river. Water pollution in LDCs threatens the life of local communities as it causes the loss of fish – the main food and

source of living for locals. For example, the failure of the poorly constructed dam by BHP in the Ok Tedi copper mine of Papua New Guinea discharged 200,000 tonnes of mining tailings and waste into the Ok Tedi River in the late 1990s and destroyed its fishery, a source of living for 50,000 people (Diamond, 2005: 454). Water pollution can also deprive both domestic and wild animals of clean drinking water.

Dumping mining waste as tailings has another serious negative impact on the natural environment which is acid mine drainage (MMSD, 2002). Tailings and dams often hold high concentrations of metals and poisonous chemicals, even after neutralisation, so piled tailings have a high risk of causing acid drainage (CSP2 and WRI, 2005). This is demonstrated by depressed pH values and elevated concentrations of dissolved heavy metals; the sulphuric acid easily dissolves metals such as iron, copper, aluminium, and lead (MMSD, 2002: 238). Such drainage can have a devastating impact on ecosystems and usually lasts a long time after the life span of the mining project (Tarras-Wahlberg and Nguyen, 2008).

Therefore mining needs careful planning and implementation of waste solutions and rehabilitation after mine closure (MMSD, 2002). Without proper regulation of accurate measurements, the clean-up costs of water, air and land pollution are often underestimated or avoided by mining companies (Diamond, 2005). Consequently, the main victims of negative impacts of mining are ordinary people and governments due to the high cost of rehabilitation projects, using taxpayers' money. Furthermore, mining accidents often occur because of improper management and control of tailings and dumps. Anecdotal evidence suggests that every year there is one large accident related to a tailing dam (Diamond, 2005; MMSD, 2002). The UNEP (2000) reports that failure of tailings storage facilities accounted for three-quarters of major mining-related environmental incidents since 1975 (MMSD, 2002).

Developing countries, such as the DRC, Congo, Central African Republic and their natural environments often become victims of poor mining practices, especially in the hands of TNCs. In these countries, mining operations are sometimes located in remote areas and the states have no wherewithal to enforce environmental legislation and to monitor the operations of the mining companies. As such, mining companies can destroy the environment as there is no external oversight to their operations. Even where mining operations are located within easy

reach of government officials, these countries often lack financial, professional and technical capacities to mitigate mining-related problems (Reed, 2002) and are often unaware of negative environmental consequences (MMSD, 2002; Tarras-Wahlberg, 2002; Tarras-Wahlberg & Nguyen, 2008).

Mining activities therefore need to be managed so that their negative impacts on the environment are reduced. For instance, there are several best practices that have been developed in the mining industry to deal with dust-blow arising from mining activities including dampening the areas that generate dust; creating paved roads; providing respiratory protection to workers and ensuring its use; providing mobile operators with filtered air; locating schools and hospitals in areas of minimum dust and covering permanently some dump sites (Hester and Harrison, 1994). Furthermore, the design of dust capture and arrestment systems during production can mitigate the negative effects that can arise from mine dust on the environment. Similarly, there are also some interventions that can be made to minimise the effects of mining on water, fauna and flora. Post-mine closure restoration activities have enabled some environments that would have been affected during mine operations to be converted into parks and conservation sites.

Whilst we have presented the double edged nature of mining on the environment, existing literature tends to present the effects of mining in a one sided way. In fact, environmental issues as they pertaining to mining tend to be presented in a confrontational manner. Hester and Harrison (1994:3) observe that the impacts of mining on the environment are confrontationally presented as either "development or environmental degradation; compliance with laws versus costs; and industry versus regulators" and there is never congruence between these viewpoints. Therefore some studies on the impacts of mining on the environment can be viewed as subjective. But at the centre of some of these studies are TNCs that are involved in mining operations. Literature of the activities of TNCs in mining has traditionally emphasised on the negative effects of their activities. However, most recent literature observes that TNCs are also taking into consideration environmental impacts of their activities in mining through creating environmental management systems. We therefore turn our attention to environmental management systems in the mining industry.

2.4 Environmental management in mining context

An understanding of the term "environmental management" in the context of mining is elemental to this study. Although there are several discipline based definitions of environment management, the most potent definition is advanced by Fuggle and Rabie (1992:3). They refer to environmental management as "the execution of planned controls so as to achieve a desired outcome" which includes respect and care for the community of life, the improvement of the quality of human life, the conservation of the earth's vitality and diversity, the conservation of non-renewable resources, the alignment of personal attitudes and practices, the provision of a framework for development and conservation and the creation of a global alliance. We can state that environmental management is basically concerned with mitigation against actions or processes that harm the environment. However, the above definition and outcomes are quite broad. This study focuses on environmental management in the context of mining. Environment management in mining is mainly done through environmental management systems (EMS) under ISO 14001 which is a tool for good practice (Links *et al,* 2006).

There is empirical evidence that shows that the ISO 14001 environmental management system in mining can lead to improved environmental management and firms' performance. In a survey of forty firms, Links *et al.* (2006) aver that the environmental management standard ISO 14001 helps organisations reduce the negative impact their business activities may have on the environment, and as a result, also improves their business performance because if ISO 14001 requirements become part of the organisation's daily practices, then standardisation of the organisation's handling of environmental issues follows-leading, consequently, to better organisational environmental performance. In addition, standardisation augments its effect on organisational environmental performance through its positive impact on employee discretion, thus allowing employees' discretion further improves environmental performance. In the mining context there are two main reasons why ISO 14001 can lead to better environment management. First, an ISO 14001 environmental management system, if effectively adopted and implemented, creates a general awareness among the mine management, mine workers, financers and regulators on the activities of the mine *viz a vis* the environment. Second, ISO 14001 environment management system can make mining stakeholders continuously monitor all their operations, management and social responsibilities in relation to the environment thus leading to improved environmental performance (Hilson and Nayee, 2002).

In practice, a mine can use ISO 14001 environment management system if they want to improve resource efficiency, reduce waste and drive down costs thus providing assurance to mine management and employees as well as external stakeholders that environmental impact is being measured and improved. Rondinelli and Vastag (2000:499) note that ISO 14001 "offer a format for developing an environmental policy, identifying environmental aspects, defining objectives and targets, implementing a program to attain a company's goals, monitoring and measuring effectiveness, correcting deficiencies and problems, and reviewing management systems to promote continuous improvement". Likewise, McCreary (1996) notes that ISO 14001 is voluntary, with its main aim to assist firms, including mines, in continually improving their environmental performance, whilst complying with any applicable legislation. In general, mines are responsible for setting their own targets and performance measures, with the standard serving to assist them in meeting objectives and goals and the subsequent monitoring and measurement of these. The basic principles of ISO 14001 include plan, do, check and act (Danall 2006).

Musingwini, *et al.* (2005) outline a case study of two asbestos mines under African Associated Mines (AAM) namely Shabanie and Gaths mines in Zimbabwe that went through ISO 14001 and improved their environmental performance. Following the ISO 140001 steps, the African Associated Mines (AAM) had to develop a policy. The main role of the policy statement is that it is the basis for the design, implementation, monitoring and continual improvement at a certified mine. Imperatively, during the policy design phase, AAM made a serious review of the status of its operations in the two mines vis a viz the environment. The comprehensive internal review of the mine's operations status against some environment yardsticks was effectively carried out, which led to the creation of robust policy and also give clear pointers to weaknesses in the current operations.

Furthermore, the status evaluation during environment management system policy making raised awareness among management of the past and current operations and how they impacted on the environment. In the AAM case study, Musingwini et al (2005: 331) note that "after benchmarking the status against regulatory, industry and company voluntary standards, a policy statement was produced that outlined the company's commitment to prevention of

pollution with emphasis on aır-borne asbestos fibre and lock dust, air, water and land pollution, noise and vibration levels, dumps rehabılıtatıon and management, accident and incident prevention, identifying and eliminating any possible environmental and health risks and conservation of resources. During this process, the mine concurrently rectified some minor negative environment impacts thus improving the mine's environmental performance.

The AAM mines also analysed their operations and performance against the legal requirements of the country during the ISO 14001 process. The Standards Association of Zimbabwe (1996) note that in setting objectives and targets, a mine should establish and maintain a procedure to identify and have access to legal and other requirements to which it subscribes. In the AAM case study, legal compliance was already being achieved in most of the significant aspects, of the environment management system as compliance standards were lowly set. The low standards were raised during the ISO 14001 process. Furthermore, for two years the mines then worked towards meeting the newly raised standards. This led to improved environmental performance in the control of air-borne asbestos fibre and rock dust at Gaths Mine. Musingwini *et al*. (2005:332) note that "similar trends were established for other significant factors, other than fibre and dust. It can be concluded therefore, that AA Mines' environmental policy led to improved environmental performance in key target areas".

During the ISO 14001 process, a management system at AAM was set up involving management, departmental heads and the mine workers. This management system included training on various aspects pertaining to the environment. It can be argued that the involvement of the various levels of mine staff plus staff training raised awareness of the importance of the environment which translates to improved environment performance. Another aspect of the ISO 14001 which can lead to improved environment performance at mine level is the internal and external audit requirement. In the AAM case study "all the four internal audits undertaken prior to certification did not reveal major non-regulatory compliance. In addition, the first Standards Association of Zimbabwe (SAZ) third party audit only picked up minor non-conformances which were rectified during the three months before the final certification audit" (Musingwini, *et al.* 2005). The rectifications made by the mines after the findings of the SAZ external audit can lead to a conclusion that ISO 14001 environmental management system on a mine does indeed lead to improved environment performance.

In the AAM case study, improved environment performance through the ISO 14001 process also arose due to the creation of the mine closure plans which were non-existent before. Musingwini, *et al*. (2005:333) note that "The closure plan included projects that could result in former asbestos dumps being cleared away for use as raw material tor the production of other environmentally safe products. These projects included the recovery of magnesium from dumps, conversion of the dump material to produce low temperature Chrome-Mag foundry bricks and the recovery of nickel from the dumps. These projects were the results of an ISO 14001 driven mind set change from traditionally viewing process waste as waste to viewing the same waste as possible raw material for other processes that can be developed".

Another potent example where ISO 14001 environmental management system on mines led to improved environmental performance is portrayed in the National Copper Corporation of Chile (CODELCO) Copper mines case study in Chile (Newbold 2004). In the CODELCO case study, the results of an inventory and evaluation of greenhouse gases "indicated that during 1999, CODELCO emitted 4671 kilotonnes equivalent of CO2, directly or indirectly. Of this, almost 99% was emissions of CO2, some 26% of which were produced from the combustion of fossil fuels, 1% from the production of derivatives of petroleum and natural gas used by CODELCO, and 73% from the production of electrical energy for use in the company" (Newbold 2004: 256).

CODELCO used the inventory to evaluate and identify possible projects of mitigation. Newbold (2004:255) notes that "CODELCO responded by improving the handling of its residues; reducing its emissions and discharges; developing and introducing new technologies to reduce the consumption of energy and improving the environmental conditions of the work place". It can be argued that through these interventions, an ISO 14001 environmental management system on a mine led to improved environmental performance, especially through the introduction new technologies and management of waste and at mine processing level.

Although ISO 14001 environmental management system on a mine led to improved environmental performance in the above two case studies, there are no follow up studies to show whether these improved performances were sustained. Furthermore, in the above cases,

it is not very clear whether ISO 14001 was pursued only for improved environmental performance purposes. In the case of AAM in Zimbabwe, one could argue that ISO 14001 environmental management system was pursued as a counter to the international ban on the use of asbestos, and also as a means to market asbestos in new East Asian markets. In the case of CODELCO, it can be argued that COLDECO pursued ISO 14001 as an international public relations exercise. CODELCO, as a state owned company may have used ISO 14001 to spruce up its own image in order to get finances, new markets and develop new joint venture partnerships with the some private companies investing in Copper in Chile.

In general, since mining has direct and indirect impacts on the environment, environmental management in mining is done through analysis of the direct impacts and associated effects from mining activities. For example, mining can cause several chemicals to be released into water and the land. These chemicals can be quantified and the direct as well as the actual impacts on the affected water body analysed. However, there may be some consequences of the releases of chemicals that may take place kilometres away from the mining operations (Wathern, 2013).

Environmental management in mining is important and TNCs sometimes set policies based on industry best practices to govern their operations and how they affect the environment. Within these environmental management plans, TNCs also spell out clear goals and commitments. For instance, responsible mining companies aim to minimise the impact of land use change, and where possible to restore land to its original state. Also, energy efficiency schemes at large mines can result in substantial reductions in greenhouse gas emission. For example, if the mine is subject to a specific water chemical discharge limit, the EMS would first help to identify the legal requirement, and management would then develop goals, targets and action plans to ensure compliance. In short, the EMS provides staff with a better understanding of environmental impacts, a thorough knowledge of the pertinent legislature, and a proactive action plan to ensure that the required targets are met. From experience, reporting, auditing and monitoring are key areas of environmental management good practice for mining companies, including TNCs. EMS sometimes arise form EIAs, hence we focus on these in the next section.

2.5 Transnational companies and the practice of EIAs

Within the broader framework of EMS, are also tools such as EIAs. EIAs are a key tool in effective environmental management. EIAs are a system of analysing and reporting on the impact of certain types of activities to enable decision makers to decide what sort of activities should and shouldn't take place and to determine what measures should be taken to mitigate and manage the impacts of the activity (Ortolano and Shepherd, 1995). The EIA process goes through various stages, including screening, scoping, prediction and mitigation, managing and monitoring, and audit (Wathern, 2013). During the screening phase, a mining project is clearly categorised. This often results a decision on whether or not a full EIA is to be carried out or not. Most new mining ventures are classified as projects where EIAs are mandatory. The screening phase is followed by the scoping phase. In the scoping phase, a determination of the most critical issues to study during the EIA will be outlined (Snell, and Cowell, 2006). Furthermore, the company has to involve community participation to some degree (Morgan, 1998). It is at this early stage that EIA can most strongly influence the mining project proposal (Wathern, 2013).

Once the scoping is done, and the community involvement has been highlighted (Hartley and Wood, 2005), detailed prediction and mitigation studies follow. In practice, prediction and mitigation studies are carried out in parallel with project feasibility studies. Glasson, *et al*. (2013) point out that it is important that the prediction and mitigation studies clearly outline the whole project cycle, pointing out the areas where the project may have negative impacts on the environment and also the mitigation measures to be put in place. Prediction and mitigation studies therefore provide a guide to project designers or planners or even community members as they can view the project before implementation and its consequences on the environment.

The phase that follows after the prediction and mitigation processes is the management and monitoring phase (Marshal *et al*. 2005). The main output report is called an Environmental Impact Statement, and contains a detailed plan for managing and monitoring environmental impacts both during and after implementation of the mining project. In theory, the project will be modified and implemented taking into consideration the correct path outlined in the EIA

report so that there are minimal negative environmental impacts. In practice, some outlined paths are not followed as companies usually follow the most cost effective plans that will help them reap maximum profit. The final phase in the EIA cycle is an environmental audit of the EIA. This process is carried out some time after project implementation. The audit serves a useful feedback and learning function to all stakeholders. It can also help remedy post closure mining aspects (Glasson, *et al*. 2013).

Having said this, it is in the best interest of TNCs and other businesses that follow some best practices to ensure that EIAs are carried out before the commencement of huge projects. For TNCs, the World Bank and International Finance Corporation, (2002) observes that EIAs are necessary for a number of reasons. First, EIAs can enhance the chances that the project will be funded since some international financiers now demand EIA reports to accompany feasibility studies for them to decide on whether to fund a project. Second, they can also enhance the success of the project, especially when local communities are involved in the EIA process. Third, EIA reports can act as good public relations exercises that can help prop up the reputation of a TNC as an entity that follows some best practices. Finally, EIAs are also a legal requirement and as such compliance with this also means that the TNCs honours and respects national laws and regulations.

Whilst there are many guidelines and studies that highlight the EIAs processes and procedures, (Bhatt and Khanal 2010; Ingelson and Nwapi, 2014), and the purposes of EIAs, (Ogola, 2007), there is a dearth of literature on how TNCs actually carry out EIAs and what motivates them to follow a certain approach. Since TNCs are trans-frontier entities, this lack of empirical evidence, makes it quite difficult to understand how they carry out their EIAs as there are various factors that can influence them. Unlike domestic firms, TNCs are entities that comprise of the parent company and the subsidiaries but most of the operations of the TNCs subsidiaries are controlled by the parent company and the parent company sets the standards and also makes operations confirm to set uniform standards across the subsidiaries. These characteristics of TNCs make it difficult to easily state how they carry out EIAs.

With little available literature on this subject, we therefore rely on first-hand evidence that shows that there are four ways in which TNCs can generally carry out EIAs. First, TNCs can

carry out EIAs based on standards set by the parent company. These are EIAs standards that are internal to the TNC but ensure control and compliance across all the subsidiaries. If a TNC follows this approach, the main benefit is that the project that develops fits directly into the TNCs mission, values and goals and mirrors other subsidiaries that fall under the TNC. However, the challenge with this approach is whilst the standards may conform to the company requirements and practices, they maybe at cross purpose with the national laws where the TNCs has to open its project.

Another angle is that TNCs apply the national laws and regulations on EIAs. This angle is again problematic as it means that the parent company may have less control over the resultant project and the project may not fit into the common characteristics of other subsidiary entities under the TNC. Furthermore, the national laws and regulations may be much weaker than the laws prevalent in the parent company. When companies stick to the local laws even when they are weak, they can be viewed as having compromised the quality of their operations. Such a "race to the bottom" supports the pollution haven hypothesis advanced by Zarsky and Gallagher (2008). There are dire reputational consequences on companies that are perceived to be racing to the bottom in terms of their environmental standards and ethos. In some developed countries, there are laws that outlaw such location of firms in pollutions havens. Hence huge fines can be imposed on such companies.

Third, TNCs can actually apply international or regional best practices in carrying out the EIAs. The use of international or regional best practices or standards may be motivated by the source of funding for the TNC, among other factors. Where the TNC's finances are from the international or regional market, the standards that the TNC sometimes uses should also portray this. The merits of a TNC following this approach are that it can boast with using international best practices and also claim that the EIAs it carries out are of high quality. The problem though is usually the interaction of the international best practices with the national laws and the TNCs internal policies and procedures. Mugabe, (2013) states that many developing countries face serious challenges in trying to domesticate or harness international best practices at national level, and even worse challenges in trying to make international best practices be in line with company procedures.

The final approach that TNCs can employ when carrying out EIAs are the domestic laws of their country of origin or home country in the foreign nations. This means that South African multinationals would use the South African law in doing EIAs in any other country they invest in. This also has some merits and demerits. The main merit is that the TNCs would be using familiar laws and regulations and are therefore quite conversant with them. The main demerit is that the approach overrides the local national laws of the host country. Furthermore, there may be lack of national experts in the host country knowledgeable about the EIA processes and procedures of the home country. This means that if TNCs follow the laws applicable in their country of origin, they would also bring in their nationals to do the EIA work in the host countries. The long term effects on sustainability of using this approach is questionable. There are various reasons that can motivate TNCs to prefer a certain approach out of the four that have been highlighted, *inter alia* the cost effectiveness of the approach, the capacity of the TNC, the capacity and capability of the host country, and some funding considerations. Albeit there is a multiplicity of factors or reasons, this study focuses on whether TNCs follow a certain policy path based on funding considerations or compliance to laws.

2.6 Conclusion

This chapter has reviewed literature on the effects of mining activities on the environment. This sets the stage for analysing the EIAs that are carried out in the mining sector. In addition, it has reviewed literature on TNCs and the practice of EIAs. The chapter has pointed out that whilst there is available literature on EIA processes and procedures in general, there are gaps in literature that pertain to how TNCs in particular carry out EIAs and what motivates them. In this regard, this study therefore fills in the existing lacuna in exiting knowledge. In spite of this, the chapter shows that EIAs are important tools and usually developed together with environmental management plans. The review of literature and identification of the gaps in the exiting knowledge has set the stage for further discussions on the practice of EIAs in the DRC's mining sector, but first we explain the study methodology in the next chapter.

CHAPTER 3 METHODOLOGY

3.1 Introduction

The last chapter has reviewed the existing literature on TNCs and the practice of EIAs. It has reviewed literature on the environmental impacts of mining, and also explored literature on business and sustainability. It also reviewed literature on the practice of EIAs by TNCs. The chapter has also identified the gaps in literature and provided a justification for the study. This chapter explains the study methodology. It explains the study approach and the study design. The explanation on the study design includes explanations on the research sites, sampling procedure and data collection tools. It also explains how data were processed. It also provides some reflections on the methodology, especially highlighting challenges faced during the study.

3.2 Approach to the study

The approach to the study of South African mining TNCs and the practice of EIAs in the DRC is a qualitative research approach. Our understanding of qualitative research is similar to Ketokivi and Choi (2014:233) who explain that "qualitative research approach examines concepts in terms of their meaning and interpretation in specific contexts of inquiry". In this regard, this study employs some interview guides to gather some qualitative data and also reviews qualitative secondary literature. Furthermore, the study employs some case studies. Case study research involves a systematic investigation of a unit of analysis that is conducted over a period of time where in-depth data are obtained, and it has been defined by Yin (2003:07) as "an empirical inquiry that investigates contemporary phenomena within its real-life context, especially when the boundaries between phenomena and context are not clearly evident". A simpler and specific definition of a case study is provided by Benbasat *et al*, (1987). They note that a case study involves information gathering from few entities (people, groups, organisations). In this regard, this study is based on two firm case studies, namely AngloGold Ashanti and Metorex.

3.3 Research Design

3.3.1 Description of research sites

This study mainly focuses on the EIAs carried out by 2 South African TNCs in the DRC. The specific areas these companies operate in the DRC are the Oriental Province, in particular, Ituri District where Anglo Gold Ashanti has some mining operations and Katanga Province. In addition, it also focused on Katanga Province, especially Lubumbashi District where Metorex has some mining operations. Although the two companies currently have some mining operations in these areas, the study focus on the EIA activities these two companies carried out.

3.3.2 Sampling procedure

The study mainly used purposeful sampling procedures. In this regard, I actively selected the most productive sample to answer the research question based on my practical knowledge of the research area and the available literature (Marshall, 1996). The use of purposeful sampling involved creating clear criteria of selecting institutions to participate in the study. Thus the selection criteria for government departments to be included the study included that the departments were supposed to be directly providing an oversight to TNCs and an EIA policy or legal instrument that has an effect on mining activities. Using this criterion, three government departments were purposefully selected in South Africa and two in the DRC. The first key informants from these government departments were conveniently sampled, thus I selected the most accessible officials to start the interview processes. From these conveniently selected officials, the snowballing technique was used to get further government based key informants.

Similar purposeful sampling was also applied to the selection of TNCs to participate in the study. An elaborate inclusion criteria for the TNCs was developed which included that:

(1) companies should have their headquarters in South Africa;

(2) the companies should have done some EIAs in DRC over the past 5 years;

(3) the EIAs should have been in the mining sector;

(4) the EIAs reports should be accessible for review by the researchers

Thus using this inclusion criterion, the two South African mining TNCs were purposefully selected. Furthermore, the key informant interviews from these two TNCs were also purposefully selected based on the criteria that they should also be working directly in the environment department or should have been involved in the EIA processes that took place in the DRC. Once the first key informants in the departments were identified, these key informants also gave the contacts of other persons in the departments who could be interviewed and the researcher followed these leads. However, the researcher also interviewed some persons who were not referred to her so as to verify some facts provided and minimise biases that would arise from snowballing.

3.3.3 Data Collection process

In this study, two types of data were collected namely primary data deriving from interviews and secondary data from a review of literature. The general secondary literature on environmental impacts of mining, EMS, EIAs was mainly gathered from books and published reports from the library, including e-libraries. The legal and policy documents on EIAs in South Africa and the DRC were also gathered from the government departments. In addition, secondary literature was also gathered from online peer reviewed journals through searching for key words such as EIA in mining, "EIA in the DRC"; "EIA in South Africa"; "South African TNCs"; "South African mining TNCs"; "South African TNCs in DRC"; "South African mining TNCs in the DRC"; "EIA policies and laws in DRC"; "EIA policies and laws in South Africa"; "Regional EIA policies and laws", among others. The researches on the DRC yielded little results when typed in English and therefore I used similar translations in French. Secondary literature was also gathered from the two case study companies, including hard and soft copies of company reports, financial statements, minutes of meetings, standard operating procedures, project profiles and briefs, company policy documents. Secondary data were gathered from the two case study company websites, some newspaper reports and articles from special magazines. In total, the secondary data collected for this study included manuscripts, reports, presentations, abstracts, projects information, training materials, dissertations, policies, laws and guidelines and financial reports and information, among other documents. Besides secondary literature, the study also gathered primary data from interviews. These interviews

were categorised as interviews with government officials and interviews with company officials.

3.3.4 Data collection tools

Different tools were employed on the two different types of data, primary and secondary data, gathered during the research. Secondary data mainly involved desktop review and data triangulation procedures. For the variety of data collected secondary sources, to be useful and utilised in this study, it was necessary to triangulate the data. Data triangulation is an iterative process, gathering and interpreting data in an on-going manner. The process of data triangulation of the secondary data sources can be visualised as a three stage process as shown in Figure 1.

Figure 1: Data triangulation process



Source: Author (2014).

The process starts from the data collection phase (already been explained). The process moves into the cataloguing phase, which includes reviewing and recording all data gathered through desktop research; organising the gathered data by themes and carrying out some quality controls to gathered data. After cataloguing of the data, the process moves on to data plotting, where data are plotted on an excel spreadsheet according to prior established themes arising from the research questions. In this study, data plotting was carried out until saturation on a theme was reached or till when all existing data sources on the particular theme are exhausted. The products of the data plotting process are theme based summaries on secondary data. As a quality control process, all conflicting data from the primary and secondary sources were not used in this study. The data summaries arising from the data plotting process were archived.

Besides the desktop review of secondary literature sources and the associated processes of data triangulation, this study also relied on interviews to compliment available data. Interview guides were the data collection tools that were used to collect data in this study. Two structured open- ended interview guides were developed. Whereas the first interview guide targeted firm level employees or the TNCs under study, the second interview guide focused on eliciting information from other stakeholders such as government departments and ministries. The two interview guides that were employed in this study constitute appendix 1 and 2. The actual interviews were only carried out after ethics clearance by Wits Human Research Ethics Committee (appendix 3). The interview guides were tested through some interviews with some TNCs that did not necessarily have projects in the DRC. The testing was done with personnel from Anglo Platinum as it has a subsidiary called Unki Platinum in Zimbabwe and Impala Platinum which also has a subsidiary called Zimplats in Zimbabwe. The testing of the questionnaire showed that it was acceptable and clear to respondents therefore no major modifications were made.

A mapping exercise which involved researching for mining TNCs from the South Africa Business directory also comparing the names of the TNCs with those found in the Congolese business directory. This exercise proved tedious and the results were not that positive as many subsidiaries or projects of the TNCs would use different names in the DRC. Realising the futility of this exercise, the researcher then approached the ministries/ department of industry and trade, commerce and mines in order to get the names and information on South African TNCs operating in the DRC and the location of the projects they are involved in. Further mapping zeroed in on establishing which of the South African TNCs has been involved in a big mining operation in the DRC for which they had to carry out EIAs. Using the inclusion criteria (already mentioned), South African mining TNCs that do not carry out any EIAs were excluded from the list of potential companies to be interviewed and only two South African TNCs fitted into the study, namely AngloGold Ashanti and Metorex.

The interview guides for this research were administered in two ways. First, interview guides were administered through some face to face and telephone interviews. Second, interview guides were administered through emails. The types and numbers of interviews done under

each category by firm and country are highlighted in Table 1 which shows that 19 interviews were carried out in this study.

Table 1: Types of interviews and numbers of interviews carried out per agency

Type of Interview	Numbers of interviews carried out per agency				Total number of interviews
	AngloGold	Metorex	RSA	DRC	
Face to face interviews	2	1	4	0	7
Email based interviews	1	1	2	3	7
Telephone Interviews	0	0	0	5	5

There was an equal number of face to face interviews and email based interviews. Whereas there were no telephone interviews carried out with government departments and TNCs in South Africa, 5 interviews were carried out with entities in the DRC. For logistical reasons, the researcher employed more email and telephone interviews in the DRC. The actual interviews done and the institution interviewed plus the date are shown in table 2 below.

Table 2: The actual institution interviewed and the dates of interview

Country	**Institutional Classification**	**Name of institution**	**Number interviewed**	**Date Interviewed**
South Africa	Government Ministries/ Departments	Ministry of Mines	2	16 September 2014
		Department of Trade and Industry	2	18 September 2014
		Department of Environment	2	23 September 2014
	TNCs	Metorex	2	09 December 2014
		AngloGold Ashanti	3	28 November 2014
DRC	Government Department or Ministry	Ministry of Environment	5	14 October 2014 and 15 October 2014
		Ministry of Mines	3	16 October 2014

As shown in table 2, the interviews were carried out with officials or representatives of government departments and also the two case study TNCs. The government departments that

were interviewed were those deemed to have direct impact on the activities relating to TNCs and the practice of EIAs. This excluded government departments that have an indirect impact on TNCs and the practice of EIAs in the DRC. The persons that were interviewed from the two TNCs were those mainly based in South Africa because the two companies do not have any person who is involved in EIAs based at project level. Thus EIAs are planned and implemented by personnel based at the TNCs's headquarters.

3.4 Data Processing

Data were processed manually. In terms of secondary data, theme based summary sheets of triangulated data that were archived were also analysed by some reviewers who pointed out the gaps in data, conflict in data and any areas that they thought saturation was not reached. As stated earlier, conflicting data were not used. In terms of areas where data were perceived not saturated, these areas were emphasised during interviews. Data from interviews were also manually analysed. In this regard, notes were taken in all face to face and telephone based interviews. These notes were then classified according to the themes that they fit in. Thus summaries based on themes deriving from the interview notes were created. Summaries were also made from email based responses. The email based interview summaries were then merged with the face to face and telephone based interviews. In addition, the interview based summaries were then analysed and merged with the literature review based summaries. Thus a full picture of the data from the interviews and the literature sources was presented as theme based case memoirs. These theme based case memoirs were then send to three reviewers for comments. Where possible, the case memoirs were also send back to the respondents for reviews and comments. Once this process was completed, the data presentation processes commenced.

3.5 Methodological Reflections

Several challenges were encountered in trying to carry out the study. Interviews were continuously rescheduled and re-interviewing some persons when more information was needed became quite difficult. There was a perceived lack of institutional memory, thus no personnel could provide historical context to how policies and practice developed, which also affected the study, especially in government institutions that are hit by high staff turnover in the DRC. Historical data on institutional arrangements and their changes and the reasons for

changes was quite difficult to verify due to lack of institutional memory and secrecy. The study also relied on secondary sources. Verifying some of the sources proved quite difficult especially in cases of conflict of data. The conflicting data that could not be verified, especially if they came from unpublished institutional reports, were therefore not used in this report.

It was also difficult to explain what a purely South African TNCs is. Many respondents highlighted that there are many South African firms that have listed on the London and New York stock exchanges and moved their head offices abroad but have their roots and origins in South Africa. These include TNCs such as Anglo American Corporation. We however highlighted that these firms can be called South African émigré TNCs, in line with Gelb (2010) classification of South African TNCs. Using this classification, we therefore excluded the émigré TNCs from the study, which in a way limited the number of South African TNCs that would qualify in this study.

3.6 Conclusion

This study has dealt with the study methodology. It has shown that the qualitative research approach is the best approach in dealing with this type of study. Furthermore, it has highlighted that case studies are central to the study. It has highlighted the study design, data collection tools, how data were processed and also some reflections on the methodology. The next chapter present the empirical evidence. In this regards, it presents the findings from Metorex and AngloGold Ashanti on the policy and practice of EIAs in the DRC.

CHAPTER 4 EMPIRICAL EVIDENCE

4.1 Introduction

This chapter presents the empirical evidence through findings on the policy and practice of EIAs by AngloGold Ashanti and Metorex (Pty) Limited in the DRC. Section 4.2 presents the findings on AngloGold Ashanti and Section 4.3 presents the Metorex (Pty) Limited findings. Section 4.4 provides for some lessons learnt from the two case studies.

4.2 AngloGold Ashanti and the policy and practice of EIAs in DRC

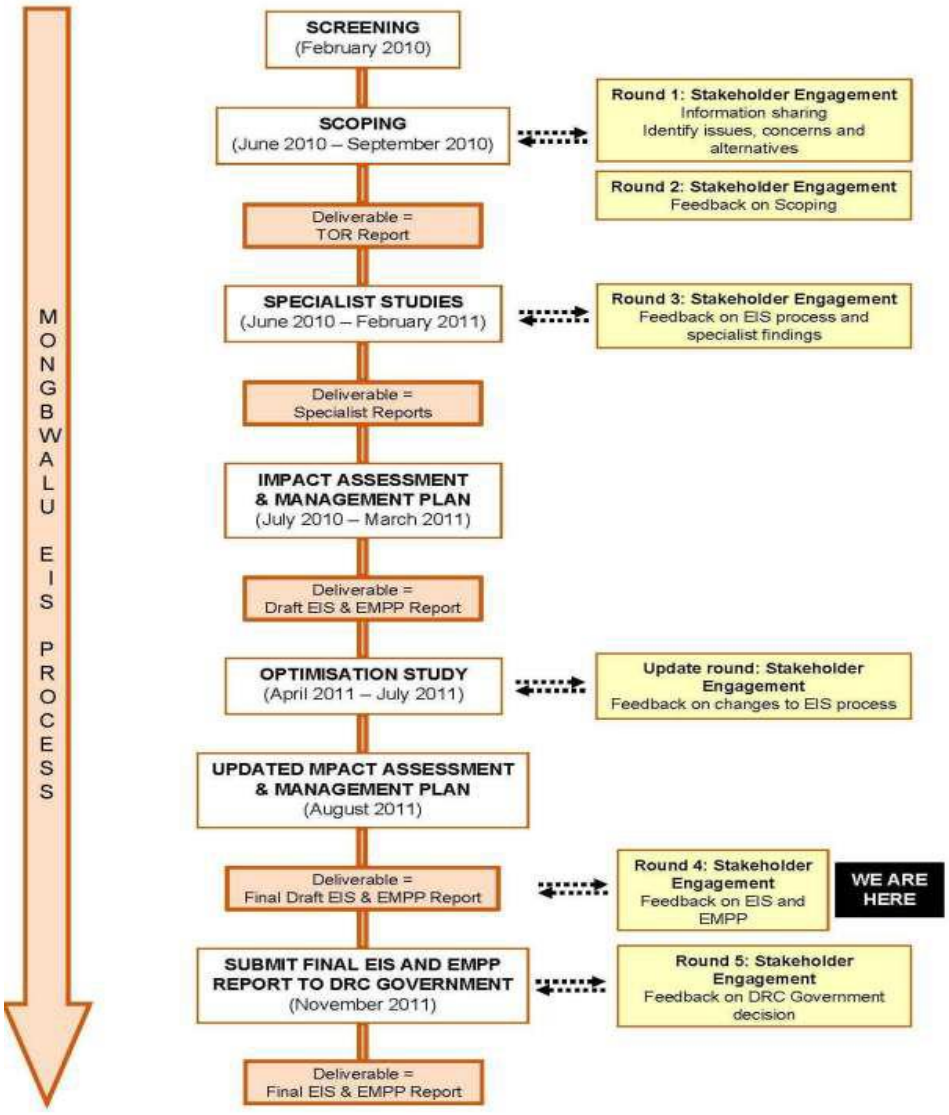
4.2.1 AngloGold Ashanti mining projects in the DRC

AngloGold Ashanti has had two mining projects that have been operating in the DRC over the past five years, located in Ituri District of Orientale Province. These mining projects are the Mongbwalu and Kibali gold mine projects that are run by AngloGold Ashanti's subsidiary firms in the DRC. The Mongbwalu project lies in Concession 40, which is situated in the north eastern part of the DRC. Concession 40 covers an area of 3 784 square kilometres. Precisely, the Mongbwalu Project is situated 48km northwest of the town of Bunia. The Mongbwalu project is operated by AngloGold Ashanti's subsidiary Ashanti Goldfields Kilo (AGK). AGK is a joint venture between AngloGold Ashanti Limited (86.22%), which operates the mine, and Société des Mines d'Or de Kilo-Moto (SOKIMO) (13.78%), a Congolese state-owned gold mining company, (AngloGold Ashanti Annual Report, 2013). The joint venture is covered through 15 licences that were issued to the two companies by the DRC government. AngloGold Ashanti also operates the Kibali gold project, which it acquired in 2009 through a purchase of Moto Goldmines. The Kibali gold project is a joint venture between AngloGold Ashanti, which owns 45% share equity and Randgold Resources, with another 45% share equity , and Société des Mines d'Or de Kilo-Moto (SOKIMO), which owns the remaining 10% share equity (AngloGold Ashanti Annual Report, 2012). This project also lies in the north-eastern part of DRC, and is very close to the town of Doko but also close to the Ugandan boarder.

4.2.2 The EIA processes for the projects

AngloGold Ashanti did some EIAs for each of the above mentioned projects. The EIA for the Mongbwalu Project was carried out in 2011. The EIA process followed in carrying out EIAs for this project can be visualised as in Figure 2. What is clear is the EIA process combined the Environmental Impact Study (EIS) and the development of an Environmental Management Plan of the Project (EMPP).

Figure 2: The processes followed in the Mongbwalu Project EIS and EMPP



Source: Meterox Report (2014).

Besides combining the Environmental Impact Study with the Environmental Management Plan of the Project (EMPP), there are some aspects that are not demanded by law that the process included as will be explained in section 4.2.3. The EIA for the Kibali gold project was carried out in 2012. The process was led by Randgold Resources Limited and the final product produced was an Environmental and Social Impact Assessment (ESIA) report. The EIA mainly focused on impacts of the mining, mineral processing, waste management, other surface infrastructure on the physical environment, biodiversity including both terrestrial and aquatic, and community sociological issues. In this regard, specialist studies focusing on the physical environment analysed aspects of mining operations and location in relation to noise, climate and air quality, greenhouse gas inventory, water, including surface and groundwater, waste geochemistry, soils and land capability. Specialist studies on biodiversity focused on mining operations and location effects on terrestrial biodiversity and aquatic biodiversity. Social aspects also analysed included the mining operations effects and mining location socio-economic effects, and other effects on cultural heritage, indigenous peoples, artisanal and small-scale mining, conflict and human rights, displacement and resettlement, traffic and health. The EIA also highlight the main concerns raised by stakeholders during the stakeholders engagement processes including air and water pollution and many other social matters such as employment, lack of community engagement, current impacts and compensation, compensation for lost and damaged land, economic and physical displacement, infrastructure and social development needs, relocation and economic displacement of artisanal miners, and payment of outstanding pensions.

4.2.3 The policies/ guidelines/ or standards that guided EIAs

There are three main policies that guided the EIAs for the two projects. First, the TNCs used the International Finance Corporation (IFC) guidelines and standards on EIAs. The IFC guidelines on EIAs are enshrined in the IFC's Sustainability Framework. The IFC's Sustainability Framework is made out the IFC's Policy and Performance Standards on Environmental and Social Sustainability, and IFC's Access to Information Policy. The specific IFC guidelines that deal with EIAs in mining stipulate that the potential environmental issues associated with mining activities may include management of the following: water use and quality, wastes, hazardous materials, land use and biodiversity, air quality, noise and vibrations, energy use and visual impacts. In this regards, compliance with the Policy and Performance Standards on Environmental and Social Sustainability means that an institution carries out an

(i) integrated assessment to identify the environmental and social impacts, risks, and opportunities of projects; (ii) effective community engagement through disclosure of project-related information and consultation with local communities on matters that directly affect them; and (iii) develops a plan that focuses on management of environmental and social performance throughout the life of the project. The IFC's Sustainability Framework and associated EIAs also refer to the World Bank Group Environmental, Health and Safety Guidelines (EHS Guidelines), as tools that should also be considered during the EIA process as these would inform the project appraisal phase.

Second, domestic DRC legislation was also employed in the EIAs processes for the two projects. Whilst there are several legislations that deal with issues of the environment in the DRC, the most potent laws that cover on EIA process is Code Minier or Mining Code, Law No 007/2002 of July 11, 2002. This is the only law that presently requires and directly covers EIAs in the mining sector in the DRC. The Mining Code has some provisions for EIAs that pertain to commercial activities associated with prospecting, exploitation, processing, transportation and sale of mineral substances, as well as artisanal mining activities. In addition, there are provisions instituted that require the TNCs to conduct Environmental Impact Studies (EIS) and EMPPs. The law defines the EIS as an a *priori* scientific analysis of the foreseeable potential effects a given activity will have on the environment, as well as the analysis of the acceptable levels thereof and the mitigating measures to be taken to ensure the conservation of the environment, subject to the best technology available, at a viable economic cost. It also defines an EMPP as environmental specifications of the project, consisting of a programme for the implementation and monitoring of measures contained in the EIS in order to eliminate, reduce and possibly offset the damaging consequences of the project.

The mining code is supported by the Mining Regulations, (Decree No 038/2003 of 26 March (2003). Within the Mining Regulations, whilst Articles 450 to 457 of Schedule IX of the Regulations set out the requirements for EIS and EMPP reports, Articles 451, 225 and 478 to 480 stipulate the purpose of and guidelines for public consultation. There is also a Ministerial Order No 043/CAB/MIN/ECN-EF/2006 of December 8, 2006 which obliges all projects, old and new, to carry out and have an EIA. Although this Ministerial Order is in place, it only acts as a policy as it does not have the same weight as a law or an Act of Parliament.

The third policy guide that was employed in the EIAs, especially for the Mongbwalu Project, was the company policies, that is the AngloGold Ashanti policies on EIAs. However, the AngloGold Ashanti company policies were not pronounced in the Kibali Gold Project as the lead company for this project was Randgold Resources. AngloGold Ashanti has an environmental policy that sets some environmental management standards on air quality; chemical use; closure and rehabilitation; land use; waste; and water. The company environmental management policy and company standards guide the company in terms of managing the negative effects of operations on air, land use and water. Therefore, during EIAs the company policies are utilised in order to clearly guide future company operations, especially aimed at mitigating the negative consequences. AngloGold Ashanti contracted some consultancy companies to do the EIA. For the Mongbwalu Project, the company hired a South African consulting firm, SRK Consulting. Although the South African firm was contracted to do the EIAs, South African EIAs policies and standards were not used for the project.

4.2.4 The motivating factors to follow a given EIA policy path

The question mainly focused on the reasons the company followed the policy paths it followed in carrying out the EIAs. Respondents from interviews mainly highlighted that the DRC law was employed for compliance purposes. This means that there is no way AngloGold Ashanti could have done the EIAs without referring to the local laws as the project would not have been approved by the DRC government. So for the EIA report and the project to be approved, the company had no options other than to comply with and fulfil the DRC requirements. Respondents also highlighted that the IFC standards are international standards and these were followed in order for the company to be able to apply for finances successfully on the international markets. Thus the use of IFC standards in EIAs is mainly driven by financial imperatives, especially where project finance has to come from investors residing outside of South Africa. And finally, the use of AngloGold Ashanti standards was mainly related to internal compliance. Thus the company used these standards so that it could be seen as also meeting its own internal company requirements. Thus company standards do not serve any external purpose other than the firm's internal needs.

4.2.5 The factors that motivate AngloGold Ashanti to carry out EIAs in the DRC

There are two main factors that drive TNCs, in particular AngloGold Ashanti to carry out EIAs in the DRC. First, the TNC carries out EIAs as ingrained in its values for respecting and caring for the environment. Thus for AngloGold Ashanti, EIAs are tools that can help the company better manage the negative impacts of its mining activities. Second, AngloGold Ashanti, also carries out EIAs in the DRC so as to be in compliance with the laws of the land. This means the company tries to be a good corporate citizen.

4.2.6 Challenges that AngloGold Ashanti face in carrying out EIAs in the DRC

From the interviews, the main challenge that AngloGold Ashanti faces in carrying out EIAs in the DRC relates to the polices in the DRC. First, the law on EIAs requires all consultants who would carry out EIAs in the country to be registered in the country. This means that no external entity can just parachute in and work on EIAs in the DRC without having local registration. This law limits the number of options available for TNCs to choose consultants from. This would not have been a problem if the available locally registered consultancy companies were endowed with highly skilled personnel. However, apparently this is not the case. Most of the locally registered firms that carry out EIAs are able to carry out EIAs that would comply with DRC regulations. Few have had exposure to writing EIA reports that ingrain international standards such as those relating to IFC and the World Bank. Furthermore, language barriers of writing and translating the reports from French to English sometimes pose a challenge for the locally registered consultancy firms. This acts as a barrier to South African mining TNCs as they mainly rely on English. It is also difficult for AngloGold Ashanti to get some local consultants who are qualified to carry out specialist environmental studies. Respondents stated that there are not many well trained local Congolese who can carry out these studies.

4.2.7 Recommendations to improve the regime on EIAs in the DRC

Respondents stated that it is necessary to train the Congolese government officials involved in policy implementation and monitoring compliance to EIAs regulations in the DRC. Quality training would ensure that local officials understand the legal and policy requirements of EIAs and also evaluate compliance of firms in practice. Training would also expose officials to the other international EIA standards such as the IFC standards and the World Bank guidelines. Quality training of government officials would also ensure that the officials understand the

various specialist reports that firms submit to them. Another recommendation is that the current laws should be made more elaborate and be supported by guidelines that establish the desired local standards of compliance. The current situation where there are laws that are not supported by clear guidelines and standards is unattainable in the long term. Therefore there is still need for better EIA regulations and standards.

4.3 Metorex (Pty) Limited and EIAs in the DRC

4.3.1 Metorex (Pty) Limited projects in the DRC

Metorex has had a number of projects that have been operational in the DRC over the past five years. The projects portfolio of Metorex comprise of greenfield investments and brownfield investments as well as some that are fully functional and those that are still at feasibility studies phase. The greenfield project that Metorex runs in the DRC is the Ruashi mine which is located near Lubumbashi in Katanga Province. This is a mine that produces copper and cobalt. It comprises of three open pits and a modern solvent extraction electro-winning processing plant. The Ruashi Mine currently produces 38 000 tonnes of Copper and 4 400 tonnes of Cobalt per annum (Metorex Annual Report, 2011). A Metorex subsidiary firm, Ruashi Mining SPRL, currently runs the project operations in the DRC. The other Metorex run mining project in the DRC is the Kinsenda project. This project is located near the border town of Kasumbalesa in the Katanga Province of the DRC. The Kinsenda project is a copper mining project. The project is supposed to be fully functional in 2015. Finally, Metorex also operates the Musonoi project, which is located near Kolwezi in Katanga Province. The Musonoi Project produces copper and cobalt. This project is estimated to last for 20 years.

4.3.2 The EIA processes for the projects

Metorex (Pty) Ltd carried out EIAs for all these mining projects in the DRC. The initial EIA for the Ruashi Mining was carried out in 2008. However, the project also made some material changes to the plant which required an EIA to be carried out. Thus in 2012, the EIA was revised to include the material changes to the plant, especially the additional construction and installation of the acid plant and the spin flash dryer. As for the Kisenda project, the projects' EIA and associated management plans were submitted to DRC authorities in 2011 and all

approvals required by the DRC Mining Law were obtained in 2013. In terms of the Musonoi project, an EIA for the purposes of the feasibility study has been done, but not yet submitted to the authorities. There is still substantial work being done on plant and mine design, and the EIA will be finalised and submitted once these are finalised.

Metorex EIAs mainly deal with environmental issues such as water, air, biodiversity and soil. Furthermore, the initial EIAs done by Metorex also encompassed the effects of the mining operations and location on the surrounding communities. Thus the EIA reports also included social assessments in them. Key social issues that were analysed include the mining and mine effects of local livelihoods, job creation, health, traffic, community living and education. However, the additional construction of the acid plant and spin flash dryer did not require a full EIA. In this regards, Metorex carried out a specific EIA that focused on the impacts of these new additions on the environment, especially focusing on water, air, soil and biodiversity. For all the EIAs, detailed environment management plants were also created.

4.3.3 The policies/ guidelines/ or standards that guided EIAs

There were two major policy paths that guided Metorex (Pty) Limited in carrying out EIAs for these projects. First, all the EIAs were done according to the DRC legislation on EIAs. This means that the EIAs were done following the EIA provisions enshrined in the DRC Mining Code and DRC Mining regulations. For Metorex, the Mining Code of 2002 provides legislative policy for the development and operation of any mining project in the DRC. Respondents cited Article 15 which deals with the establishment and functions of The Department for Protection of the Mining Environment (DPEM) as important. Additional provisions are found in Annex A of the Mining Code of 2002 which deals with Financial guarantee for Environmental Rehabilitation and Annex K which provides for the legal standing for Environmental Impact Statement Directive. Besides the Mining Code of 2002, respondents from Metorex also cited the importance of The Mining Regulations, which provide the legislative framework for implementing the policies of the Mining Code. Thus the company also followed the provisions enshrined in the Mining Regulations.

In addition to following the DRC legislation, Metorex (Pty) Ltd also did some additional EIAs based on the requirements of the Equator Principles. These are principles that have been

developed to guide development finance institutions that fund projects, especially taking into considerations the risks arising from a project's interaction with the environment and the community social fabric. Thus the Equator Principles are imperative for determining, assessing and managing environmental and social risk in projects. They are primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making for development finance institutions.

4.3.4 The motivating factors to follow a given EIA policy path

For Metorex, the use of DRC standards for compiling EIAs is a legal requirement for all mining companies, whether transnational or local. The EIAs submitted for authorisation complied with the DRC requirements for such documents, otherwise authorisation to carry out mining would not have been obtained. In addition, DRC EIAs need to be audited every two years and updated every five years, and regular inspections are carried out by the Department for Protection of the Mining Environment. The use of Equator Principles was mainly motivated by financial considerations. In the case of Ruashi Mining, the use of Equator Principles was a condition for project finance from an Equator Principle signatory bank. Armed with the EIA reports, Ruashi mine has obtained project finance from an Equator Principles signatory bank. The mine is required to comply with the Equator Principles and associated standards. Compliance is audited by an independent third party on an annual basis. Similarly, the EIAs for Kinsenda and Musonoi are compiled to comply with the Equator Principles for potential project funding, as well as for the use of best practice principles. South African EIA policies or guidelines were not used in the DRC. However, Metorex has not taken a deliberate decision not to use South African standards. The TNC believes that since the South African legislative process is different from the one in the DRC, it is necessary to follow and comply with the local law in the host country that's the DRC. In spite of Metorex' tendency to follow local host country policies, the company has employed South African standards to compare monitoring standards, for example, standards on water quality and dust, among others.

4.3.5 The factors that motivate Metorex to carry out EIAs in the DRC

Respondents noted that Metorex carried out EIAs in the DRC because of three reasons. First, Metorex is a responsible company, and as such it is necessary to carry out environmental impact assessments and compile environmental management plans to ensure that impacts have been

identified, engineered out where possible, and properly managed. As a responsible and environmentally conscious company, Metorex is in the process of certifying all operating mines to the international standard for environmental management systems, ISO14001, which includes Ruashi mine in the DRC. Second, EIAs are required by law in the DRC and therefore Metorex has to carry out the EIAs in order for it to be in compliance with the law. Thus the TNC views compliance as an imperative for the success of the projects in the DRC. Third, EIAs were carried out as they could help Metorex unlock funding support for the projects. This is especially true in the Ruashi Mining case were funding was unlocked through following the Equator Principles and associated standards.

4.3.6 Challenges that Metorex face in Carrying out EIAs in the DRC

There are a number of challenges that Metorex face in carrying out EIAs in the DRC. First, the local DRC specialist input is limited, so it is sometimes necessary to obtain expertise from outside of the country. This is mainly as a result of lack of well qualified and well trained specialist in the domain associated with the environment in the country. Whilst external consultancies are sometimes used for the work, they sometimes lack in-depth local knowledge which also handicaps their material contributions and inputs into local projects. Second, specialist studies are also mainly affected by lack of infrastructure for scientific analysis. For instance, there is a lack of registered and certified laboratory facilities in the areas of operation, which results in inconsistencies in monitoring data. Third, the standards set for EIAs required for authorisation and compliance by the DRC government are quite different to the requirements set for Equator Principles compliance. This has meant that Metorex has to compile two EIAs for one project- thus two EIA reports for Ruashi and two EIA reports for Kinsenda. This has been a challenge to Metorex as this was viewed as a duplication of effort and an added expense to the company.

4.3.7 Recommendations to improve the regime on EIAs in the DRC

Respondents from Metorex mainly highlighted that there is no difference between local and transnational EIA requirements for EIAs in the mining industry in the DRC. EIAs are required by law for all mining operations. Transnational companies are often listed on stock exchanges around the world. Environmental reporting is included in annual reports, and shareholders may consider environmental risk before investing. Transnational companies are also aware of

perceptions regarding social and environmental performance when operating in another country. Self-regulation regarding environmental matters has the potential, therefore, to be better in transnational than local companies.

The respondents also critiqued the question mentioning that a better question to ask would be how to improve the regime governing the compilation, approval and enforcement of all EIAs in all industries, rather than focusing purely on transnational EIAs in an industry where this is already a legal requirement. Based on the proposed new question, respondents noted that an increase in local expertise is required, and international companies should be allowed to conduct EIAs in accordance with the legislative requirements.

4.4 Conclusion

This chapter has presented some findings on the policy and practice of EIAs by AngloGold Ashanti and Metorex in the mining projects the two TNCs carry out in the DRC. It has shown that AngloGold Ashanti and Metorex use various policy paths in carrying out EIAs in the DRC. It demonstrated that whereas AngloGold Ashanti uses IFC standards, the DRC laws for legal compliance purposes and its own internal company policy, Metorex uses the Equator Principles and the DRC laws. Funding considerations and compliance to local laws are the main motivating factors to employ these multiple policies when carrying out EIAs in the DRC. The two case studies also highlighted that South African or home country EIA policies have little to no effect on and use for TNCs when they carry out operations in other countries. The chapter also highlighted the challenges that Metorex and AngloGold Ashanti face in carrying out EIAs in the DRC, especially explaining the effects of lack of specialists and well trained local staff that can positively be engaged to carry out EIA. It has also shown that since EIAs laws and policies equally apply to local and foreign firms, the question on improvement of the EIA regime should be modified to mirror this. The next chapter analyses and discusses these findings.

CHAPTER 5 ANALYSIS AND DISCUSSION

5.1 Introduction

The last chapter has presented the study findings that pertain to the policy and practice of EIAs by South African mining TNCs operating in the DRC. The chapter presented the findings from Metorex and AngloGold Ashanti, which are two South African mining TNCs with mining operations in the DRC. These two TNCs have to carry out some EIAs in order to commence their mining operations as well as to change or expand their current operations. This chapter commences by summarising the key study findings. It analyses these various findings. It also discusses the policy and practice implications of the findings.

5.2. Analysis and discussion of findings

The study made a number of findings. First, the empirical evidence presented shows that there are various policies that TNCs follow in carrying out EIAs. These include company policies, host and home country national policies and international policies and guidelines, especially from international finance institutions. This behaviour of TNCs differs from that of purely national firms (Levy, 1995) who have to comply with national legal and policy requirements. The case of AngloGold Ashanti demonstrates a company that follows three interrelated EIA policy paths and the case of Metorex also shows a company that follows two EIA policy paths. These findings contrast with the assumptions made by Stern (1991) that TNCs from developed countries operating in developing countries can ignore EIA regulations. Although the study focuses on mining TNCs from South Africa, a much economically advanced emerging country than the DRC, the findings demonstrate that South African mining TNCs do not ignore regulations when they have been enacted. In fact, unlike Stern (1991) assumption, the South African mining TNCs operating in the DRC attempt to adhere to the country's policies as well as other international rules and regulations. Thus Levy (1995: 44)'s contention that TNCS "are faced with regulations and enforcement practices that vary across countries and have to make choices between a standardized or differentiated response (and, in the case of the former, which standards to follow", is supported by the findings.

The implementation of various EIAs policy paths by South African mining TNCs operating in the DRC shows that the firms have taken on board some aspects of sustainability in their operations. As such, these firms can be viewed as in the same league as many large TNCs from the developed world that are in the forefront of efforts to improve their environmental practices and performances, spurred by a growing appreciation that being green is good for business (Greeno and Robinson, 1992; Hunt and Auster, 1990; Schmidheiny, 1992; Smart, 1992). Moreover, by taking various EIAs policy paths, South African mining TNCs have gone beyond compliance with national rules and regulations in line with other TNCs from the developed world as highlighted by Johan Schot and Kurt Fischer (1993). They note that "by the end of the 1980s most large firms had formal written environmental policy statements, with the majority claiming that they go beyond compliance" with national EIA regimes.

In practice, integration of these policy paths is therefore necessary and this demands the creation of institutional structures with capabilities to implement this. Both AngloGold Ashanti and Metorex have created Environmental Units at their headquarters that implement EIAs as well as cater for integration of the various policy paths. This is in line with a number of studies that have documented that more companies are appointing senior officers or creating an independent unit with sole responsibility for the environment, health and safety (Dillon and Fischer, 1992; Koza, 1989; Rappaport and Flaherty, 1992; UN-TCMD, 1993).

This finding demonstrates South African mining TNCs operating in the DRC are internalising cost associated with environmental protection and management. This contrasts with studies made by Dadd and Carothers, 1991; Doyle, 1991; Shiva, 1993 who argued that TNCs generally view investments to protect the environment as often expensive and unprofitable as most of the benefits are externalities which cannot be captured by private firms. Thus the findings of this study are contrary to Buchholz (1993: 53) assertion that "being socially responsible costs money... These efforts cut into profits, and in a competitive system, companies that go very far in this direction will simply price themselves out of the market". Similar views that are contrary to the study findings are echoed by Noah Walley and Bradley Whitehead (1994). The fact that TNCs are able to follow the different EIA policy paths means that they have the financial wherewithal and also institutional capacities to do this. As mentioned in the Metorex case

study, carrying out the EIAs and complying with two to three different requirements means more monetary investment and sometimes duplication of the activity.

The second findings from the two case studies is that the motivations that underlie the paths that the TNCs are mainly financial and compliance based. What is apparent from these case studies is that carrying out EIAs is a complex affair for TNCs, especially as the imperatives of raising money from international markets have to also be taken into consideration. This is a bit different from domestic firms that rely on the domestic capital market and may only have to comply with local laws in order to get the funding. This is in line with studies by Bruno, (1992); Ives, (1986); and Rich, (1990) that observe that TNCs are subject to international conventions and international financial institutions but are arguably more powerful and less subject to control by national governments and agencies than purely national firms. However, although following different policy paths entails more costs to the TNCs, Petts (1999) analysed the standardisation and internationalisation of EIA policies and concluded that there are more similarities than differences in EIA requirements across various countries and institutions. Therefore in some instances the integration process involves using information gathered in fulfilment of one actor's requirements for other actors.

Another subtle and implied viewpoint is that the use of internationally recognised standards and policies is essential to TNCs as a brand management or reputation sprucing action. Although this is not directly stated, a TNC that shows compliance to international standards gets some reputational benefits in any investment that it would make worldwide (Zarsky and Gallagher, 2008). Besides this, carrying out EIAs affords the company an opportunity to negotiate with local communities. In general, EIA regimes enshrine a legal requirement for TNCs to take into account the interests of all interested and affected parties with regards to the social, economic and environmental impacts of activities, including disadvantages and benefits and for decisions to be taken in an open and transparent manner. In order to fulfil this requirement, TNCs have to engage with local communities thereby building a name and reputation with local communities during the process. Supporting this, Levy (1995:47) contends that "pressure from regulatory agencies and the public is, according to existing research, one of the most powerful drivers of corporate efforts to reduce harm to the environment". Whilst there are several organisational variables that are expected to mediate

this pressure on firms, they are likely to experience greater external pressure when they have a high public profile, which is likely to be associated with being large transnational or having a poor environmental record (Ashford, 1993; Dillon and Fischer, 1992; Kasperson, 1988; Rappaport and Flaherty, 1992; Steger, 1993; and Williams *et al*., 1993).

The third finding arising from the empirical evidence presented, and related to the point above, is that TNCs require some well qualified and well trained staff who can handle the EIA processes. Such trained cadres should be able to work on EIAs that comply with local national legal and policy requirements and be able to also comprehend and deliver on the international policy instruments that the TNCs may want to follow. However, the AngloGold Ashanti and Metorex case studies demonstrate that the DRC is not endowed with these trained cadres and therefore there is limited use of locals in carrying out EIAs by TNCs. Whilst this study points out the lack of personnel to do EIAs in the DRC and the country's dependency on external expatriates, this DRC situation can be generalised among most African countries. In most African countries there is a general lack of specialist that are well trained to carry out specialist studies associated with EIAs (Talime, 2011; Sandham *et al*. 2005). Furthermore, in countries such as South Africa, the available specialists are not equitably distributed by races and gender. Adler *et al*. (2007) also point out the shortage of governmental officials, and the high turnover of government officials tasked to enforce environment policies, in particular water and EIA policies. The lack of competent host country personnel to implement EIA policies as well as to make decisions on EIAs makes TNCs "attempt to influence the way in which the regulations are actually enforced" (Stern 1991:81).

In addition, the case studies demonstrate how a policy can be good on paper but difficult to implement. This particularly relates to the policy that makes it mandatory for consulting companies to be registered in the DRC. Whilst this policy promotes local participation and dissuades the use of non-registered companies, its implementation can be marred by shortage of qualified local personnel and local firms with capacity to deliver of the requirements that TNCs may make. However, as Manyuchi (2015) argues, this policy is in line with local content and local procurement policies that have been enacted by African countries such as Angola, and are aimed at enhancing participation of local firms. The policies are also similar to empowerment policies that other African countries such as South Africa and Zimbabwe have

enacted to empower formerly disadvantaged persons and firms owned by these persons. But the lack of local host country personnel indirectly makes the policy end up promoting fronting. Fronting, in this case means that TNCs hire international consulting firms to do the EIAs but because they may not be registered in the DRC, the international consulting firm then engages local firms that would act as if they are the ones doing the job yet the job is being done by international experts from the originally contracted international firm. The use of the domestic firms as fronts would ensure compliance with local legal demands but not be helpful in terms of capacity building and learning.

The forth key finding from the two case studies is that it is imperative to develop local enabling infrastructure for specialist studies to be a success. Respondents from Metorex alluded to the importance of laboratories and other scientific infrastructure that would enable quality evidence to be gathered and analysed during EIA processes. Unfortunately, the DRC situation seems to show a lack of such local infrastructure and therefore companies may have to rely on taking specimen out of the DRC and bring back the results to present to the government for compliance purposes. In order to deal with this, the DRC may have to provide some incentives for TNCs to localise their research and development units in the country or use the revenues generated from EIAs and other environment related penalties to construct national laboratories that would analyse specimens from TNCs and domestic firms.

The fifth key findings that can be drawn from the study is that home country EIA policies or South African EIA policies do not have much influence on the EIAs that the firms carry out of South Africa, especially if the companies adhere to the policies and laws of the host country. This goes against non-evidence based beliefs that the policies of the country of origin of the TNCs influences the content and character of EIAs that subsidiaries carry out. But though home country national policies may not have much influence on how TNCs carryout EIAs in host countries, what is also evident from the case studies is that the EIA processes that are carried out by TNCs are carried using a top down approach. Thus the TNC's headquarters totally control and direct the EIAs processes.

This top-down approach is clearly evident in the two companies as they do not have any persons that deal with EIAs in the DRC. It is only the head office staff in AngloGold Ashanti and

Metorex's environment departments that are charged with the functions of carrying out EIAs in host countries. There are two main reasons that we may proffer for this. First, EIAs are quite sensitive processes and a TNC can either get or loose project funding because of EIA reports. Second, EIA processes can also determine the success or failure of a project. Thus only staff that have a clear understanding of the politics involved in EIAs need to be involved in these. And finally, the two case studies also show that the EIA regime in the DRC has to evolve and be developed further instead of being viewed as complete. This is clear as there are no standards set to support the implementation of the EIA policies.

5.3 Lessons Learnt from the two case studies

From these findings, a number of lessons can be drawn. First, for the successful implementation of EIA policies, it is important to have well trained and qualified government functionaries working in the area of environment. In particular, for specialist studies and quality EIAs, it is important to invest in training human resources in the domain of environment as part of the national training programmes offered by academic and research institutions. Besides these, it is also important to implement capacity building and skills transfer programmes in order for local consulting firms to gain from international consulting firms.

Second, quality EIAs are also dependent on the available national supporting scientific and research infrastructure. Hence in spite of the Mining Code and Mining Regulations being the direct laws governing EIAs in the DRC, these need to interact and be linked to the regimes governing education, training, science and research in the country. Without these linkages, and institutional and policy synergies, the implantation of the EIA policies will be handicapped.

Finally, the lesson learnt is that EIA policy regimes should always be reviewed and evolve with time instead of being fixed. The reviews in EIA policies should include ensuring that supporting stands to the EIA policies are developed. As these policies operate at various levels, the lesson we learn is that it is important to create some synergies among these policies. But the key policy synergies must be created between national policies and international policies. This would reduce TNCs carrying out duplicate EIAs and also either a race to the bottom by the TNCs. Whilst the IFC guidelines and policies attempt to create the synergy with national policies, by stating that TNCs should utilise the policies that may be similar to their own or be

of higher quality, national policies do not allude to this or create an option for the use of high quality regulations.

5.4 Policy and Practice implications

The findings have some implications for EIAs policy and practice. It points out the importance of EIAs as tools that help in mitigating the negative effects of company operations on the environment. However, the study also alludes to the fact that EIA policies alone are not enough but should be supported by a set of standards that can be measured and evaluated over time. The policy implications arising from this are that policymakers and policy implementers in the DRC should work on establishing the EIAs standards in order to fortify the EIA regime.

The study also explains the importance of ensuring that policy synergies are established between policies governing EIA and those governing other domains such as education, training and research and development. The shortage of skilled environmentalist or environmental scientist and managers in the DRC can be viewed as related to training. But its effects on the execution of EIAs cannot be overemphasised. Thus the EIA policies should be viewed as nested in other policy regimes and how they affect and are affected by these other regimes should be analysed. The implementation of policies that localise research and development that TNCs are involved in may alleviate the problem of lack of infrastructure that caters for specialist studies. Therefore policies that attract TNCs to localise R&D infrastructure although not necessarily EIA policies, can also catalyse quality implementation of EIAs. These policies have been used in Latin American countries such as Chile.

Although the DRC policy mandates localisation of EIA consultancy firms, we view this as unnecessary, especially considering the current top-down approach that TNCs generally follow when dealing with EIA matters. Instead of demanding localisation of consultancy firms, the DRC policy may perform much better if it demands localisation of the environment departments of the various TNCs. Localising the environment departments of TNCs ensures that the environment management plans are closely monitored and executed by persons on the ground. This permits for timely interventions on environmental issues.

The study also highlights the importance of carrying out regular policy reviews, which facilitates the evolution of, and timely refinement of the EIA policies. Regular policy reviews allow policies to be modified to suit changing context and conditions. This implies that the DRC has to institute measures and mechanisms that promote dialogue, information exchange and consultative policy making processes. These processes should involve local communities, epistemic communities, the government of DRC as well as the TNCs. Ultimately, these would facilitate quality EIAs, which will also translate to quality in management of the environment in the long term.

5.5 Conclusion

This chapter has analysed and presented a discussion of the key findings arising from the empirical evidence. The findings point out that TNCs follow various policy paths in carrying out EIAs and this complicates the EIA process. Because the TNCs follow different policy paths, they also require more funds to carry out the EIAs and qualified and competent staff with the ability to understand and produce reports that meet these various requirements. The chapter has also highlighted some lessons that can be learnt from the two case studies. The lessons are not only limited to EIA policies but also relate to the general national policy frameworks and institutional structures that have to articulate environmental matters. The findings have several policy and practice implications, which were highlighted in this chapter.

CHAPTER 6 CONCLUSION

6.1 Introduction

As explained in the introductory chapter, this study set out to examine the policy and practice of EIAs by South African TNCs operating in the DRC. This chapter will first summarise the key findings and arguments from the previous chapters. Thereafter, the dominant lessons learnt from the empirical evidence will be highlighted. Following on that, the chapter will link the initial research assumptions of the study with the actual findings of the research. Finally the chapter will relay challenges experienced in the course of the research, and will offer recommendations for a future research agenda on the theme.

6.2 Overview of the Research

The essence of the study has been to analyse the policy and practice of EIAs by TNCs, especially focusing on African TNCs operating in African countries. In general, the study study focused on how African TNCs navigate the policy terrain of African countries in order to positively interact with the environment and thereby minimising the environmental impacts of their actions. In this regards, the study focused on a single aspect that deals with environmental management, thus EIAs. Hence the study focused on whether, how and when South African mining companies carryout EIAs in the DRC.

6.3 Lessons learnt from the study

In line with the fundamental research problem covered by the study, several lessons can be gleaned on TNCs and the environment in general, and the policy and practice of EIAs by TNCs, in particular. First, the first lesson is the role of policy synergies and linkages. These policy synergies and linkages should be at various levels. The empirical evidence presented shows that there are various policies that TNCs follow in carrying out EIAs. These include company policies, host and home country national policies and international policies and guidelines, especially from international finance institutions. A second key lesson, and closely linked to the above, is that an understanding of the motivating factors for TNCs to follow a given policy path is essential, especially in the assessment of a TNCs operations in relation to the environment. In this study, the motivations that underlie the policy paths that the TNCs choose

are mainly financial and compliance based. In addition, another subtle and implied viewpoint is that the use of internationally recognised standards and policies is essential to TNCs as a brand management or reputation sprucing action. Another third key lesson is that the effectiveness of EIAs and any environmental management tools depends on availability of qualified human capital and an appropriate enabling infrastructure. In this regards, the study shows that TNCs require some well qualified and well trained staff who can handle the EIA processes. Such trained cadres should be able to work on EIAs that comply with local national legal and policy requirements and be able to also comprehend and deliver on the international policy instruments that the TNCs may want to follow. A forth key lesson relates to the fact that policy creation/ development should always be followed by clear mechanisms and measures for policy implementation, monitoring and evaluation. The study clearly demonstrates that the DRC EIA policies can be viewed as good on paper but difficult to implement. This particularly relates to the policy that makes it mandatory for consulting companies to be registered in the DRC. A fifth and final key lesson that is that the policy and practice of environmental management and protection by some TNCs are mainly top-down. This has serious effects on how host country policies are implemented and ultimately on the protection and management of host country's environment.

6.4. Summative Research Findings

The central hypothesis of this study is that TNCs differ from domestic firms in the number of policies which they follow in carry out EIAs and also in the practice of carrying out EIAs. Indeed, this hypothesis is confirmed in this study as there are four characteristics of TNCs that make them follow different policy paths in carrying out EIAs. Unlike domestic firms, the process of carrying out EIAs by TNCs is quite complex as they adhere to national, company and international laws, policies, and guidelines. In order to be able to adhere to these policy paths, TNCs marshal their financial wherewithal and also employ well trained and qualified personnel. The financial wherewithal enable them to use international consultants and also international science and research and development infrastructure to meet any other international best practice requirements.

Another subsidiary hypothesis is that the policy paths that TNCs follow are motivated not only by legal compliance. This study observes that EIAs are carried out for other reasons than legal

compliance with host country laws, which include financial and reputational motivations. In some instances, TNCs have to raise project money from the international markets, and in order to do so they have to adhere to the funding institutional requirements on EIAs. Furthermore, EIA and other environmental management tools can also bolster a TNC's reputation. A TNC with a good track record, including in the area of environmental management, can easily penetrate other markets or set up other projects in other host countries. The study thus confirms the subsidiary hypothesis as well.

The study set out four objectives from the onset. The first objective was to examine whether, how and when South African mining TNCs carry out EIAs in the DRC. In this regards, it has been established that South African mining TNCs indeed carry out some EIAs in the DRC. TNCs use a top-down approach in carrying out the EIAs, where all processes relating the EIAs are centralised at the head offices. In some instances, TNCs use their internal environment teams to hire consultants companies that are either registered in the DRC or that can get a local DRC company to front the operations. The EIAs are mainly carried out at the project design and feasibility stages. In addition, some TNCs also carryout EIAs when they are material changes arising from either project expansion or from changes in production processes and project operations that would have not been included in the initial EIAs.

The second objective was to investigate and determine the laws, policies, and/or standards that govern the EIAs carried out by the South African TNCs. It has been observed that although TNCs follow a number of policies and laws, in most instances, the home country- thus South African- policies, laws and standards are not employed. The South African TNCs adhere to company standards, EIA standards set at international level and also the host country's laws, policies and standards. The third objective, to explore the key factors that motivate TNCs to carry out the IEAs, answers why the South African TNCs follow the three policy paths. It was observed that compliance, financial and reputational factors are the motivating factors for TNCs to follow the multiple policy paths.

The final study objective was to recommend specific policy, operations and systems changes that may be necessary to the current EIA regimes, institutions and operations. As such, a number of recommendations were made. First, EIA policies alone are not enough but should

be supported by a set of standards that can be measured, monitored and evaluated over time and thus policymakers and policy implementers in the DRC should work on establishing the EIA standards in order to fortify the EIAs regime. Second, the study recommends the creation of policy synergies and capacity building measures and mechanism in relation to human capital, scientific, research and development infrastructure in order to enable the policy and legal requirements of DRC to be met by TNCs without resorting to utilising external human capital and external infrastructures. Third, the study also recommends that it is necessary for policymakers to carry out processes of policy review regularly. Policy reviews would enable the EIA policies to evolve with time instead of being fixed and difficult to implement. Finally, it is also recommended that policymakers and policy implementers in the DRC engage and dialogue with TNCs in order to understand the challenges that the TNCs face in implementing the legal and policy requirements associated with EIAs. Hence information sharing platforms should be developed that would enable ideas between government and TNCs to be exchanged. This would ensure that quality EIAs are carried out, which also translate to quality in the management of the environment in the long term. In general, we can therefore surmise that through the study hypothesis have been confirmed, and the various study objectives have been answered in this study.

6.5 Challenges experienced in the course of the study

In the course of gathering information in pursuit of research objectives, a major challenge was insufficient secondary literature from which to analyse the policy and practice of EIAs by South African mining TNCs operating in the DRC. Whilst there is lot of secondary literature on other areas of environmental management, business and sustainability, it was quite difficult to get secondary literature that specifically focused on South Africa and the DRC. The difficulty in obtaining secondary literature, means that the study had to rely on interviews. In addition, interviewing policymakers from the DRC, thus government officials, although quite easy, most of the officials lacked clarity on the EIA policies that specifically pertain to mining operations because many of them claimed to be quite new on their current jobs.

6.6 Recommendations for future research

The study mainly focused on the practice of EIAs by South African TNCs operating some mining projects in the DRC. This means that the study focused on one sector- mining sector.

The study can be applicable to other sectors as well. Therefore it is imperative to expand this study to include other extractive sectors is so that further insights on the practice of EIAs by TNCs, the EIAs policies and laws can be gained. In future, it is also important to study the interactions of EIA policies and laws with other laws and policies that govern other issue areas. This study found that there are some linkages between EIA policies to other national policies, especially the policies relating to education, training and research. However, such findings were not explored in-depth in this study. The future study may therefore look at policies for EIAs as nested policies.

The study also focused mainly on policies in relation to EIA practice. It did not analyse the institutions for EIAs. Future studies that may analyse the institutions for EIAs and how they affect the practice of EIAs by TNCs may be necessary. More potent would be studies that combine and analyse the policy and institutions of EIAs as regimes and how they affect the practice of EIAs. Finally, the study has shown that international financial markets and considerations of getting funding from these markets affect the practice of EIAs by TNCs, further studies that would look at harnessing and domesticating existing international EIA instruments and how this would affect the practice of EIAs may be necessary.

6.7 Conclusion

There is growing demand for companies to analyse the effects of their operations on the environment. Firms worldwide are now supposed to focus on sustainable development, thus the productive efforts of firms should not be carried out at the expense of the current and future generations. As such, sustainability ethos have become central to the operating and reporting procedures of many firms worldwide. In the effort to reduce harm on the environment, many firms have started designing and implementing environmental management systems that include environmental management plans and environmental impact assessments. However, the policies and practice of EIAs is not ubiquitous across countries and among firms since some firms are domestic and others are international firms. As such, this study has examined the policy and practice of EIAs by international firms. It has highlighted that indeed TNCs carry out some EIAs in host countries. It has also highlighted that TNCs follow many policy paths in carrying out the EIAs. Overall, the study fleshed out several key lessons from AngloGold Ashanti and Metorex practice of EIAs in the DRC. These include *inter alia* the necessity of

developing quality EIAs policies, the importance of measures and mechanisms to facilitate policy implementation and the human and infrastructural capacities that should be built in order to promote positive impacts of EIAs and other tools in managing and protecting the environment. The main conclusion that can be drawn from this study TNCs follow a number of policy paths, motivated by a number of reasons, and this complicates the practice of EIAs and imposes several demands on the host country human capital base and scientific, research and development infrastructure.

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Appendix 1 Interview Guide for TNCs

South African transnational mining companies and environmental impact assessments in the Democratic Republic of Congo

A. Introduction

My name is Rosine Kasemire Dechuvi. I am a Masters in Environmental Sciences student with the University of Witwatersrand. As part of my Masters research project, I would like to ask you a few questions on how your company carries out environmental impacts assessments in the DRC.

B. Questions

1. What mining projects has your company been involved over the last five years in the DRC?

2. Did your company carry out environmental impact assessments for each of the project you mentioned?

3. When did the company carry out the EIAs for each of the project you mentioned?

4. What policies/ guidelines/ or standards guided your company in carrying out EIAs?

5. What factors influenced your choice of whether to use DRC or RSA policies/ guidelines or company standards guided?

6. What factors motivated your company to carry out EIAs in the DRC?

7. What are the specific issues pertaining to carrying out EIAs in the DRC pose challenges to your company?

8. What recommendations can you make to improve on the regime governing the conduct of EIAs by TNCs in the DRC?

Appendix 2 Interview Guide for Government Officials

South African transnational mining companies and environmental impact assessments in the Democratic Republic of Congo

A. Introduction

My name is Rosine Kasemire Dechuvi. I am a Masters in Environmental Sciences student with the University of Witwatersrand. As part of my Masters research project, I would like to ask you a few questions on national policies and environmental impacts assessments in the DRC.

B. Questions

1. What are the South African transnational mining that have opened some projects in the DRC over the past five years?

2. Do these South African transnational mining companies do any environmental impact assessments for these projects in DRC?

3. When do these TNCs carry out the environmental impact assessments?

4. What policies/ guidelines/ or standards guide these companies in carrying out EIAs in the DRC?

5. What factors influence the TNCs's choice of whether to use DRC or RSA policies/ guidelines or company standards?

6. What factors motivate these companies to carry out EIAs in the DRC?

7. What are the specific issues pertaining to carrying out EIAs in the DRC pose challenges to the South African companies?

8. What recommendations can you make to improve on the regime governing the conduct of EIAs by TNCs in the DRC?

Appendix 3 Ethics Clearance for the study

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Dechuvi

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER H14/06/20**
PROJECT TITLE	South African transnational companies and environmental impact assessment in the Democratic Republic of Congo
INVESTIGATOR(S)	Ms KR Dechuvi
SCHOOL/DEPARTMENT	School Of Geography, Archaeology & Environmental Studies
DATE CONSIDERED	20 June 2014
DECISION OF THE COMMITTEE	Approved Unconditionally
EXPIRY DATE	24/08/2016

DATE 25/08/2014

CHAIRPERSON E.M. Tabane
pp (Professor T Milani)

cc: Supervisor: Dr D Simatele

DECLARATION OF INVESTIGATOR(S)

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**

_____ **Signature**

_____/_____/_____ **Date**