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TOWARDS SUSTAINABLE DEVELOPMENT THROUGH MINERAL POLICY: SOUTHERN AFRICA

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“A research report submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Science in Engineering”.

Johannesburg, 2015

Declaration

“I declare that this research report is my own, unaided work. It is being submitted for the degree of Master of Science 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)

.....day of..... (Month)..... (Year)

ABSTRACT

National mineral policy is a fundamental tool that can be utilised to orient the mineral sector of a nation towards sustainable development. The results of mining activities lead to “sustainable development” in the nation through “economic growth” and “social development” while the environment is preserved and protected.

In Southern Africa certain key components need to be addressed within a nation’s mineral policy document to ensure that it orients the mining sector towards sustainable development. These are environmental, social and economic concerns. Some of these are: mine closure plans, environmental rehabilitation, gender imbalances, local community concerns, HIV/ AIDS, regional integration and value addition.

The mineral policy documents for Namibia, Tanzania, Malawi and Zambia were evaluated through the eye of sustainable development. This evaluation found that every policy had aspects and policy statements that built up the environment, social and economic pillars of sustainable development. Thus all the policies are oriented towards sustainable development.

A comparative analysis was done using these mineral policies. It was based on compliance to the key components. The Minerals Policy of Namibia, 2003 was found to be the policy most oriented towards sustainable development. The Mineral Resources Development Policy, 2013 of Zambia was found to be the least oriented towards sustainable development.

DEDICATION

In loving memory of my late Mother and Father
Leslie More Mjanja and Nkulumo Mpuburiri Mjanja.

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Last, but above all and greatest of all, Thank you Lord Jesus!

“I have fought a good fight, I have finished my course, I have kept the faith. 2 Timothy 4:7”.

TABLE OF CONTENTS

CONTENTS **Page**

DECLARATION **2**

ABSTRACT **3**

DEDICATION **4**

ACKNOWLEDGEMENTS **5**

LIST OF FIGURES **12**

LIST OF TABLES **13**

LIST OF ABBREVIATIONS AND ACRONYMS **15**

CHAPTER 1: INTRODUCTION **18**

1.1 Mineral Resources in Africa 18

1.2 Mineral Policy 20

1.3 Sustainable Development 21

1.4 Sustainable Development in Mining 28

1.5 Problem Statement 31

1.6 Importance of the Study 34

1.7 Objective and Research Questions 35

1.8 Methodology 36

1.9 Limitations to the Study 37

1.10 Content of the Research Report 38

CHAPTER TWO: LITERATURE REVIEW **41**

2.1 Sustainable Development Through Mining Policy 41

2.2 Some Sustainable Development Initiatives:
Implications on Mineral Policy in Southern Africa 42

2.2.1 "Harmonisation of Mining Policies, Standards, Legislative and Regulatory Framework in Southern Africa, March 2006". 42

2.2.2 "The New Partnership for Africa's Development". 46

2.2.3 The Africa Review Report on Mining 49

2.2.4 The Africa Mining Vision 51

2.2.5 "Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development, Mining Policy Framework, 2013". 57

2.2.6 The Extractive Industries Transparency Initiative 59

2.2.7 The Kimberley Process 61

2.2.8 Yaounde Vision on Artisanal and Small-scale Mining 62

2.3 National Mineral Policy Sustainability Framework: Expected Components of the Environmental, Social and Economic Pillars of the Mineral Policy in Southern Africa 63

2.3.1 The Environmental Pillar of Mineral Policy: Southern Africa 64

2.3.2 The Social Pillar of Mineral Policy: Southern Africa 67

2.3.3 The Economic Pillar of Mineral Policy: Southern Africa 74

2.3.4 Other Issues 81

CHAPTER THREE: NAMIBIA 82

3.1 Mineral Resources 82

3.2 Mineral Policy History and Background 83

3.3 Minerals Policy of Namibia (2003): Environmental, Social and Economic Pillars 84

3.3.1 Discussion: Through the “Eye” of Sustainable Development - Environmental 87

3.3.2 Discussion: Through the “Eye” of Sustainable Development - Social 92

3.3.3 Discussion: Through the “Eye” of Sustainable Development - Economic 97

3.4 Conclusion 98

CHAPTER FOUR: TANZANIA **99**

4.1 Mineral Resources 99

4.2 Mineral Policy History and Background 99

4.3 The Mineral Policy of Tanzania (2009): Environmental, Social and Economic Pillars 101

4.3.1 Discussion: Through the “Eye” of Sustainable Development -Environmental 103

4.3.2 Discussion: Through the “Eye” of Sustainable Development -Social 107

4.3.3 Discussion: Through the “Eye” of Sustainable Development -Economic 113

4.3.4 Other Issues 113

4.4 Conclusion 113

CHAPTER FIVE: MALAWI **116**

5.1 Mineral Resources 116

5.2 Mineral Policy History and Background 116

5.3 Mines and Minerals Policy of Malawi (2013): Environmental, Social and Economic Pillars 118

5.3.1 Discussion: Through the “Eye” of Sustainable Development –Environmental 119

5.3.2 Discussion: Through the “Eye” of Sustainable Development – Social 122

5.3.3 Discussion: Through the “Eye” of Sustainable Development – Economic 126

5.3.4 Other Issues 126

5.4 Conclusion 127

CHAPTER SIX: ZAMBIA 128

6.1 Mineral Resources 128

6.2 Mineral Policy History and Background 128

6.3 Mineral Resources Development Policy of Zambia (2013): Environmental, Social and Economic Pillars 131

6.3.1 Discussion: Through the “Eye” of Sustainable Development - Environmental 132

6.3.2 Discussion: Through the “Eye” of Sustainable Development - Social 135

6.3.3 Discussion: Through the “Eye” of Sustainable Development - Economic 139

6.3.4 Other Issues 139

6.4 Conclusion 140

CHAPTER SEVEN: COMPARATIVE ANALYSIS,

DISCUSSION AND CONCLUSION 141

7.1 Comparative Analysis of Sustainable Development Pillars: Mineral Policies of Namibia, Tanzania, Malawi and Zambia 141

7.2 Quantitative Analysis Representation of Mineral Policy Pillars Using Compliance Scores 147

7.3 Discussion 149

7.3.1 Compliance Based Comparative Analysis: Environment 149

7.3.2 Compliance Based Comparative Analysis: Social 150

7.3.3 Compliance Based Comparative Analysis: Economic 150

7.4 Conclusion, Recommendations and Further Study 151

REFERENCES 154

LIST OF FIGURES

Figure		Page
Figure 1.1:	Venn diagram of “sustainable development”.	26
Figure 7.1:	Pillar Bar Chart for Namibia, Tanzania, Malawi and Zambia	148

LIST OF TABLES

Table		Page
Table 1.1:	Some Mineral Resources and Reserves of Africa 2005	18
Table 2.1:	Estimates of ASM miners in some Southern African countries	78
Table 3.1:	The Environmental Pillar of the “Minerals Policy of Namibia (2003)”.	85
Table 3.2:	The Social Pillar of the “Minerals Policy of Namibia (2003)”.	89
Table 3.3:	The Economic Pillar of the “Minerals Policy of Namibia (2003)”.	94
Table 4.1:	The Environmental Pillar of the “Mineral Policy of Tanzania (2009)”.	102
Table 4.2:	The Social Pillar of the “Mineral Policy of Tanzania (2009)”.	105
Table 4.3:	The Economic Pillar of the “Mineral Policy of Tanzania (2009)”.	109
Table 5.1:	The Environmental Pillar of the “Mines and Minerals Policy of Malawi (2013)”.	119

Table 5.2: The Social Pillar of the “Mines and Minerals Policy of Malawi (2013)”. 121

Table 5.3: The Economic Pillar of the “Mines and Minerals Policy of Malawi (2013)”. 123

Table 6.1: The Environmental Pillar of the “Mineral Resources Development Policy of Zambia (2013)”. 131

Table 6.2: The Social Pillar of the “Mineral Resources Development Policy of Zambia (2013)”. 133

Table 6.3: The Economic Pillar of the “Mineral Resources Development Policy of Zambia (2013)”. 136

Table 7.1: Environmental Pillar 142

Table 7.2: Social Pillar 144

Table 7.3: Economic Pillar 145

Table 7.4: Quantitative Compliance Scores for Namibia, Tanzania, Malawi and Zambia 148

ABBREVIATIONS AND ACRONYMS

ACP:	**"**African Caribbean Pacific".
AIDS:	"Aquired Immune Deficiency Syndrome".
AMDC:	"African Minerals Development Centre".
AMP:	"African Mining Partnership".
AMV:	"Africa Mining Vision".
ASM:	"Artisanal and Small Scale Mining".
AU:	"African Union".
AUC:	"African Union Commission".
CASM:	"Communities and Small-scale Mining".
CDA:	"Community Development Agreement".
CSD:	"United Nations Commission on Sustainable Development".
CSR:	"Corporate Social Responsibility".
EAC:	"East African Community".
ECA:	"Economic Commission for Africa".
EIA:	"Environmental Impact Assessment".
EITI:	"Extractive Industries Transparency Initiative".
EPF:	"Environmental Protection Fund".
GDP:	"Gross Domestic Product".
GMI:	"Global Mining Initiative".
GRI:	"Global Reporting Initiative".
HIV:	"Human Immunodeficiency Virus".
ICMM:	"International Council on Mining and Metals".
IFC:	'International Finance Corporation".
IGF:	"The Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development ".
IIED:	"International Institute for Environment and Development".
IISD:	"International Institute for Sustainable Development".
ISG:	"International Study Group".

IMF: “International Monetary Fund”.

JPOI: “Johannesburg Plan of Implementation”.

KP: “Kimberley Process”.

KPCS: “Kimberley Process Certification Scheme”.

MAP: “Millennium Africa Recovery Plan”.

MDG’s: “Millennium Development Goals”.

MMSD: “Mining, Minerals and Sustainable Development Project”.

NEPAD: “The New Partnership for Africa’s Development”.

NGO: “Non Governmental Organisation”.

NPCA: “NEPAD Planning and Coordinating Agency”.

OAU: “Organisation of African Unity”.

OECD: “Organization of Economic Cooperation and Development”.

UN: “United Nations”.

PGMs: “Platinum Group Metals”.

RECs: “Regional Economic Communities”.

RISDP: “Regional Indicative Strategic Development Plan”.

SADC: “Southern African Development Community”.

TMAA: “Tanzania Mineral Audit Agency”.

UEMOA: “Union Economique et Monétaire Ouest Africaine”

UNECA: “United Nations Economic Commission for Africa”.

UNECA-SA: “United Nations Economic Commission for Africa Southern Africa Office"

UNCED: “United Nations Conference on Environment and Development”.

UNCSD: “United Nations Commission on Sustainable Development”.

UNCTAD: “United Nations Conference on Trade and Development”.

UNDESA: “United Nations Department of Economic and Social Affairs”.

UNEP: “United Nations Environment Programme”.

WB: “World Bank”.

WBCSD: “World Business Council on Sustainable Development”.

WCED: “World Commission on Environment and Development”.

WSSD: “World Summit on Sustainable Development”.

ZCCM: “Zambia Consolidated Copper Mines”.

CHAPTER ONE: INTRODUCTION

1.1 MINERAL RESOURCES IN AFRICA

Africa is a continent richly endowed with mineral resources that range from metallic ores, solid energy minerals, industrial minerals to precious stones, oil and gas. This mineral wealth represents an important potential basis for economic growth and development, which is desired in Africa. Table 1.1 shows selected mineral resources in Africa and their global ranking.

Table 1.1: Some Mineral Resources and Reserves of Africa 2005

Mineral	Africa % of World Production	Ranking	Africa % of World Reserves	Ranking
PGMs	54	1	60+	1
Phosphate	27	1	66	1
Gold	20	1	42	1
Chromium	40	1	44	1
Manganese	28	2	82	1
Vanadium	51	1	95	1
Cobalt	18	1	55+	1
Diamonds	78	1	88	1
Aluminum	4	7	45	1

Source: UNECA (2009); Africa Mining Vision (2009)

Mineral reserves of soda ash, bauxite, vermiculite, zirconium, ilmenite and rutile in Africa are also ranked first or second in the share of world reserves (Yager et al., 2014). In some African countries like Burkina Faso the mineral sector plays a minor role in the national economy as ascertained by the contribution of the minerals sector to the GDP which was 2.8% as at 2009.

For countries like Equatorial Guinea and Gabon the mining sector is economically significant accounting for 61% as at 2009 and 50% as at 2001 of the GDP respectively (Mtegha et. al, 2011). The paper by Mtegha et al. (2011) states that within limitations, over time the gross domestic product (GDP) can be used to determine the mining sector's contribution to national economies.

In the Southern Africa Region in particular, mining is an industry of strategic importance. Roughly half of the world's vanadium, platinum, and diamonds originate in the region, along with 36% of gold and 20% of cobalt (SADC, n.d). These minerals contribute greatly to the gross domestic product and employment, and many nations in Southern Africa depend on mineral exports for their foreign exchange earnings. In the Southern Africa region the sector directly accounts for some 60 per cent of the sub region's foreign exchange earnings, contributes an average of 10 per cent to the subregional GDP and employs about 5 per cent of total wage earners (United Nations Economic Commission for Africa Southern Africa Office UNECA- SA, 2008). For many years till 2006, South Africa was the world's major gold producer, recently other countries have surpassed South Africa (U.S. Geological Survey, 2015).

In the developed world, several mineral resource rich economies have used their resource assets to catalyse diversified industrial development. Examples of these are Finland, Sweden and Germany (Africa Mining Vision, 2009). Canada provides another example of economic growth through the minerals sector which provides the basis for 150 communities in Canada's rural and northern regions as well as employment for over 340 000 Canadians (Minerals and Metals Policy of the Government of Canada, 1996).

1.2 MINERAL POLICY

Mineral policy refers to government decisions and actions that affect the mineral system and how this system affects the economy and society. Mineral policy is a vision, a statement of intent and an aspiration based on societal values. Otto and Cordes (2002) defined mineral policy as “the government’s position on the key mineral sector topics that the government has or could choose to have control over”. It is a statement of the strategic intentions of a Government framed within the context of the overall socioeconomic development objectives of the country. Buck and Elver (1970) stated that mineral policies cannot be separated from the underlying general national policy objectives.

Otto (1997) argued that every nation has a mineral policy. This can be in the form of a standalone document or as must be interpreted from the legal framework, government administrative practices and announcements by key government officials. The latter being a challenging and highly speculative exercise. An unambiguous, comprehensive stand alone national mineral policy obviously has many advantages and functions best in aiding regulatory reform. For the purpose of this research, only countries with stand alone mineral policy documents are studied. The countries selected for this study are all in the Southern African region. Related legislation and regulations may or may not be mentioned and will not be examined.

Mineral policies are utilized to address paramount issues and topics relevant to the mineral resources of the nation with an aim of achieving the desired goals rooted in the national objectives. A good mining policy firstly provides guidance to industry regarding Government’s position on key issues. Secondly, it provides guidance to Government departments, administrators and lawmakers in terms of regulating the sector. Lastly, a national mining policy provides a rally point for consensus-building on how the sector should

be regulated (Otto and Cordes, 2002). Implementation of the policy must be accompanied by articulation of the policy instruments into mineral laws, subsidiary legislation and other structures with the appropriate human skills and capacity to administer such a policy (Mtegha, Cawood and Minnitt, 2006). Thus, the national mineral policy is the foundation of regulatory, fiscal and legislative instruments in this sector.

Otto and Cordes (2002) examined a number of mining policies to identify the most common elements covered. They found that national mining policies generally deal with issues relating to the scope of mineral development challenges, legislative frameworks, regulatory agencies, sovereignty and ownership issues, economic and quality-of-life concerns, such as social, environmental and sustainable development. The resulting policy or law is unique and must be understood in the context of the development challenges facing the particular country. Despite the uniqueness, there are many traits that are common to national mining policies.

Mining companies and organisations necessarily adhere to national mineral policy, thus it should be perceived as a national tool easily utilizable to achieve optimum economic and social benefit while minimizing environmental degradation, that is, sustainable development.

1.3 "SUSTAINABLE DEVELOPMENT"

It is generally known that sustainability is not a recent idea or even a new realisation. The need for a balance between the environment, social issues and the economy has long been recognized by various cultures over the course of human history. In today's society, the emphasis of these ideas is what is new. Some of the current driving forces behind the sustainability imperative are environmental degradation that results in the lowering of the

quality of people's lives, the forecasts that the world could be running out of some resources, the rapid increase in population in the face of finite resources and an increased consciousness of environmental and social issues in this generation (Yazdi et al., 2012).

The "United Nations Conference on the Human Environment, 1972" in Stockholm spearheaded global assemblies on sustainability. Thereafter as a result of various international conferences, projects and proposals commencing from 1972 till 1992, an outline and a deeper revelation about the issue of "sustainable development" developed and became widespread. (Drexhage and Murphy, 2010)

Of particular significance, was the United Nations meeting in 1987, the "World Commission on Environment and Development (WCED)". Both the developed and the developing nations were represented. The Prime Minister of Norway at that time, Gro Harlem Brundtland was the chair person. At this meeting, the term "sustainable development" was defined in the WCED renowned Brundtland Report entitled "Our Common Future". It was defined as "development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs". This definition is widely accepted and utilised. Two major principles are central in this definition of sustainability. These are the issue of "needs", and also that of "limitations". The needs particularly of those that are less fortunate in the world and limitations as a result of technology, societal structure and the environments finite ability at each point in time. This definition focuses on intergenerational equity. The adoption and the use of this Brundtland Report by the General Assembly of the United Nations gave the term "sustainable development" global recognition (Drexhage and Murphy, 2010).

In 1992, the "United Nations Conference on Environment and Development (UNCED)", otherwise known as the "Earth Summit" was held in Rio de

Janeiro, Brazil. This conference led to production of a document called the **"**Rio Declaration on Environment and Development". It consists of 27 legally non- binding principles designed to commit governments to ensure environmental protection and responsible development. The Declaration recognizes that the only way to have long term social and economic progress is to link it with environmental protection and advocates that today's development shall not undermine the resource base of future generations. The Declaration includes many progressive approaches like the polluter pays principle and the precautionary principle.

The polluter pays principle, in simple terms, states that the polluter bears the cost of the pollution (Organization of Economic Cooperation and Development, OECD, 1972). It first gained international recognition in 1972 through the OECD Guiding Principles. The Rio Declaration (1992) reaffirmed it as Principle 16: "National authorities should endeavor to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment".

The precautionary principle was officially articulated at UNCED (1992) through the Rio Declaration on Environment and Development which defined it in Principle 15 as: "where there are threats of serious or irreversible damage a lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation" (Borne, 2011). This is the most widely quoted definition of the precautionary principle (Cameron, 2006).

Agenda 21 was another result of the UNCED (1992). It outlines key policies. It also provides a foundation for sustainable development strategies and is the blueprint for sustainability. The issues it addresses include poverty, excessive consumption, health and education, cities and agriculture; food and natural resource management (Kubiszewski and Cleveland 2012).

Agenda 21 consists of forty chapters that are divided into four sections as outlined below.

a) Social and economic dimensions: developing countries, poverty, consumption patterns, population, health, human settlements, integrating environment and development.
b) Conservation and management of resources: atmosphere, land, forests, deserts, mountains, agriculture, biodiversity, biotechnology, oceans, fresh water, toxic chemicals, hazardous, radioactive and solid waste and sewage.
c) Strengthening the role of major groups: women, children and youth, indigenous peoples, non-governmental organizations, local authorities, workers, business and industry, farmers, scientists and technologists.
d) Means of implementation: finance, technology transfer; science, education, capacity-building, international institutions, legal measures, information.

In December of 1992, the UN General Assembly formed the “United Nations Commission on Sustainable Development” (UNCSD). Its purpose was to effectively implement resolutions from the UNCED. Since its inception this Commission has greatly advanced the sustainable development agenda on an international level.

Many other important international conferences have been held to date on “sustainable development”. Some of these resulted in sustainable development goals such as the “Millennium Development Goals (MDG’s), 2000”, by the UN targeted to be achieved by the year 2015. These goals include eradicating extreme poverty, hunger, empowerment of women, ensuring environmental sustainability and developing a global partnership for developmental issues (United Nations, 2000).

In 2002 in Johannesburg, the “World Summit on Sustainable Development (WSSD)”, also called Rio+10 or “Earth Summit, 2002” was held. It reaffirmed

a global commitment towards sustainable development and resulted in two main documents being negotiated and adopted. These are the “Johannesburg Declaration of Sustainable Development” document. The second document was the “Johannesburg Plan of Implementation” (JPOI).

The first document, “Johannesburg Declaration of Sustainable Development” reaffirmed support of sustainability by governments at all levels. Issues mentioned include: HIV/AIDS, the achievement of the MDG’s, also for private sector accountablility. The second document, the Johannesburg Plan of Implementation (JPOI) is an action plan containing commitments by governments to take certain action. An extensive list of partnership agreements among governments, educational and other groups regarding specific projects on sustainable development also resulted from this summit.

At the 2002 meeting, the definition of “sustainable development” was expanded. “The Three Pillars of Sustainable Development” were identified. These are “the environment, social and economic”. These pillars are illustrated in Figure 1.1 which is the most conventional, commonly depicted and widely accepted illustration of sustainable development currently. It illustrates well that sustainability is attained only in the case where the environment is conserved and/or protected, the economic growth as well as societal progression are all given due, fitting and sufficient consideration. When only social and environmental issues are considered, the development is termed bearable. When social and economic factors are considered only, the development is termed equitable according to Figure 1.1. When only the environment and economic issues are given consideration, the development is simply viable.

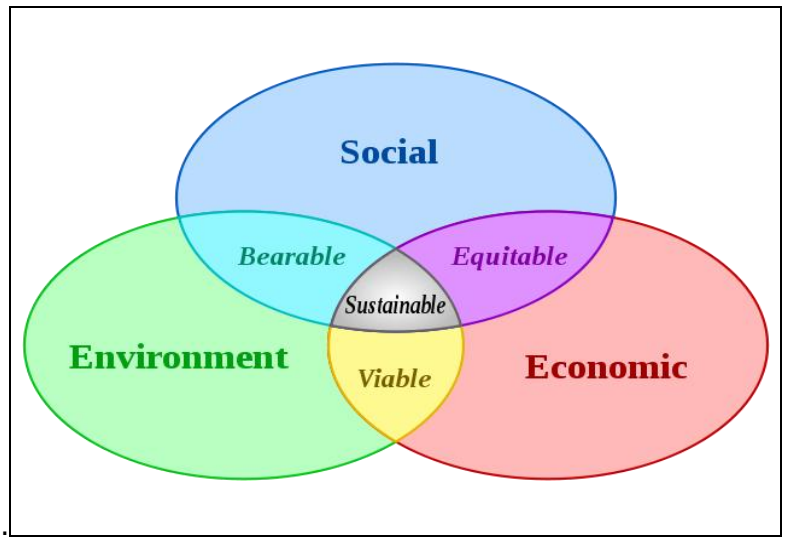


Figure 1.1: Venn diagram of sustainable development

Source: "http://greenfishbluefish.wordpress.com/2012/02/20/rio20-united-nations-conference-on-sustainable-development/".

A collective responsibility was undertaken at the WSSD, 2002 to fortify and develop these independent yet interconnected sustainability pillars at all levels. This advancement would be from individual to international level, achieved by changing policy and practice.

In June 2012, the "United Nations Conference on Sustainable Development (UNCSD)" was held. This was the third such global assembly on sustainability. It is also known as Rio+20 because it was held in Rio de Janeiro, Brazil, 20 years from the initial such conference the 1992 Earth Summit. It was a 20 year review and a follow up. The primary outcome was a non binding working paper entitled, "The Future We Want", where governments renewed their political commitment to sustainable development. Governments were also mandated to establish the "High Level Political Forum" for monitoring the implementation of sustainable development plans

and also to come up with Sustainable Development Goals as the MDG's end in 2015.

Sustainable development is endorsed by governments, international institutions, businesses and civil society. Many prominent international organizations have embodied sustainable development into their operations and their governing mandates. These include the "International Monetary Fund", (IMF).

The social license to operate is increasingly a requirement to create a conducive environment for business (Prno, 2013; Thomson and Boutilier, 2011, Prno and Scott Slocombe, 2012). The minerals and mining industry in particular, faces some of the most difficult sustainability challenges thus, must engage its many different stakeholders and address their sustainability concerns in order to ensure its continued social license to operate (Azapagic, 2003). One of the effective ways of doing this is through "Corporate Social Responsibility (CSR)".

According to UNECA and AU (2010, p. 128), "Corporate Social Responsibility is a framework for formulating and implementing the expanded roles and responsibilities of the corporate sector to include incorporation of the expectations and needs of a wider community in the business model". Initiatives should be on areas regarding social and community development, the environment, employment and labour as well as human rights.

The ISG Report (UNECA, 2011) states that there is no generally accepted definition of CSR and no consensus on the list of the issues it covers. However most definitions incorporate societal concerns into their business policies and operations that are environment, economic and social in nature. As CSR has evolved, increasingly it has become linked with sustainable development and in particular making sure that environmental and community issues are adequately addressed (ISG Bulletin 6, n.d.).

The United Nations Global Compact (The Global Compact, 2014), Equator Principles (Equator Principles, 2006; Equator Principles, 2013) and the Global Reporting Initiative, GRI (GRI 2006; GRI 2010; GRI 2011; GRI 2013) are examples of voluntary initiatives spearheaded by the private sector in line with CSR. The sustainable development agenda has also been taken up by International Non Governmental Organisations (NGO's), for example, Friends of the Earth and Oxfam International. Many local NGO's are also active in this cause in their various localities.

Thinking and practice have evolved over the past couple of decades since the theoretical frameworks of sustainable development were laid. Sustainable development is not a set of defined concepts. It is a fluid evolving concept. It is a set of guiding principles and values determined by variant factors such as place, time, values and resources. Common characteristics however underlie and form the basis of any thought in sustainable development.

1.4 SUSTAINABLE DEVELOPMENT IN MINING

For the mining sector, sustainability entails the attainment of social and economic progress while the environment is conserved and protected. All this is facilitated through a good transparent and accountable governance structure. Sustainability in mining is through the transformation of minerals into other forms of capital. As minerals represent endowed wealth for communities and societies, sustainable development therefore involves a transition from natural capital to human-made capital and finally to social capital and the well-being of human societies.

During the 1990's Forum for the Future developed the five capitals model which can also be used as a framework for sustainability. It provides a simple way to understand sustainability. The five capitals are natural, human, social, financial and manufacturing capital. These five types of capital are used in

any kind of organization to deliver its products or services. Human capital includes work- life balance, diversity and equity, safety, occupational health and hygiene and ergonomics. Manufactured Capital includes information and management, technical, procurement and infrastructure. Financial capital includes profitability, return on investment, commodity price, intellectual property, share price and so forth. Social Capital includes political systems, governance frameworks, human rights, communication, development and training and so forth. Natural capital includes the natural resources and processes utilised or extracted by the mining company from nature in order to produce. A sustainable organization increases these capitals or keeps their levels constant, rather than deplete or degrade them. In order to avoid trade-offs the mining company needs to consider the impact of its activities on each of the capitals in an integrated way as building any one capital at the expense of the others will eventually lead to a situation where further development is impossible. The model allows consideration of wider environmental and social issues and how these can affect long term profitability, thus establishing the close links between sustainability and competitiveness (Forum for the Future, n.d).

As it is generally known, “sustainable development” views differ in developed nations versus the developing nations especially regarding the environmental aspect (Ellison, 2014). Advocates in developed countries have an extreme view of total preservation of natural resources that are untouched, in order not to compromise the quality of life especially pertaining to issues like global warming. Developing countries, however, because of the need for these resources to work for the good of the people, adopt a sustainable attitude to use resources “wisely” that is to maximize the potential of the resource, for the improvement of the standard of life for all in the surrounding and affected communities while limiting adverse effects of resource use (Birnie, Boyle & Redgewell, 2009).

Sustainability within the mining sector is quite involving and the issue is not clear cut. Inevitably, the question arises whether “sustainable development” can truly be realized in the mining sector as a non renewable resource is being extracted and impacts of mining can only be controlled or minimized rather than prevented. Mining can indeed stand as a sustainable activity. It might not be giving back to the environment but rather with managed and minimised impact on the environment it can vastly improve the lives and brightening the future of people, especially in developing countries. After all, it must also be realized that it is an activity that cannot be avoided, as graphically illustrated by the quote below;

“*Everything that is used and consumed by people comes out of the ground one way or another. If it’s hardware, it’s mined, if it’s eaten, it’s grown and harvested using chemical, fertiliser and equipment that is mined. If it’s worn, it’s grown and produced on hardware that is mined. It’s quite simple: more people, more money, more consumption, more mining”*. (Michael Solomon, 2011)

Thus the need for mining to be carried out sustainably.

In late 1998, the “Global Mining Initiative” (GMI) was launched to prepare the mining sector for the upcoming Rio+10 Earth Summit 2002. A group of nine large companies created it as a result of increased awareness by business entities to incorporate “sustainable development” principles in their policies.

Between 2000 and 2002 the GMI financially backed a research project entitled the “Mining, Minerals and Sustainable Development (MMSD) Project”. This project was created by the “World Business Council on Sustainable Development (WBCSD)”. It was managed by the “International Institute for Environment and Development (IISD)”. Its purpose was to see how best the minerals and mining sector could maximally contribute to “sustainable development”, from the local to the global level.

The MMSD project included Regional MMSD processes of Scoping, Situation Analysis and Framework Development. These processes were done in various regions including Southern Africa (MMSD Southern Africa, 2002).

In 2001 the Global Mining Initiative (GMI) transformed to the “International Council on Mining and Metals (ICMM)”. This was as a response to the MMSD project.

In 2003 the ICMM adopted the “Sustainable Development Framework”. It consisted of principles, statements and reporting requirements to be adhered to by all members.

In May 2008, a commitment was made by the members to annually report on their sustainable development. To do this they use sustainability reporting standards as set by the “Global Reporting Initiative (GRI)”.

Most mining companies rose to the challenge and began to produce various reports like the Safety Health Environment and Quality Management Reports that reflected their level of compliance to sustainability initiatives.

1.5 PROBLEM STATEMENT

National mining policy is a major fundamental tool that can be utilized to address and facilitate “sustainable development” in a nation through the mineral resources sector. Africa is well endowed with mineral resources (UNECA, 2009). Sustainability in mining is attained through the transformation of minerals into other forms of capital. Minerals represent endowed wealth for communities and societies, sustainable development therefore involves a transition from natural capital to human-made capital and finally to social capital and the well-being of human societies. For the benefit

of the nation, effort must thus be made to ensure and evaluate that national mineral policy is ‘oriented towards sustainable development’.

Many African countries do not have sustainable development principles in their national mining policies (UNECA, 2009). Mtegha et al. (2011) notes that despite the potential of mineral endowments to promote increased economic performance, a disappointing trend for most of the mineral rich Sub-Saharan Africa countries is that these resource-rich countries have not delivered expected economic growth and improved social living standards as compared to other countries in Africa. Mismanagement of the mineral endowments needs to be addressed by implementing sustainable development policies that would result in increasing national wealth.

This report focuses on Africa, Southern Africa in particular, within the context of sustainable development and mineral policy. In this region the state has custodianship of all mineral resources thus has the responsibility to ensure that their exploitation is to the benefit of all nationals, one of the ways to enable this is through the mineral policy document being based on sustainable development principles.

The question answered through evaluation of the national mineral policy for the nations under study is to what extent has sustainable development been regarded in each policy, that is, is the mineral policy oriented towards sustainable development? This question is answered by noting which sustainability challenges have been addressed in each mineral policy and evaluating to what extent each challenge has been addressed. Are sustainability issues adequately addressed? This is deducted primarily by comparison with the sustainability framework that was developed for the purpose of benchmarking in this research report.

Sustainability challenges that have been addressed in each mineral policy are grouped into the “environmental, social as well as the economic pillars”. A

comparison of these pillars for the mineral policy documents for Namibia, Tanzania, Malawi and Zambia benchmarks the mineral policy pillars relative to one another for the four countries and thus reveals relative “sustainability strength” for each country mineral policy pillar. This sustainability strength is relative between the four countries under study and thus is very loosely referred to in this research report with terminology ranging from ‘very strong’ to ‘weak’.

By comparing the three pillars for each country under study with those of the other nations under study a conclusion could then be drawn on the general “orientation” of each Southern Africa mineral policy towards sustainable development relative to the others.

Comprehensive literature is available of initiatives, landmark events as well as general literature that guide or document mineral policy in southern Africa with regards to sustainable development. These vary from global to regional in nature. Through this comprehensive literature review a general guiding framework of expected components for southern Africa mineral policy documents to be oriented toward sustainable development was thus outlined. Only components that are in line with international best practice are included in the sustainability framework. These were identified through the comprehensive literature review by them being common in literature that is in line with this standard. The expected components were grouped under the environmental, social and economic pillars. This sustainability framework serves as the benchmark for this research report for mineral policy in the Southern Africa region and thus a means for evaluation and analysis.

In addition to common challenges addressed within the mineral policy documents in the southern Africa region, there are also challenges peculiar to each nation under study. The national mineral policy document must in

addition, address those challenges peculiar to that nation in order to attain sustainable development.

This study is on mineral policy in the Southern Africa region, specifically on the stand alone current mineral policy documents of four selected nations: Namibia, Tanzania, Malawi and Zambia. All of these nations have fully articulated mineral policy documents.

1.6 IMPORTANCE OF THE STUDY

Minerals are an important resource, able to be used to facilitate much needed economic growth and social development in Southern Africa. This resource must however be exploited in a way that is not detrimental to the environment, that optimizes social and economic benefits.

Mining Policy is a strategic tool defining the minerals sector and is the driving force behind legislation in the mineral resources sector. In Southern Africa, nations are increasingly developing stand alone mineral policy documents. These policy documents aim to be of international standards and to clearly convey and guide the minerals sector towards achieving set goals.

Nations in Southern Africa are increasingly attempting to integrate the concept of “sustainable development” into their mineral policy documents. Doing this results in achievement of the sustainable development of the nation through the exploitation of the mining and minerals sector. It is thus imperative for nations in Southern Africa with standalone mineral policy documents to evaluate that their mineral policy document is oriented towards sustainable development and also benchmark against others regionally.

1.7 OBJECTIVE AND RESEARCH QUESTIONS

The objective of this research report is the determination of whether mineral policy documents in the Southern African countries under study are oriented toward sustainable development. Also to evaluate how strongly these mineral policy documents in Southern Africa are oriented towards sustainable development**.** The Southern Africa countries that were selected as case studies were Namibia, Tanzania, Malawi and Zambia

The research questions that this research report answers are:

1. What are general key components that are fundamental to mineral policy documents in Southern Africa, in order to orient the nation towards sustainable development through the mineral resources sector? Through an intensive and extensive literature review develop a comprehensive framework for sustainable development for the Southern Africa region.

2. Through detailed evaluation and study of the Mineral Policy Documents for Namibia, Tanzania, Malawi and Zambia: Are the sustainability key components in the framework under the, “environment, social and economic pillars” contained within the policy documents? Note also country specific sustainability key components that may be present in individual mineral policy documents.

3. Looking individually at each country under study, is the mineral policy orienting the nation towards sustainable development through the minerals sector? This will be determined by compliance to the sustainable development framework developed.

4. Comparative analysis of the sustainability pillars for the mineral policy documents for the nations under study, Namibia, Tanzania, Malawi and Zambia serves to benchmarks them relatively against each other.

Thus a relative comparison can be made of which Southern Africa mineral policy under study is relatively the strongest and which mineral policy under study best orients the nation towards sustainable development. A comparative analysis also is useful to highlight areas of relative excellence and identify areas of relative weakness within mineral policy documents. Recommendations can then be made for potential areas of improvement in each mineral policy document.

1.8 METHODOLOGY

This research project utilises a mainly qualitative research methodology. Intensive and extensive literature review and research was done on sustainable development and mineral policy in general and Southern Africa region mineral policy in particular. Scholarly articles, internet research, online university libraries, journals, reports on meetings at various levels and books among others, provided a wealth of knowledge. A framework was then outlined to utilise as a sustainability benchmark for this research report. The framework should clearly specify key sustainability components and classify them under the “environmental, social and economic pillars” for the purpose of analysis of mineral policies. This framework was used as a benchmark for the mineral policies for the countries under study in this research report. This benchmark thus enables the evaluation of each mineral policy regarding its orientation towards sustainable development.

Mineral policy documents of Namibia, Tanzania, Malawi and Zambia were obtained, studied and analytically examined through the “eye” of sustainable development, that is, through the viewpoint of the sustainable development. A brief outline on the mineral resources and the mineral policy history and background was also given for each Southern Africa nation under study.

Individual evaluation of each mineral policy for the nations under study was followed by comparative analysis between the different sustainable developmental pillars of the mineral policy documents. This was done qualitatively as well as quantitatively. Tables were extensively utilized to display information in a clearer manner.

1.9 LIMITATIONS TO THE STUDY

This research project will be limited purely to evaluation of the stand alone mineral policy documents. Focus in Southern Africa is limited to only the four countries that are selected. They all have standalone mineral policy documents. Arguably, using more countries in the study would lead to a wider perspective and a generally more acceptable conclusion.

Once a policy has been developed a programme of action with time frames and responsibility allocation needs to be developed, this is called an implementation plan. A working group composed of interested stakeholders then needs to act as a management structure to oversee, monitor and implement the programme of action at a strategic level (Mtegha, 2005). Key performance indicators need to be identified so that progress can be measured and quantified at the operational level. Sufficient stakeholder capacity, the right institutional structures, allocation of resources by the government, governmental political will are necessary for implementation (Mtegha, 2005). This study does not extend to beyond the mineral policy documents in the four countries under study. The study is limited to an evaluation of the stand alone mineral policy documents, it is assumed that all consequent processes are effective. The policy making process is an extensive area and is also not examined. There are many possible ways of developing a minerals policy (Mtegha, 2005).

In individual nations, additional legislation and regulations may be present in nations for aspects of sustainable development within the minerals sector. These are not taken into consideration, and except in a few instances are not mentioned in this research report. For example, in Southern Africa many countries have National Conservation Strategies and National Environmental Action Plans (Mining, Minerals & Sustainable Development Project Southern Africa, 2002) and every country has legislation, regulations and environmental standards that aim to control developments that have an impact on the environment (Ashton et. al., 2001). However, only the stand alone mineral policy documents are under analysis in this research report. This is a limitation that needs to be kept in mind when analyzing the conclusions drawn by this study. This is because some additional pieces of legislature or regulations might be present in the country that are used in association with the mineral policy document in order to enforce some aspects that maybe only briefly mentioned or altogether omitted in the mineral policy document.

Referral to international mineral policies of developed countries is not generally made except in a few cases, purely as introduction. It would not prove beneficial to this study because of the differences in the challenges faced and the background between the developed and developing nations. This may be considered as a limitation by some because in developmental studies, the norm is to utilise developed countries as an ideal case study.

1.10 CONTENT OF THE RESEARCH REPORT

Chapter One gives the introduction to the research report. It also provides background information about the study. Among the contents are the policy statement, the importance of the research, the research questions, the

research objective as well as the methodology used and the limitations to the study.

Chapter Two is a comprehensive Literature Review focused on sustainable development through mineral policy. It looks at landmark sustainable development initiatives and their implication on mineral policy in general and Southern Africa region mineral policy in particular. “Expected components” in line with international best standards that are necessary to orient a mineral policy document in Southern Africa towards sustainable development are identified through these as well as various relevant literature. The expected components are then classified under the three pillars of sustainable development and expounded upon to outline a sustainability framework to be used as a benchmark in this research report.

Chapter Three focuses on Namibia. The mineral resources of Namibia are briefly introduced. The chapter then focuses upon on the “Minerals Policy of Namibia” (2003). The policy is analysed and relevant policy statements are classified and segmented into the environmental, the social and the economic pillars. Tables are used to represent this clearly. The policy is then discussed through the” eye” of sustainable development, by comparison to the sustainability framework established in Chapter Two. A conclusion ends the chapter.

Chapters Four, Five and Six are similar in structure to Chapter Three. They are on Tanzania, Malawi and Zambia respectively with the study being made on their respective stand alone mineral policy documents.

Chapter Seven makes a comparative analysis of the mineral policy documents for Namibia, Tanzania, Malawi and Zambia. Comparison is based on key components of mineral policy identified in Chapter Two of this Research Report. A conclusion is made and recommendations are given. Some areas of further study are suggested.

Throughout this research report the terms “sustainable development” and “sustainability” are used interchangeably. Also, the terms “mineral policy”, “mining policy”, “mineral resources policy”, “mining and mineral resources policy” are used interchangeably throughout this research report.

CHAPTER TWO: LITERATURE REVIEW

2.1 SUSTAINABLE DEVELOPMENT THROUGH MINERAL POLICY

The national mineral policy must be in line with the national developmental objectives of the nation (Otto, 1997). It is the primary tool through which governments enunciate the role of all players in the minerals sector. It defines the government's objectives in minerals development and states the environmental, social and economic responsibilities of the players in the industry. It is a strategic tool defining the minerals sector and is the basis of legislation in the sector. The national mineral policy, because of its nature and importance must have sustainable development principles embodied in it.

In this new era, mineral policies in Africa need to drive sustainable development. This must be reflected in each policy document under study in order for the policy document to be classified as leading towards sustainable development in the particular nation.

In examining mineral policy through the perspective or 'eye' of sustainable development, there are common areas that each mineral policy is expected to address in the developing countries of southern Africa under study in this report. The four countries in Southern Africa under study in this research report are Namibia, Tanzania, Malawi and Zambia.

It is recognized that there is a different operating environment, history and thus different sustainable development challenges Southern Africa faces to those faced in the developed nations (Hattingh, 2002; Kerry Turner, 1988). Thus, very limited reference is made in this research report about the mineral policies in developed nations such as Canada even though they may be resource rich and have mineral policies that seem ideal and sustainability oriented.

The nations of Southern Africa generally have similar issues to be dealt with in the mineral policy. This similarity results from their political histories, geographical location and geological contexts as well as their social, economic and environmental backgrounds.

However despite the many similarities to be dealt with in mineral policy documents in these Southern Africa nations, there are some succinct variances, in the form of challenges peculiar to each individual nation. These issues peculiar to a nation should also be addressed in the respective mineral policy document for that nation, in addition to other issues that are generally standard or common to the Southern Africa region.

2.2 SUSTAINABLE DEVELOPMENT INITIATIVES: IMPLICATIONS ON MINERAL POLICY IN SOUTHERN AFRICA

Imperatives and landmark events that have influenced mineral policy content in Southern Africa with regard to sustainable development are reviewed in this section. These vary from global, international to regional in nature.

2.2.1 "Harmonisation of Mining Policies, Standards, Legislative and Regulatory Framework in Southern Africa", March 2006

A Protocol of Mining was established by all nations that are members of the Southern Africa Development Community (SADC) in September 1997. It was signed and came into effect on the 8th of February 2000. This Protocol articulates the SADC Member States' vision is for a thriving mining sector that can contribute to economic development, poverty alleviation and an improved quality of life for the people in the sub region (SADC, 2007). The SADC Mining Protocol has six objectives, the primary one being to harmonize

mining policies in the SADC sub region. Harmonisation is a fundamental requirement for regional cooperation and the creation of a much bigger economic space capable of consolidating the region's position in the global economy. To individual member states it also has many benefits, one of them being that it promotes the sharing of capacities for development through a liberal movement of economic factors. Thus capital, labour and technology can move more easily between countries. This is important for the SADC region, since capacities for human and knowledge development, as well as sources of capital are unevenly distributed across the sub region (SADC, 2008).

SADC working with the UNECA developed the "Framework for Harmonisation of Mining Policies, Standards, Legislative and Regulatory Framework in Southern Africa" (United Nations Economic Commission for Africa Southern Africa Office, UNECA-SA, 2004). It was approved in March 2006 by SADC Mining Ministers. The regional framework creates a highly competitive investment environment as it is derived from best international practices in minerals development policies (UNECA-SA, 2004). The Framework is aligned to the Regional Indicative Strategic Development Plan (RISDP) and informed by developments within the New Plan for Africa's Development and the African Mining Partnership .The decision to develop the RISDP was taken in 1999, in Maputo, Mozambique by SADC Heads of State and Government. The RISDP was approved in 2003 and effective implementation commenced after the development of a detailed operationalisation framework in 2005. The purpose of the RISDP is to deepen regional integration in SADC with a view to accelerating poverty eradication and the attainment of other economic and non-economic development goals (SADC, 2003; SADC, 2011). Industrialization is prioritized as a major tool for sustainable growth, development and eradication of poverty by the RISDP. The Industrial Development Policy Framework was thus formulated which, amongst other

areas, focuses on promotion of industrial linkages and efficient utilisation of regional resources through increased value addition on local primary resources (SADC, 2014).

The Framework for Harmonisation of Mining Policies, Standards, Legislative and Regulatory Framework in Southern Africa essentially provides specific policy guidelines in areas of key importance to the SADC mining sector. The Harmonization Framework includes a Regional Mineral Policy template which is intended as a guide to member States for the development of their individual national mining policy so as to ensure uniformity in terms of approach and content. The aim of the Framework is not to create one mining policy for all SADC countries, but rather to create an environment that is underpinned by common principles, and which optimizes the benefits of mineral extraction for all stakeholders (UNECA-SA, 2004).

The Mining Policy Template elements are as detailed below;

1. Business Climate and Mineral Development

(a) Investment regulations and regulatory climate

(b) Taxation

(c) Mineral rights and prospectivity information

(d) Artisanal and small-scale mining

(e) Mineral beneficiation and value addition

(f) Mineral clusters, mineral marketing

(g) Research and Development

2. Participation in Ownership and Management Ownership regulations include Government equity, local and foreign capital equity, and joint-venture regulations

3. People Issues

(a) Health and safety

(b) Human resources development

(c) Gender, housing and living conditions

(d) Migrant labour, labour, industrial relations and employment conditions

(e) Downscaling

4. Environmental Management

5. Regional Cooperation

6. Governance

(a) Regulations and promotion

(b) Management of mineral revenues

(c) National, provincial and municipal governments

(d) Stakeholder consultation

(UNECA- SA, 2009)

An implementation plan was subsequently developed to translate the Framework into an operational programme of activities. This Harmonisation Implementation Plan was adopted by SADC Mining Ministers at their meeting held on 12th November 2009 in Kinshasa, Democratic Republic of Congo (SADC, n.d). The Harmonisation Implementation Plan has eight themes or areas of work grouped into categories of related activities. These themes are

Geological and Mining Information Systems; Value Addition, Innovation, Research and Development; Artisanal and Small-Scale Mining; Safety, Health and Environment; Human Resources and Institutional Capacities; Policy, Regulations and Administration; Socio-Economic Issues and Gender; Investment Promotion (UNECA- SA, 2008).

2.2.2 "The New Partnership for Africa's Development"

The New Partnership for Africa's Development (NEPAD), an African Union (AU) strategic framework for pan-African socio-economic development, is both a vision and a policy framework for Africa in the twenty-first century (African Union, n.d)

The Millennium Africa Recovery Plan (MAP) was led by South African President Thabo Mbeki and unveiled at the World Economic Forum in Davos in January 2001 while the Omega Plan was crafted by the President of Senegal, Abdoulaye Wade, and presented to the Summit of Francophone African leaders in Cameroon in January 2001. The merger of the MAP and the Omega Plan gave rise to the New African Initiative (NAI) that then led to NEPAD in 2001. NEPAD was formally endorsed as an integrated socio-economic development framework for Africa by the 37th Ordinary Session of the Assembly of the then Organisation of African Unity (OAU) held in Lusaka, Zambia, in July 2001 (NEPAD, n.d)

The NEPAD strategic framework document was prepared by the leaders of the five founding member states Algeria, Egypt, Nigeria, Senegal and South Africa in response to a mandate given to them by the Summit of the Organisation of African Unity (OAU). The NEPAD document (2001) appeals to the peoples of Africa that though the continent is impoverished by slavery, corruption and economic mismanagement and is taking off in a difficult

situation, if the continent's enormous natural and human resources are properly harnessed and utilised, it could lead to equitable and sustainable growth, and enhance Africa's rapid integration into the world economy.

NEPAD (2001) states that African leaders have learned from their own experiences that peace, security, democracy, good governance, human rights and sound economic management are conditions for sustainable development.

The long-term objectives of NEPAD are to eradicate poverty in Africa and to place African countries, both individually and collectively, on a path of sustainable growth and development and thus halt the marginalisation of Africa in the globalisation process as well as to promote the role of women in all activities (NEPAD, 2001)

NEPAD was from inception widely promoted globally and is thus recognised as Africa's development plan by governments of the North, international financial institutions and by many international governance institutions like the United Nations. NEPAD is widely seen as the mechanism through which support to Africa's development efforts can be best delivered (NEPAD, n.d.). The NEPAD process has come to be accepted not only by African countries and Regional Economic Communities (RECs) but also by Africa's development partners as the framework mechanism for their development efforts.

Within its first decade some viewed NEPAD as an important advance in African development policy (Hope, 2002) while others questioned whether NEPAD was the answer in Africa's quest for good government and development (Chabal, 2002). The results associated with NEPAD after its adoption and establishment were mixed with a sense that much more could have been done (NEPAD Planning and Coordinating Agency, 2010a). Though the NEPAD Programme had led to the development of major

continental frameworks, across a wide range of sectors it faced growing impatience with the lack of visibility the results of NEPAD, and a general perception that NEPAD flagship programmes and projects were not being delivered fast enough (NEPAD Planning and Coordinating Agency, 2010a). The mobilization of member States and Regional Economic Communities (RECs) to compile programmes and projects that could contribute to Africa's development in general and regional integration in particular was one of the main achievements of the NEPAD Secretariat (NEPAD Planning and Coordinating Agency, 2010b). It created a platform for collaboration between African countries and development partners as well as improved coherence in support received by the continent from development partners.

The African Union at its 14th Summit held in Addis Ababa, Ethiopia in February 2010 strengthened the NEPAD programme by transforming the NEPAD Secretariat into an implementation agency - the NEPAD Planning and Coordinating Agency (NPCA) or the NEPAD Agency (NPCA, 2010). This was in line with the integration of NEPAD into the structures and processes of the AU to enable Africa's development problems to be addressed within a new paradigm . This is reflected in the mandate of the NPCA.

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The mandate of the NPCA is to facilitate and coordinate the implementation of continental and regional priority programmes and projects and to mobilise resources and partners in support of their implementation. It is also mandated to conduct and coordinate research and knowledge management, monitor and evaluate the implementation of programmes and advocate on the AU and NEPAD vision, mission and core values (NPCA, 2010). It is a technical body and a vehicle to drive continental development.

The NPCA activities are guided by themes linked to AU strategic objectives as well as by emerging continental and global issues. The themes include

Agriculture and food security; Climate change and natural resource management; Regional integration and infrastructure; Human development; Economic and corporate governance. The crosscutting issues of Capacity Development and Gender are mainstreamed in NPCA's programmes and projects across the five themes. The NEPAD Agency is key in coordinating the extractive industries activities in Africa through implementation of initiatives like the Africa Mining Vision (NEPAD, n.d.).

Fourteen years after the adoption of NEPAD, the 24th African Union Assembly held in January 2015 and adopted a continental plan for the next fifty years to ensure transformation and sustainable development for future generations (AU, 2013, Agenda 2063, 2015). It was dubbed as Agenda 2063 The Future we want for Africa (AU, 2015). Implementation will be through its technical and development arm, the NPCA (Agenda 2063, 2015).

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2.2.3 The Africa Review Report on Mining

The United Nations Commission on Sustainable Development (CSD) was established by the UN General Assembly in December 1992 to ensure effective follow-up of United Nations Conference on Environment and Development (UNCED) (UN, n.d). The CSD was responsible for reviewing progress in the implementation of Agenda 21 and the Rio Declaration on Environment and Development (UNCED, 1992). The CSD was also responsible for policy guidance at the local, national, regional and international levels to follow up the Plan of Implementation of the World Summit of Sustainable Development, called the Johannesburg Plan of Implementation (JPOI) .

In accordance with the JPOI (United Nations, 2002) and based on the recommendations of the 11th Session of the CSD, the UN Economic and

Social Council decided, at its substantive session of 2003, in order to allow effective consideration of regional and sub regional inputs throughout the implementation cycle and to ensure maximum flexibility to invite the Regional Commissions, in collaboration with the secretariat of CSD, to organise regional implementation meetings in order to contribute to the work of the CSD (UN, n.d.).

Regional implementation meetings ideally took place before the review session of CSD, and served to:

- Contribute to advancing the implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21(UNCED, 1992) and JPOI (United Nations, 2002);
- Focus on the thematic cluster of issues to be addressed in the ongoing implementation cycle;
- Provide input to the Secretary-General's reports and the sessions of CSD. Those inputs may include identification of obstacles and constraints, new challenges and opportunities related to the implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21 and JPOI, and sharing of lessons learned and best practices; and
- Provide for contributions from major groups, taking into account paragraphs 139 (g) and 149 (c) and (d) of JPOI.

The United Nations Economic Commission for Africa (UNECA), prepared the Africa Review Report on Mining (UNECA, 2009). This report was based on “Paragraph 46, JPOI”. It was prepared for the multi-stakeholder Regional Implementation Meeting for the United Nations Commission on Sustainable Development, CSD-18.

It shows the importance of advancing sustainable development in Africa through the mining sector. It proposed recommendations that included policy measures needed to accelerate implementation of the agenda.

The Africa Review Report on Mining (UNECA, 2009) provides an overview of the significance of the mining sector in advancing Africa's sustainable development agenda. It outlines key emerging issues in the mining sector in Africa and progress made towards implementing mining-related commitments in these areas.

The Africa Review Report on Mining was primarily based on paragraph 46 of the JPOI and included the following areas: Effective and transparent regulatory frameworks; Transparency and accountability; Governance and public participation; Environmental, economic, social and health impacts and benefits; Value addition, R&D and technological information; Artisanal and small scale mining; and Building human and institutional capacities. These are all key areas necessary for sustainability in mining.

In 2012 at the Rio+20 Conference, the international community decided to establish a High-level Political Forum on Sustainable Development to subsequently replace the Commission on Sustainable Development. The High-level Political Forum on Sustainable Development held its first meeting on 24 September 2013 (UN, n.d).

2.2.4 The Africa Mining Vision

The United Nations Economic Commission for Africa (UNECA) convened a meeting in August 2008 of the technical taskforce to draft the Africa Mining Vision (AMV) in preparation for the First African Union Conference of Ministers Responsible for Mineral Resources Development. The continent-level Africa Mining Vision sets out an aspiration for mining to catalyse broader sustainable development. The AMV is the only continental initiative on mining, developed and led by African leaders, it is backed by all African Heads of State and the African Union (African Union, 2013). The AMV is drawn from several initiatives and efforts made at sub-regional, continental

and global levels to formulate policy and regulatory frameworks to maximize the development outcomes of mineral resources exploitation (African Union, 2009). These include the Johannesburg Political Declaration and Plan of Implementation [chapter 46 and paragraphs (f and g) of chapter 62 (Sustainable development for Africa)] of the World Summit on Sustainable Development (United Nations, 2002), the Yaoundé Vision on Artisanal and Small-scale Mining, the Africa Mining Partnership's Sustainable Development Charter and Mining Policy Framework, the SADC Framework and Implementation Plan for Harmonisation of Mining Policies, Standards, Legislative and Regulatory Frameworks, the West African Economic and Monetary Union UEMOA's Common Mining Policy and "Code Miniere Communautaire", the Summary Report of the 2007 Big Table1 on "Managing Africa's Natural Resources for Growth and Poverty Reduction", to mention a few (African Union, 2009).

The ultimate purpose of the Africa Mining Vision, adopted by the African Union Assembly of Heads of State and Government is to work towards a well managed minerals sector that can lift Africa out of poverty and catapult it to growth, development and prosperity for all (Africa Mining Vision, n.d.). The AMV is holistic, advocating for thinking outside the "mining box", thus it is not just a question of improving mining regimes by making sure that tax revenues from mining are optimized and that the income is well spent, although that is clearly important rather it's a question of integrating mining much better into development policies at local, national and regional levels (UNECA, n.d). Regional Economic Community mineral policy harmonisation initiatives such as the SADC Mineral Policy Harmonisation Framework and Economic Community of West African States Mineral Development Policy are a means for the sub-regional level domestication of the continental level AMV (African Union, 2013).

The Africa Mining Vision is: “Transparent, equitable and optimal exploitation of mineral resources to underpin broad-based sustainable growth and socio-economic development” (African Union, 2009).The main features of the mineral sector which contribute to achieving the Africa Mining Vision are listed below (African Union, 2009):

• A knowledge-driven African mining sector that catalyses and contributes to the broad-based growth and development of, and is fully integrated into, a single African market through:

— Downstream linkages into mineral beneficiation and manufacturing.

— Upstream linkages into mining capital goods, consumables and services industries.

— Side stream linkages into infrastructure (power, logistics, communications and water) and skills and technology development.

— Mutually beneficial partnerships between the state, the private sector, civil society, local communities and other stakeholders.

— A comprehensive knowledge of its mineral endowment.

• A sustainable and well-governed mining sector that effectively garners and deploys resource rents and that is safe, healthy, gender and ethnically inclusive, environmentally friendly, socially responsible and appreciated by surrounding communities.

• A mining sector that has become a key component of a diversified, vibrant and globally competitive industrializing African economy.

• A mining sector that has helped to establish a competitive African infrastructure platform, through the maximization of its propulsive local and regional economic linkages.

• A mining sector that optimizes and husbands Africa's finite mineral resource endowments and that is diversified, incorporating both high value metals and lower value industrial minerals at both commercial and small-scale levels.

• A mining sector that harnesses the potential of artisanal and small-scale mining to stimulate local/national entrepreneurship, improve livelihoods and advance integrated rural social and economic development.

• A mining sector that is a major player in vibrant and competitive national, continental and international capital and commodity markets.

The AMV is founded on the following fundamental pillars:

• Optimizing knowledge and benefits of finite mineral resources at all levels of mining and for all minerals;

• Harnessing the potential of small scale mining to improve rural livelihoods and integration into the rural and national economy;

• Fostering sustainable development principles based on environmentally and socially responsible mining, which is safe and includes communities and all other stakeholders;

• Building human and institutional capacities towards a knowledge economy that supports innovation, research and development;

• Developing a diversified and globally competitive African mineral industry which contributes to broad economic and social growth through the creation of economic linkages;

• Fostering a transparent and accountable mineral sector in which resource rents are optimized and utilized to promote broad economic and social development; and

• Promoting good governance of the mineral sector in which communities and citizens participate in mineral assets and in which there is equity in the distribution of benefits.

As a follow-up to the AMV, the African Union (AU) and the United Nations Economic Commission for Africa (UNECA) issued a report in 2011 entitled, The International Study Group (ISG) Report on Africa's Mineral Regimes: Minerals and Africa's Development (UNECA, 2011), which is a reference guide to policy makers on how the AMV can be implemented (CCIC Africa-Canada Forum & Canadian Network on Corporate Accountability, 2013). The African Caribbean Pacific (ACP) Secretariat also formulated a Draft Framework of Action for the Development of the Mineral Resources Sector in ACP Countries which was released in June 2011. The ACP Framework takes into account the principles of the AMV. The ISG framework report, the AMV document itself, the Draft ACP Framework, as well as several other sources have been used to compile the Action Plan (The African Union Commission, African Development Bank, & United Nations Economic Commission for Africa, 2011). In December 2011 at the second AU Conference of Ministers Responsible for Mineral Responsible Development, the respective Ministers agreed to an Action Plan for implementing the Vision (CCIC Africa-Canada Forum & Canadian Network on Corporate Accountability, 2013). That Conference also called for the establishment of the African Minerals Development Centre (AMDC) which was " to provide strategic technical support capacity to AU/NEPAD, Regional Economic Communities (RECs) and member States for the implementation of the Action Plan and hence the AMV" (UNECA, n.d).

The Action Plan (The African Union Commission, African Development Bank, & United Nations Economic Commission for Africa, 2011) contains a summary of the AMV document setting out the key areas of the Vision. The pillars of the AMV were used to develop the Action plan by formulating nine

programme clusters, each with a long term goal, desirable outcomes, programme, activities and preliminary indicators for tracking the outcomes. The nine programme clusters of activities are constructed around the key pillars of the AMV and are: mineral rents and management; geological and mining formation systems; building human and institutional capacities; artisanal and small scale mining; mineral sector governance; research and development; environmental and social issues; and linkages and diversification. The Action Plan also contains a resource mobilisation plan as well as an institutional framework for implementing the activities. The lack of a Monitoring and Evaluation Plan for the AMV was is a key weakness in moving the process forward.

The African Minerals Development Centre (AMDC) was formally launched in December 2013 and provides strategic operational support for the African Mining Vision and its Action Plan. The AMDC was implemented as a joint initiative of the African Union Commission (AUC), the African Development Bank (AfDB) and the United Nations Economic Council for Africa (UNECA). The Vision of the AMDC is to become the facilitator of choice to enable AU member States to achieve the Africa Mining Vision, its mission is to work with member States and their national and regional partners, including the AUC, the NEPAD Planning and Coordinating Agency (NPCA), and Regional Economic Communities (RECs) to enable mineral resources to play a greater transformative role in the development of the continent through increased economic and social linkages, and in this manner, help address its intractable poverty and limited development (African Union Commission & United Nations Economic Commission for Africa, 2012; UNECA, n.d.).

The Business Plan for the AMDC was been built around seven Results Areas derived from the nine programme clusters of the Action Plan (African Union Commission & United Nations Economic Commission for Africa, 2012). The result areas are Policy and Licensing, Geological and Mining information

systems, Governance and Participation, Artisanal and Small-scale mining (ASM), Linkages, Investment and Diversification, Building Human and Institutional Capacities, Communication and Advocacy.

2.2.5 "Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development, a Mining Policy Framework, 2013".

The "Global Dialogue on Mining, Metals and Sustainable Development" was formed as a result of the World Summit on Sustainable Development (WSSD) in Johannesburg in 2002 by a number of countries with an interest in mining that decided to take action to demonstrate that the mining sector can be a significant driver of development (Global Dialogue on Mining/Metals and Sustainable Development, 2013). At that meeting these countries worked together and drafted paragraph 46 of the Johannesburg Plan of Implementation (JPOI). This paragraph recognizes the positive contribution of mining to sustainable development but, more importantly, also identifies priorities that need to be addressed to ensure and enhance the potential contribution of mining to sustainable development. To mobilize and coordinate efforts to put the JPOI into more widespread effect, a partnership was formed amongst interested countries. Their efforts led to this partnership of the WSSD being inaugurated in 2005 as the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) (Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development, 2013). The IGF has now become the leading global intergovernmental policy forum on mining and sustainable development with membership is open to all member countries of the United Nations that have an interest in effectively managing their mining/metal sector for development benefits. It is a member-led, voluntary partnership. (Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development, 2013). The

meetings of the IGF are hosted by the United Nations Conference on Trade and Development (UNCTAD). It serves as a forum for dialogue between developing-country governments, donor agencies, international organizations, civil society and the private sector, fostering coordinated action in strengthening good governance in the mineral sector. The IGF provides a unique platform for members and observers to actively engage with one another, sharing their expertise, knowledge and leading practices on the challenges and opportunities facing the sector (Global Dialogue on Mining/Metals and Sustainable Development, 2013). The objectives of the Forum are to improve, enhance, and promote the contribution of the mining, minerals and metals sector to sustainable development and poverty reduction. Through sharing experiences and developments across the sector, the Forum helps enhance capacity for the improved management of member countries' mineral wealth.

The IGF have currently a Mining Policy Framework. It was formulated for submission for consideration by CSD-19 delegates and other interested parties. In 2010 it was approved. The latest version is the Revised October 2013. It is a compendium of best practices to guide governments as they address the full range of issues related to mining (Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development, 2013). Forum members agree that good governance of both public and private institutions is a necessary condition for the contribution of the sector to sustainability. The key aspect of good governance for mining relates to the proper management of the mining activity itself. Sustainability however needs to go beyond the mining activity. Like any other business, a mine will close at some time. Sustainability is the outcome of transforming the assets generated in the course of mining into other forms of assets that persist beyond the mine closure and are tools for development beyond the mining sector. This process also requires good governance in the management of all the revenue streams

resulting from mining investments for example royalties, license fees, direct and indirect tax revenues. Categorised under the “three pillars of sustainable development”, a few Individual policy elements discussed in IGF Mining Policy Framework (2013) include:

- Environment: Water, Waste, Bio diversity, Mine Closure
- Social: Education, Health and Safety, Employment Opportunities, Community Issues
- Economic: Employment and Business Development Opportunities, Equitable Distribution of Benefits, Taxes, Royalties, Accountability, Transparency

As at 2014 the IGF had 49 members (Global Dialogue on Mining/Metals and Sustainable Development, 2014). Members in the Southern Africa Region are Botswana, Madagascar, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania and Zambia. The Southern African countries with their mineral policy under case study in this research report Namibia, Tanzania, Zambia and Malawi are all part of the IGF.

2.2.6 The Extractive Industries Transparency Initiative

Mineral resource abundance can transform economies, reduce poverty and raise the standard of living of the entire population (Runge, 2011). In Sub-Saharan Africa, as a result of mismanagement, lack of transparency, corruption etc. this is at times not the case and the mineral wealth may even lead to crisis and unrest in the nation, thus the term ‘resource curse’ or ‘paradox of plenty’ (Karl, 1997; Basedau & Lay, 2005; Runge, 2011). This idea of a “resource curse’ was introduced in 1993 by Richard Auty, it refers to a condition whereby economic growth and social development is hindered by natural resources wealth. From there onwards academic literature around this

‘resource curse’ by such acolytes as Paul Collier were insightful on the potential benefits of natural resource wealth being not realised in some nations but rather leading to increased poverty, conflict and corruption, going beyond the economic phenomenon of 'Dutch Disease' by which natural resource wealth made other export sectors uncompetitive (EITI, 2015). The academic literature was clear that transparency and dialogue had to be initialised to start resolving this situation (EITI, 2015).

Increased transparency in the mineral resources sector is vital to the achievement of accountability, good governance and sustainable economic development (Runge & Shikwati, 2011). The United Kingdom government developed the Extractive Industries Transparency Initiative (EITI) which increases transparency over revenue payments to governments by the extractive industry (United Nations, Economic Commission for Africa, 2009).

The EITI was outlined in a speech intended for the World Summit on Sustainable Development in Johannesburg in September 2002 by the then UK Prime Minister, Tony Blair (EITI, 2015; African Union, 2009). The EITI is a global Standard to promote open and accountable management of natural resources which seeks to strengthen government and company systems, inform public debate, and enhance trust. In each implementing country it is supported by a coalition of governments, companies and civil society working together (EITI, 2015). The EITI displays governments commitment to transparency in the minerals sector thus leads to an improved investment climate in the implementing countries. The EITI also leads to strengthened accountability and good governance, as well as promotes greater economic and political stability thus curbing conflict based around the extractive industry (EITI, 2015). Investments in the extractive industry to generate returns are capital intensive and dependent on long-term stability in the host nation.

The transparency of payments made to a government can also help to demonstrate the contribution that investors make to a country. The EITI serves to make the government more accountable through the information the government has to release to the public about the revenue that the government has received from the extractive industry (EITI, 2015).

Currently the EITI has 48 implementing countries, of these 31 are compliant with the EITI requirements, that is they are confirmed to have met all EITI requirements. In the Southern African region, Mozambique, Tanzania and Zambia are compliant. Madagascar is implementing but not yet compliant.

The International Monetary Fund (IMF) and the World Bank (WB) have recognised the importance of the EITI. According to Runge (2011) the compulsory EITI requirement by the WB from projects that need assistance and from relevant governments puts the voluntary nature of the EITI into question. Also, the highly technical and technocratic nature of the EITI may lead to the unnecessary increase in administrative functions which are often host to corruption in Africa.

2.2.7 The Kimberley Process

The Kimberley Process (KP) started in May 2000 when Southern African diamond-producing states met in Kimberley, South Africa. The KP is an initiative by joint governments, industry and civil society to stem the flow of ‘conflict diamonds’ and practically prevent these illicit diamonds from entering the legitimate diamond trade (Kimberley Process, 2015; African Union, 2009). Conflict diamonds are rough diamonds used by rebel movements to finance wars against legitimate governments. Conflict diamonds have contributed to fuelling devastating conflicts in a number of countries in Africa like the civil

wars in Liberia, Sierra Leone and Angola in the 1990's and 2000's (Schnell & Großmann, 2011).

In December 2000, the United Nations General Assembly adopted a landmark resolution supporting the creation of an international certification scheme for rough diamonds. By November 2002, negotiations between governments, the international diamond industry and civil society organisations resulted in the creation of the Kimberley Process Certification Scheme (KPCS). The KPCS document sets out the requirements for controlling rough diamond production and trade. The KPCS entered into force in 2003, when participating countries started to implement its rules (Kimberley Process, 2015). The Kimberley Process is currently composed of 43 participants, comprising states and regional economic organizations, including the European Union (Kimberley Process, 2015). Amongst the Southern African region states participants are Botswana, Lesotho, Namibia, South Africa, Swaziland, Tanzania and Zimbabwe. Mozambique and Zambia are currently Candidates, that is, state applicants that have expressed their commitment to the Kimberley Process but have yet to meet the minimum requirements of the KPCS.

Critics of the KP cite its weak control mechanisms (Medico International, 2007), the governments' lacking willingness to effectively prevent smuggling in diamonds, human rights abuses as well as the lack of sanctioning mechanisms for countries like Zimbabwe (PAC, 2010).

2.2.8 Yaounde Vision on Artisanal and Small-scale Mining

A joint Economic Commission for Africa (ECA) and United Nations Department of Economic and Social Affairs (UNDESA) Seminar on "Artisanal and Small- scale Mining in Africa: Identifying Best Practices and Building Sustainable Livelihoods of Communities", held in Yaounde, Cameroon in

November 2002 and adopted the Yaounde Vision on Artisanal and Small-scale Mining (African Union, 2009; Economic Commission for Africa, 2002))**.**

The Yaounde Vision Statement reads: “Contribute to sustainably reduce poverty and improve livelihoods in African artisanal and small-scale communities by the year 2015 in line with the Millennium Development Goals”. The key strategies to realize the vision include formalizing and reflecting artisanal and small-scale mining (ASM) issues in national legislation and codes and integrating ASM into rural community development programmes and Poverty Reduction Strategies.

2.3 NATIONAL MINERAL POLICY SUSTAINABILITY FRAMEWORK: EXPECTED COMPONENTS OF THE ENVIRONMENTAL PILLAR, THE SOCIAL PILLAR AND THE ECONOMIC PILLAR OF MINERAL POLICIES IN SOUTHERN AFRICA

Sustainable development is achieved, through sustainably managed mineral resources exploitation and by the resultant socio-economic benefits to the nation as a whole projected to future generations. In this process, detrimental environmental effects are carefully prevented or minimized.

The various global meetings on sustainable development and the many mining sector sustainable development initiatives detailed above denote agreed international best practice impacting mineral policy in Southern Africa. They effectively guide the mineral resource sector towards the achievement of sustainable development. In addition to an in-depth review of these, extensive and intensive literature review around the subject matter resulted in a sustainability framework for mineral policy in the Southern Africa region being drawn out for the purpose of this research report.

The sustainability framework is composed of sustainability components that, if included in a mineral policy document effectively determine a national mineral policy documents commitment towards internationally agreed best practice in the area of attaining sustainable development through and in the mining sector or basically, the “orientation of a mineral policy towards sustainable development”. This sustainability framework is an effective benchmark for national mineral policy in the Southern Africa region as components are drawn out from international best practice.

The sustainability framework is outlined below. It consists of policy components that are environmental, social and economic instruments expected to be included within each stand alone national mineral policy document in Southern Africa. The expected components are grouped under the three pillars of sustainable development for the purpose of organized sustainability analysis. These instruments of mineral policy have been selected on the basis of being common, generally applicable and frequent requirements for sustainable development.

As noted by Mtegha et al. (2011) in Sub-Saharan Africa mineral resource endowment is similar, but mineral development challenges for example the level of geological knowledge and infrastructure vary in extent. Each country possesses unique circumstances of history, politics, culture etc. This results in some differences between mineral policy documents. These differences when pertaining to sustainability components are noted under the individual mineral policy analysis for each nation in this research report.

2.3.1 The Environmental Pillar of Mineral Policy: Southern Africa

Mining activities are in essence, and at all stages, a danger to the environmental surrounds (Down and Stocks, 1977). In the Southern Africa

region awareness of the negative impacts of mining increased since the World Summit on Sustainable Development in 2002 held in South Africa (Shikwati, 2011). The environment is impacted starting from the very initial stages of mining operations like prospecting and exploration, during the operational stage of the mine till after mine closure.

There is a diverse range of negative impacts on the environment as well as challenges specific to each site of mining activity. Generally known negative impacts of mining activities include deforestation, loss of biodiversity through disturbance of the habitat and the local ecosystem, contamination of surface and groundwater, land degradation and also varied types of pollution (Boocock, 2002).

The national mineral policy must have a high regard for environmental management and protection in order for it to be "oriented toward sustainable development". This issue must be a guiding theme in mineral resource policy. It must be specifically included in the policy document irrespective of other existing (or previously documented) environmental protection policies or legislative instruments.

Four key areas of environmental protection and management are identified and outlined below. These must form part of the national mineral policy documents under study in this research work, in order for the policy document to be classified as possessing the "environmental pillar" of sustainable development.

1. Environmental Impact Assessment (EIA)

Negative impacts on the environment must be predicted and evaluated so they can be eliminated, minimized or remedied before approval of mining

activities. Monitoring, addressing risks and impacts to the environment must be done throughout the lifespan of the mining activities.

EIA's should be mandatory for all mining activities prior to approval or pending any significant adjustments at any stage of the mining operation including exploration. This is a sustainable development guiding principle. It is Principle 17 in the Rio Declaration on Environment and Development, (UNCED, 1992).

2. Mine Closure Plans

When the mineral resource at a working mine is exhausted or the operation is no longer profitable or viable, mine closure occurs. It is the process of shutting down mining operations on a permanent or a temporary basis. Mine Closure consists of several stages that include shut down, decommissioning, rehabilitation, restoration, reclamation and remediation as well as post closure monitoring.

Mining is a temporary activity even if it spans over several decades. Planning for closure should start before the commencement of mining and continue throughout the entire mining operation. The ISG Mining Policy Framework (2013) states that in order to meet the conditions of sustainable development a mine should plan for mine closure throughout its life span. These plans should be of a high international standard and satisfy requirements put in place by the government.

3. Waste Management

Waste structures need to be well planned for, examples are tailing storage facilities and dumps (IGF, 2013). Waste structures must be designed before

commencement of mining activities according to internationally recognized standards. To ensure operation that minimises environmental impacts

Monitoring and assessment of waste structures should be done continually throughout the entire mine cycle and at mine closure. It should also be comprehensively done prior to any further development or changes in design initiated during the mine cycle.

4. Environmental Rehabilitation

Environmental rehabilitation is when degraded or exploited land is returned to close to its original state with a self sustaining ecosystem. It requires great expertise. After mine closure the site can either be restored to close to what it was before disturbance or repurposed for another use. For mining activities, finances must be provided by the mining company for environmental rehabilitation.

This issue of rehabilitation was specifically mentioned in the “Johannesburg Plan of Implementation”, Paragraph 46 (c) of Chapter IV (United Nations, 2002).

2.3.2 The Social Pillar of Mineral Policy: Southern Africa

Mining operations have a great social impact, which can be largely negative if not managed properly. The first generally known immediate impact is on the local community in the vicinity of the mining activities. This is followed by a ripple impact onto the national society and lastly impacting onto future generations.

In Southern Africa, rural community livelihood, value and identity are based largely on land. Displacement, forced eviction and resettlement are commonly

known impacts of mining operations. As livelihoods are disrupted, this can become a source of tension with the local community. It can potentially also result in the exposure of the displaced community to increased poverty levels.

Mining activities give rise to a plethora of other well known negative effects, for example the disruption of local social values and traditional norms, economic dependency on the mine which leaves the community vulnerable. The influx of migrant workers in search of economic gain into the local environ is also accompanied by a host of social ills that include migration and other land issues.

1. “Social Impact Assessment”

This should be done is prior to the granting of mining licenses. The use of impact assessment tools was re emphasized by the UNCED (1992).

2. Gender

Empowerment of women is a significant issue in Southern Africa, historically it is general knowledge that women were marginalized, as a cultural norm in this region. The roles of men and women in the mining sector in this region are traditional with women employed largely in what is seen as women’s work for example, catering, human resources and clerical (Ranchod, 2001).This issue crosscuts throughout all sectors on a global level.

Specific mention of and affirmative action measures must be instituted within a sustainable mining policy framework addressing this issue.

Agenda 21 (United Nations Conference on Environment and Development, 1992) speaks of the protection of vulnerable groups as a pre requisite for sustainable development. This can be implemented through policy as one of

the initial steps. The third Millenium Development Goal (United Nations, 2000) is to ‘promote gender equality and empower women”. The United Nations Convention on the Elimination of All Forms of Discrimination Against Women commits governments to ensuring equal rights for women in both policy and practice, it was signed by all governments in the Southern Africa Region except Swaziland (Ranchod, 2001).

3. Occupational Health and Safety

Corporate responsibility must be ensured in Occupational Health and Safety (IGF, 2013; UNECA- SA, 2009). It can be ensured by the Government through legal requirements, inspection and monitoring. Education, training, equipment etc must also be provided by business entities to create an accident free safe working environment (IGF, 2013).

4. HIV and AIDS

The southern African region is leading globally in the prevalence of HIV/ AIDS within the populace (Elias et. al, 2001) Sub- Saharan Africa has only 10% of the world’s population yet accounts for 83% of all AIDA- related deaths since the epidemic began, 25% of these deaths being of children (Elias et. al, 2001).

In other parts of the world, migration has been identified as a significant risk factor in the transmission of HIV (Decosas and Adrien, 1997). Miners in Southern Africa are normally migrant workers within a disorganized family background and societal surroundings, they are at high risk of contracting and spreading HIV and other diseases because of their background and surrounding society (Jochelson, Mothibeli & Leger 1991; Campbell and

Williams, 1999; Desmond et al., 2005). Issues surrounding the HIV/AIDS pandemic must be addressed by the mineral policy of any mineral regime in southern Africa. Awareness and education campaigns by both the mining companies and the government are also necessary (Shikwati, 2011).

5. Local Community

The local community residing in the immediate vicinity of the mine bears a significant social as well as environmental cost (Dupuy, 2014). They are also in the weakest position with limited power, limited economic and limited political influence, there are many instances in mining project where they have been marginalized (Mtegha, 2005). Thus to offset this, some measures have to be put in place for them as seen in many international voluntary initiatives for example, the International Council on Mining and Metals Sustainable Development Framework and Community Development Toolkit and guiding principles (2001); the Kimberley Process Certification Scheme (2002); the Extractives Industry Transparency Initiative (EITI; 2002) and the Global Reporting Initiative Mining Sector Supplement (2011). All have some type of requirement for their members to mitigate the destructive social and environmental impact of mining on local communities and to help ensure that mining-affected local communities positively benefit from the extraction of finite natural resources (Dupuy, 2014; Jenkins, 2004; Kemp, 2009, 2010; Kapelus, 2002; Labonne, 1999). The 2002 World Summit on Sustainable Development in Johannesburg also recognized the contribution of mining to sustainable development and stressed the role of local communities in mining development. Recently in the mining sector various conflicts for example protests and violence, media campaigns, project shutdowns etc. have taken place as a result of the local community demands not being met (Davis and Franks, 2011).

The issue of the local community is quite extensive and includes:

- Participatory roles e.g. through community relations programme
- Benefit sharing with locals in various ways e.g. building recreational facilities in the area
- Small business opportunities e.g. cleaning services, preferential sourcing from locals community businesses
- The populace that stay near the mine should be preferentially hired for mine jobs especially those jobs that require no special skills or training.
- In some instances, Community Development Agreements, CDA's (African Union, 2009); These are when firms are mandated to enter into formal , legally binding agreements with local communities as in Sierra Leone, Nigeria, Guinea, Mali, South Sudan, Afghanistan and Yemen (Dupuy, 2014). In Ghana, Australia and some Canadian provinces they are also used though not legally required (Dupuy, 2014). Mining Companies in the Lake Victoria Goldfields in Tanzania have entered into these types of community development agreements with local authorities (African Union, 2009). A CDA is defined as ''any negotiated agreement between industry (mining sector) and communities agreeing how these communities will access development initiatives'' (Environmental Resources Management, 2010, p. 2). It is a formal, written agreement designed to ''impose obligations on each participating entity and affect the distribution of costs and the allocation of benefits from a project'' (O' Faircheallaigh, 2012, p. 3), with the goal of reducing conflict surrounding mineral extraction. They also obligate mining firms to protect the environment and health of the local community, to develop social projects in those communities and also to establish local development funds for the local affected communities. However, while they are a higher transparent regulatory standard in comparison to mitigation measures

like environmental laws and compensation, they may in some cases deter foreign direct investment, thus negatively impacting the mining sector in resource rich developing nations (Dupuy, 2014).

6. Corporate Social Responsibility (CSR)

This should be encouraged through the mineral policy. The social license to operate is increasingly a requirement to create a conducive environment for business (Prno, 2013; Thomson and Boutilier, 2011, Prno and Scott Slocombe, 2012). It is in the interest of the government to regulate and channel the mineral resources of the country for the benefit of not only the investors but also the citizens. Also companies must take the responsibility of making sure that the environment is safeguarded during the exploitation of these mineral resources seriously. Sustainable development is the responsibility of the government whether it uses legislative instruments or other forms of inducement. Guidance can be given to mining entities on the type of CSR programmes to engage in. They should ideally be done with participatory input of the local community (Hilson & Murck, 2000; Pring and Noe, 2002; International Council on Mining and Metals (ICMM), 2012; International Institute on Environment and Development (IIED, 2002; Prno, 2013).

The local communities around the mine need to have basic services like water, electricity and sanitation. Schools, clinics, hospitals and dispensaries, and their roads may be in poor condition or non-existent around the mine. Developing a mine presents an opportunity to improve conditions and provide these facilities for the communities. The Africa Mining Vision (2009) states that, “It is necessary for mining companies to embrace the notion of CSR in order to contribute to wider development objectives. As CSR approaches could be voluntary or legislated, it is important to entrench CSR in any policy

framework in a manner that is clear about the responsibilities of mining companies and government".

The mines however must not be unjustly expected to shoulder the responsibility of the Government through being required to provide essential government services to the local community (UNECA, 2011; ISG Bulletin 6, n.d). When businesses engage in CSR, particularly with their immediate communities, this safeguards their own interest but the responsibility of the welfare of the communities remains the primary role of the government, for instance local government offices must be responsible for services like household waste removal and street lighting etc. When the government maintains its responsibility, this creates long term sustainability, for example a CSR-built clinic or school is more likely to last, if it fits in with state health or education plans so that health staff or teachers are not lost when the mine closes or ends its support.

7. Training and Skills Development

Skills development and training for citizens must be a priority of the mining entities. The mining entities can be encouraged by the Government in this area through tax incentives etc. Over time this eliminates the need for the import of skills through expatriate labour.

A highly skilled educated workforce is critically important for innovation and the competitive edge in the mining industry. It is a socio- economic benefit for the entire nation.

8. Resettlement and Compensation

Social issues such as involuntary resettlement ideally should be handled sensitively, respecting human rights (Sonnenberg and Münster, 2001; World Bank, 2001; IFC, 2012). Governments, through various initiatives have a framework on how mining entities can be mandated to act in this area. These include the United Nations Global Compact (The Global Compact, 2014), the Equator Principles (Equator Principles, 2006; Equator Principles, 2013) and the Global Reporting Initiative, GRI (GRI 2006; GRI 2010; GRI 2011; GRI 2013; Skouloudi, Evangelinos & Kourmousis, 2009).

2.3.3 The Economic Pillar of Mineral Policy: Southern Africa

The factors considered in this research project under the economic pillar of sustainable development result in economic benefits from the mineral resources sector. These benefits have wide ranging impact on the local populace and the national economic development at large.

Financial benefit optimization by the government and the accompanying issues like taxation, royalties, re-investments of capital generated, fiscal instruments are not examined in this research, they require a full comprehensive separate study. However these issues must be guiding themes in a mineral policy in order to orient it towards the right fiscal sustainable development direction.

1. Value addition, Research and Development

Most minerals from Africa are exported as raw ore and concentrates, any significant value addition is rare (UNECA, 2009). Value addition is advantageous in that it leads to the decreased necessity for imports, increasing the generated income from these exports, a rise in the country's

economic activity, increasing the employment base as well as increasing the skill level in the minerals sector. Emphasis should be placed on beneficiation and creating value addition through well articulated instruments or incentives in the mineral policy framework.

Research and development is critical to ensuring greater benefits and competitiveness on a global scale in the mining sector. It should be driven by state incentives and funding. Currently in Southern Africa, only South Africa has internationally competitive research and development facilities for example its national mineral research organization, Mintek, is one of the world's leading research and development institutions specializing in mineral processing, extractive metallurgy and other mineral-related services (UNECA, 2009; UNECA, 2011).

The nations in Southern Africa have few universities and research organizations capable of conducting high level research in mineral development matters (United Nations Economic Commission for Africa Southern Africa Office, 2009). This is one of the reasons why research and development is not given much emphasis and lags behind. Research and development is the driving force behind value addition.

2. Linkages

In mineral resource rich nations, for example Canada and also partly Australia, their economies evolved from a basis of primary extraction of natural resources (UNECA, ISG Report 2011). However, their mining sectors have evolved and developed linkages at all levels intensively and extensively thus leading to increased revenue generated and other economic opportunities, they benefit significantly from adding maximum value to their products (UNECA, ISG Report 2011). Linkages are key to the sustained diversified economic growth of the economy. The Africa Mining Vision (2009)

states that, “For the mining sector to improve its contribution to broad based development, it must be better integrated into the national and regional economic fabric through linkages. To harness linkage opportunities, challenges such as those relating to deficiencies in human capital formation, particularly in knowledge intensive areas, as well as infrastructure inadequacies must be addressed”. The Africa Mining Vision (2009) calls for downstream linkages into mineral beneficiation and manufacturing, upstream linkages into mining capital goods, consumables and the service industry as well as side stream linkages into infrastructure, human resources development and Research and technology development.

Linkages are in the form of upstream/backward linkages to the mine in the form of input supply. They are relations with suppliers of parts, components, materials and services. Backward linkages are vital to ensure the mineral resources sector results in wider industrialization. Government can ensure backward linkages by making local content commitments advantageous for mining entities when they apply for mineral concessions; also by incentives encouraging mining companies to acquire goods and services from indigenous suppliers; by investing in research and development, human resources development to build backward linkages skills and technology capacity. They have a multiplier effect because as each supplier expands so does their dependence on other suppliers who supply them with inputs and these suppliers also have suppliers and so forth. Linkages directly result in the upliftment of local, regional and national suppliers as have a ready and consistent market in the form of the mining operation.

Forward/downstream linkages are from the mine to the recipients of the mines output. They refer to the relations with buyers who may be other firms or consumers using the intermediate products in their own processes. This linkage depends on the size of the host market. For downstream linkages a regional market would thus prove advantageous as it would absorb the

expanded output. Downstream linkages in Africa are often weak as minerals are often exported in raw or partly processed form (UNECA, ISG Report 2011). Increased beneficiation would lead amongst other things to manufacturing industry and job sector creation as well as higher foreign exchange earnings for the nation from the mineral resources products such as iron/ steel, polymers etc for manufacturing; nitrogen and phosphate fertilizers for agriculture; cement, copper for infrastructure; fossil fuels for power.

Side stream linkages are to entities providing the mining venture with technological, human resources or infrastructural inputs such as financial services, power, logistics, communications, skills and technology development. Side linkages are crucial, they underpin broad economic growth as they fuel the development of other sectors of the economy that are unrelated to mining.

Horizontal Linkages are when there is diffusion of technology or management practices between competitors either through demonstration or by competition. For example, in developing countries, when local companies see the superior technology used by their multinational competitors and acquire it. Diffusion of technology may also happen when through employees of multinational companies, when start their own firms that utilize the technology or when they are employed by local firms and effect what they learnt. Foreign Direct Investment is thus a key channel for horizontal linkages. This type of linkage is advantageous as it leads to fast adaptation by local businesses in developing countries to new technologies, this would ordinarily take long as developing countries are not well integrated into the world economy and the fast pace of technological innovation. However the disadvantage is that if local firms do not have the capacity to compete with these multinationals, they will be put out of business (Diyatt, Ngowi and Mutambala, 2012).

Spatial Linkages are when high rent minerals finance major infrastructure like transport, power and water which could then be made accessible to and underpin the development of other sectors of the economy like agriculture. Spatial Linkages are also when the minerals sector develops the local community for example, through CSR.

Knowledge linkages occur through human resources development as well as through Research and Development.

Fiscal linkages are when tax is captured from the exploitation of the mineral resource and invested. When it is invested into infrastructural developments, human development and mining sector development it ensures a future national competitive advantage. It also ensures the sustainability of the mining sector.

3. Artisanal and Small Scale Mining (ASM).

ASM activities remain rampant throughout African nations and provide employment for a significant percentage of the populace. These are either directly employed by the activities or through its diverse service industry. (UNECA, ISG Study Group Report, 2011). Table 2.1 shows estimates of the number of ASM miners in a few southern African countries

Table 2.1: Estimates of ASM miners in some Southern African countries

Country	**Estimated Number of ASM miners**
Zambia	30,000
Malawi	40,000
Mozambique	60,000

Tanzania	550,000

Source: Buxton et. al. (2013)

Poverty drives ASM. It is a livelihood that a diversity of vulnerable and marginalized people engage in. This sector plays an important part in poverty alleviation (Noetstaller et al., 2004; Fisher et al., 2008). This is because it is labour intensive, employing ten times more people than the formal mining sector (Buxton et. al., 2013). The capital start up entry barrier is very low and only a low level of skill is required. Income generated through ASM activities is crucial for the workers, family and communities (Hentschel et al., 2002). It furthers economic development as it propagates the considerable local economic development around ASM sites. The Africa Mining Vision (2009) recognises ASM in Africa as poverty driven and important for poverty alleviation.

Challenges faced by ASM miners include limited recognition, no start- up capital funding, they are legally not allowed to be on many areas that they desire to exploit as well as difficulty in accessing legal markets. The miners also subject themselves and families to harsh conditions and adverse health risks for a meager income (Noetstaller et. al., 2004).

The ASM miners not only face challenges but they also give rise to a lot of problems. The environment is subjected to negative impacts by unregulated ASM. Globally, ASM for gold is ranked as the number two worst mercury pollutant (Siegel and Veiga, 2010). Another challenge is the exploitation of children and the exploitation of women.

The ASM livelihood is often viewed as undesirable by governments because their mining activities are often illegal and unregistered as well as dangerous, They do not follow due process, are corrupt and have no legal rights to the

minerals they extract. Thus ASM is often not engaged with or challenges addressed. Focus is on the negative impact of ASM however, it would be more beneficial to assist them to overcome their hindrances in order to ensure they contribute towards sustainable development in the nation (IGF, 2013).

It is necessary for the government to provide a good framework as well as simple and clear laws and regulations regarding ASM (Spiegel, 2010). Incentives should also be given to encourage compliance to the regulatory framework in this sector. Social, technical and economic support must be given by government also provision for the training and education of the miners and the communities (IGF, 2013; African Union, 2009; The Yaounde Vision, Economic Commission for Africa, 2002)

4. Black Empowerment/Affirmative Action

Due to the political history of Southern Africa, black economic empowerment of nationals is a crucial issue to be included within the mining policy (United Nations Economic Commission for Africa Southern Africa Office, 2008). This can be achieved in various ways. Some of the ways are: by facilitating black citizen ownership of mining entities, requirements that mining entities have senior managerial posts for local black citizens, preferential sourcing of goods and services from companies of majority owned black citizens, joint ventures, mentoring etc.

5. Regional Integration

For most nations of the Southern African Development Community Region mining generates significant and much needed foreign currency earnings.

According to the 2003 SADC Review, formal mining in the region accounts for about 60% of foreign exchange earnings, 10% of GDP and 5% of formal employment (United Nations Economic Commission for Africa Southern Africa Office, 2004).

As an effort to achieve regional intergration at sectoral level currently the SADC is working towards harmonisation of mining policies in the region through a carefully compiled minerals policy that is able to accommodate the differences between states and able to be applied at a regional level (United Nations Economic Commission for Africa Southern Africa Office, 2004; United Nations Economic Commission for Africa Southern Africa Office, 2008).This will positively reduce competition within the region because of the larger market environment, higher capacities, larger technical and managerial skills, increased ability to respond to environmental and sustainable development challenges (Mtegha, Cawood and Minnitt, 2006).

2.3.4 Other Issues

There are other issues and guiding themes that should be included in a Southern Africa stand alone mineral policy document to ensure that it is oriented towards sustainable development. Governments must be transparent and accountable in their contracts and dealings with the mining entities. This is part of good governance. Governments can also join initiatives and organizations for example the African Union's Africa Peer Review Mechanism**,** The Communities and Small-scale Mining (CASM). A multi- stakeholder participatory approach is also encouraged in mineral policy formulation.

CHAPTER THREE: NAMIBIA

3.1 MINERAL RESOURCES

Namibia is abundant with largely untapped mineral resource potential (International Business Publications, 2009). It has world class deposits of diamonds and uranium being ranked high among the world's largest producers of uranium and gem-quality diamonds. Diamonds are Namibia's biggest export revenue earner (United Nations Economic Commission for Africa Southern Africa Office, 2008). Other major minerals present are gold, copper, silver, salt, fluorspar, dimension stones, zinc, lead, semi-precious gemstones as well as dimension stone.

Since its independence in 1990, the mineral sector in Namibia has grown, in 2007 it accounted for 12.4% of the GDP, 61% of merchandise exports, 3% of total employment and 18.3% of fixed investment (United Nations Economic Commission for Africa Southern Africa Office, 2008). In 2012 the mining sector contributed 11.5% to the country's Gross Domestic Product (GDP) up from 8.2% in 2011; mineral exports accounted 41% of total. However, this figure was lower than the average of 55% over the preceding years (Chamber of Mines of Namibia, 2013). According to the Chamber of Mines of Namibia Annual Review (Chamber of Mines of Namibia, 2015), in 2014 the mining industry in Namibia made a direct contribution of 13% to the GDP, up from 12.6% in 2013, also they predict that the direct contribution by mining to the GDP in Namibia will increase to 17% by 2017/18. Mining is, and will remain the backbone of the Namibian national economy for decades to come, the sector in Namibia is on a growth path unprecedented in the history of independent Namibia with the sector creating new jobs and expanding the tax base for the fiscus is in spite of the challenges on international commodity markets where Namibia has no control. It emerged as the most attractive

investment destination in Africa in the 2014 Report by the Canadian Fraser Institute (Chamber of Mines of Namibia, 2015).

3.2 MINERAL POLICY HISTORY AND BACKGROUND

Historically in Namibia, privately owned companies led and dominated in mining and mining activities. Starting from the early 2000's more foreign interest and investment was desired in this sector and an environment was created in Namibia to attract this (Mtegha, Cawood and Minnitt, 2006; Mtegha, Cawood and Minnitt 2010).

The current mineral policy in Namibia was formulated through widespread, intensive and long drawn out stakeholder consultation (Mtegha et. al, 2010,

; Minerals Policy of Namibia, 2003). The Policy is aligned with Vision 2030 which is the National Development Plan, core legal backing for it is provided by the Minerals (Prospecting and Mining) Act of 1992 and the Diamond Act of 1999 (United Nations Economic Commission for Africa Southern Africa Office, 2008).

The vision of the current mineral policy is to provide guidance, as well as to lead to increased participation of the previously disadvantaged local populace in this sector (Minerals Policy of Namibia, 2003). The mineral sector was also to contribute more and be thus more significant in national revenue generation. The mineral policy was also to address various public concerns thus engineering further economic growth and socio- economic development.

The paper by Mtegha et. al. (2010) examined the process of formulating the Mineral Policy of Namibia, 2003 and compares it to that used in formulating the 1997 Mineral Policy of Tanzania. Many varied concerned parties were consulted and actively involved in its formulation. It notes also the wide

support enjoyed by the Namibian mineral policy. The policy was also formulated with sustainability in mind.

3.3 MINERALS POLICY OF NAMIBIA (2003): ENVIRONMENTAL, SOCIAL AND ECONOMIC PILLARS

The mineral policy is analysed from a viewpoint of sustainable development. Sustainable development features as a main component of both the vision and the mission statement in the Namibian mineral policy. It was given great importance in the formulation process.

The Namibian National Mineral Policy encompasses eight main key themes that are examined below from a sustainability viewpoint using “The Three Pillars of Sustainable Development”. Policy statements were examined and classified under the relevant sustainable development pillar. This has been done in the following tables. Table 3.1 displays the environmentally oriented policy statements. Table 3.2 displays the socially oriented policy statements and Table 3.3 displays the economically oriented policy statements. All policy statements are extracted from the “Minerals Policy of Namibia, 2003. Key themes of the policy include governance and regional integration, discussion of the tables is done in the following section.

Table 3.1: The Environmental Pillar of the Minerals Policy of Namibia (2003)

Mineral Policy Theme	Environmental Policy Statement
THE MINING INDUSTRY	The Government will:
• **Prospecting and Mining In Protected Areas**	• "Ensure that all exploration and mining in protected areas is compliant to the economic and the environmental regulatory regime".
• **Mine Closure/ Integrated Mine Use**	• "Find out about the setting in place of compulsory measures of financing final Mine Closure Plans". • "Track closely all the mines that close to make sure that the minerals and mining sector is able to and has plans in place to convert these closed mines to land that can be used again sustainably."
• **Small- scale mining**	• "Small scale miners will be encouraged to adhere to good environmental, health and safety standards in all mining operations. (All small scale mining operations will have to adhere to an environmental contract. This creates environmental awareness and trains miners through dissemination of targeted

	information)". • "Make sure that the small scale mining operations comply with environmental standards through close tracking of them".
• **"Marine Exploration and Mining".**	• "In conjunction with all relevant parties will outline a framework with specific pointers on writing a report on the programme of environmental management".
VALUE ADDITION	• "Enforce there are appropriate environmental tracking mechanisms to guarantee compliance with the programmes for environmental management for activities that add value. This must be done conforming to global standards".
THE MINING INDUSTRY AND THE ENVIRONMENT	• "Make sure that the minerals and mining industry in the nation is sustainability oriented".
• **Effective Environmental Management**	• "Enforce mining and exploration regulatory instruments based on international environmental standards".
• **Environmental rehabilitation**	• "Will make sure that during rehabilitation there is adherence to the national policies, regulatory framework and to international standards where possible". • "With all concerned parties will

	comprehensively find out and formulate methods for financially funding rehabilitation of the environment as well as the maintenance of this".
• **Waste management**	• "Together with mining stakeholders will formulate guidelines and set out standards for the management of waste".

Source: Minerals Policy of Namibia (2003)

3.3.1 DISCUSSION: THROUGH THE "EYE" OF SUSTAINABLE DEVELOPMENT- Environmental

For a long time, mining has contributed significantly to the Namibian economy and generates great revenue. Mines approaching closure due to the exhaustion of the mineral resource are usually abandoned, Namibia is covered with the remains of such abandoned and unrehabilitated mines (Barnard, 1998). To date in Namibia, abandoned mines are in excess of two hundred and forty (Minerals Policy of Namibia, 2003), the government shoulders the burden of care and rehabilitation and care for these sites (Minerals Policy of Namibia, 2003). Such mines must be rehabilitated, not only because they are an eyesore, but also for human safety, for the restoration of the ecosystem and the previously disrupted habitat of animals and plants. The environmental issues of mine closure and environmental rehabilitation are clearly addressed within the mineral policy of Namibia as shown in Table 3.1.

In diamond mining, large quantities of sand must be moved in order to reach the diamond ore. When this type of mining is done by or on the waterfront, it is called marine or beach. It poses as a risk to the species that live around

these areas. An adequate framework is given through the mineral policy of Namibia as shown in Table 3.1. It ensures that this type of mining is sustainable through the rehabilitation and environmental management framework requirement for marine exploration and mining.

Globally, Namibia is ranked as number four in the production of uranium. It accounts for eight percent of the world's supply of uranium (WNA, 2011b). There are serious risks on health and bio- diversity though the natural ore though its uranium content is very low (Brugge, 2005). During extraction and processing a lot of waste is generated, this includes radioactive and heavy metals that require special disposal. These may contaminate nearby ground water sources or escape to the environment in the case of the dam breaking. Waste management is a sub-theme in the Mineral Policy of Namibia, catering excellently for this challenge as shown in Table 3.1.

Table 3.1 shows that the environmental aspect of "small scale miners" clearly is addressed. It is commendable that protected areas are mentioned.

An outstanding issue however is that of the Environmental Impact Assessments (EIA's). An EIA should be mandatory and stated to be such, in the mining policy. However this does not eliminate the possibility of it being a legislative requirement under another ministry or associated policy in Namibia, but as the mining policy drives legislative instruments for the mining sector and provides firm guidance for the sector, an EIA should be specifically mentioned. Except for stating casually within the mineral policy that EIA's are not mandatory for value addition activities they are not dealt with further in the Minerals Policy of Namibia, 2003. This is a crucial assessment that needs to be carried out before approval of mining. The fact that this issue is stated somewhere in the document implies that the existence of EIA's was acknowledged but dismissed implying it might be mentioned comprehensively in other legislation. EIA's, thus could possibly not have been mentioned in

detail because they are a prerequisite in the “Environmental Management” that is mentioned in Table 3.1. In Namibia the Environmental Policy and Environmental Management Act as well as the Minerals Act provide guidance on environmental issues, thus coordination between the Ministry of Mines and Energy and the Ministry of Environment and Tourism is required to ensure compliance (United Nations Economic Commission for Africa Southern Africa Office, 2008).

Water is a scarce commodity in Namibia and mining consumes quite a considerable amount of it. Some mention, and accompanying measures should be put in place regarding this issue within the mineral policy. In order to be sustainable development oriented, the mining policy must adequately address environmental issues.

The Environmental Pillar of the Namibia Mining Policy is very comprehensive, clear and specific in addressing most issues of environmental concern in Namibian mining as shown in Table 3.1. All the measures put in place also reflect that the government has a clear mandate of protecting the environment and minimizing any damage to it as well as conserving it where possible.

Table 3.2: The Social Pillar of the Minerals Policy of Namibia (2003)

Mineral Policy Theme	**Social Policy Statement**
THE MINING INDUSTRY	The Government will: • “Ensure that the minerals and mining industry be beneficial to all citizens and also will ensure Namibia is consistently a force to reckon with

	in this industry". • "Make sure that it caters for the provision of economic and also social infrastructure. It will also try to support where possible, infrastructure that is as a result of mining sector activities."
Medium to large scale mining • **Land Access**	• "To give the Minerals Ancillary Rights Commission (MARC), a definite outline and framework on providing compensation and on the procedure concerning land access".
• **Social responsibility of Mining Companies**	• "Urge the mining sector to be aware of and take responsibility socially by engaging in activities such as skills training, having the community take part in mining related decisions as well as through programmes geared at support".
• **Marine Exploration and Mining**	• "Together with these companies that deal with marine mining, will ensure that citizens acquire the specialized skills required in this sub-sector". • "Promote finances to be channeled into the marine mining subsector. Examples of areas to be promoted are exploration, extraction,

	processing as well as into the technology behind disposal of waste".
VALUE ADDITION	• "In conjunction with relevant parties, will identify skills deficiencies in the area of adding value to mineral resources. Then once these are identified, rectification will be through various initiatives".
THE MINING INDUSTRY AND THE ENVIRONMENT • **Health and safety**	• "To make sure that the sector is operating in accordance to regulations of Mine Health and Safety".
HUMAN RESOURCES • **Training**	• "Motivate and provide all assistance needed for the production of a human resources base equipped with the relevant skills of catering for the mining sector". • "Motivate the mining industry through various means to promote and provide training for students who want to venture into the mining sector. This can be in various forms ranging from tin-house raining at the mining company or apprenticeships to the provision of funding for students to train."

• **HIV/ AIDS**	• "To be proactive behind the enforcement of a HIV/AIDS policy document for the nation and also to motivate the mining sector to be compliant to it".
• **Affirmative Action**	• "To ensure that the companies involved in mining observe the regulatory instruments. This is in order to make sure that no citizen in Namibia is disadvantaged unfairly."
• **Gender**	• "Make sure that the minerals and mining sector in Namibia follows the national policy on gender".
GOVERNANCE OF THE MINING SECTOR	
• **Integrated Land Use Planning**	• "To come up with a viable framework that ensures that land is harmoniously used and also developed".

Source: Minerals Policy of Namibia (2003)

3.3.2 DISCUSSION: THROUGH THE "EYE" OF SUSTAINABLE DEVELOPMENT- Social

The social pillar of the Namibian Mining Policy is detailed on many issues as shown in Table 3.2. It facilitates or enables for Land Compensation, Community Participation in CSR, Skills Development among Namibians, HIV/AIDS Policy, Gender, Benefits to Namibians and Training among other

issues. The mining industry in Namibia is the main sponsor to bursaries at the Namibian Institute of Mining Technology for artisan skills, this is one of the key centres in providing skills training in mining disciplines. In addition, a third campus for this Institute was also sponsored by the mining industry through the Chamber of Mines in southern Namibia in 2008 (United Nations Economic Commission for Africa Southern Africa Office, 2008).

No mention, however, is made of a Social Impact Assessment. It should be a requirement stated in the mineral policy.

The local community is only mentioned with regard to social responsibility by companies as shown in Table 3.2. Though it is commendable that companies are mandated to let the community participate, the issue of local community is more in-reaching than general CSR programmes. The social license to operate is critical. This initially is from the host community or local community where the mining activities are located. Provision should ideally be made by the government for preferential treatment of this local community as they directly bear adverse effects of the mine's activities. The mines, among other measures, should preferentially hire locals from the community, they could also empower local businesses in the community by preferentially sourcing goods and services to them. This issue of local community should be included in the mineral policy. The social pillar of the Namibian Mining Policy is very clear, comprehensive and appropriately detailed on many issues, thus it is strong.

Table 3.3: The Economic Pillar of the Minerals Policy of Namibia (2003)

Mineral Policy Theme	Economic Policy Statement
THE MINING INDUSTRY **Medium to large scale mining**	The Government will:
• **Geographic Location**	• "Find out the role of incentives affects mining and exploration activities in remote locations".
• **Empowerment**	• "For the purpose of the achievement of sustainability, initiatives will be drawn up that will serve to increase the involvement of citizens in the minerals industry".
• **Small Scale Mining**	• "Encourage and support the increased activities of small scale miners operations".
• **Economy and Marketing**	• "Make the provision of finances ongoing to viable small scale miners. This will be done through loan structures already in place and also future anticipated structures".
• **Technology**	• "Be motivational in the technology development

and Human Resources	area. Suitable technology must be developed for use by small scale miners in their mining operations. Skills training for these miners will be provided by the Government".
VALUE ADDITION	• "Find out exhaustively about opportunities for the promotion of value addition". • "Motivate and inspire the local manufacturing industry. The logo Mined and Manufactured in Namibia can be used". • "Together with the financial institutions will find out the exact hindrances that are inhibiting the development of the sector that leads to value addition".
RESEARCH, DEVELOPMENT AND TECHNOLOGY • **Research and Development**	• "Support financially and all possible ways the area of Research and Development, also the area of emerging technologies. This is to cater for and provide the most current and cutting edge solutions to circumvent any problems that may be encountered in the mineral resources industry". • "Engage in the founding and building up of a National System of Innovation". • "To act as an intermediary between government institutions and privately owned institutions, encouraging them to work together in the production of knowledge relevant to the mining sector. This knowledge will range from fundamental knowledge to applied knowledge".

	• "Motivate and actively back the mineral resources sector to develop new technology through doing Research and Development".
• **Technology**	• "Motivate and actively back the mineral resources sector to use new technology".
GOVERNANCE OF THE SECTOR • **Corruption**	• "Together with the mining industry will cooperate and be subject to, and in strict adherence to the measures put in place in Namibia that are meant to prevent corruption".
REGIONAL INTERGRATION	"Will non-reservedly ensure that the Southern African Development Community protocol regarding the mining sector and treaty are observed and carried out within the nation of Namibia".
• **Regionalisation**	• "Together will all interested parties will take a very active lead in the formulation of regional policies and in making sure that they are timeously carried out".
• **Technology and Human Resources**	• "Implement a uniform approach to policies that are with regards to human resources and also those that concern technology. This ensures that institutions of research and those of learning are maximally used".

• **SADC Facility Sharing**	• "To advocate that the Southern African Development Community cooperate with the idea of using infrastructure jointly in order to benefit mining activities in the southern African region as a whole".

Source: Minerals Policy of Namibia (2003)

3.3.3 DISCUSSION: THROUGH THE "EYE" OF SUSTAINABLE DEVELOPMENT- Economic

The Economic Pillar of the Namibian Mining Policy is very solid as shown in Table 3.3. It covers areas such as empowerment of Namibians, development and support for small scale miners, value addition, corruption, regional integration

The issue of empowerment through Namibian participation in mining was mentioned, however, with regards only to business development as shown in Table 3.3. Further and more detailed issues on empowerment of the previously disadvantaged Namibians should be dealt with. These are, for example: the allocation of a certain percentage of managerial positions in large scale mines to black citizens. This would be to correct racial and other imbalances created by the political history. In Namibia the Affirmative Action Employment Act was promulgated in 1998 to address past imbalances and it requires companies to submit affirmative action plans (United Nations Economic Commission for Africa Southern Africa Office, 2008).

Small scale mining was thoroughly covered as shown in Table 3.3, but artisanal mining was not acknowledged beyond an introduction. This needs to be rectified as artisanal mining is a key sector in Namibia that cannot be ignored.

Linkages were mentioned in passing within the mineral policy document, with no accompanying policy statements or any real acknowledgement of the relevance of this area. The Policy mentions the Government's commitment to add value to mineral products in order to enhance forward and backward linkages with the rest of the economy. Linkages are crucial for economic diversification and growth in other sectors, they should be a key consideration in the mineral policy document and have accompanying policy statements.

The commitment to encourage local manufacturing through the "mined and manufactured" in Namibia resulted in the country launching a diamond beneficiation programme with the Namibian Diamond Trading Company being opened in 2007. The diamond beneficiation programme aims to in build capacity for further processing with part of the national diamond output being sold to local cutters and polishers (United Nations Economic Commission for Africa Southern Africa Office, 2008).

3.4 CONCLUSION

Though there is room for improvement, the mineral policy for Namibia is relatively well oriented toward sustainable development. Into every key theme, all three aspects of sustainability were comprehensively considered as reflected by relevant policy statements. This mineral policy if implemented ensures sustainable development. It limits environmental degradation, results in economic uplift of the nationals and also ensures positive social benefits projecting to future generations far beyond the life span of the mineral resource**.** The mineral policy of Namibia sets the course of the minerals sector towards sustainable development.

CHAPTER FOUR: TANZANIA

4.1 MINERAL RESOURCES

Tanzania has many mineral resources with economic potential (Kitula, 2006). These include metallic minerals for example, nickel, tin and iron; gemstones for example, diamonds, ruby, tanzanite; industrial minerals for example limestone ,gypsum and phosphate; energy minerals for example coal and natural gas, and building materials like sand and stone aggregates (Mining, Minerals & Sustainable Development Project Southern Africa, 2002). The geology in Tanzania is highly prospective with significant gold mineralization found in the Lake Victoria Greenstone Belts as well as the Mpanda and the Lupa Goldfields, it also has more than three hundred kimberlitic pipes of which many are proved to be diamondiferous (United Nations Economic Commission for Africa Southern Africa Office, 2008).

In Africa, Tanzania is leading in its output of gold, it is positioned as third. South Africa holds position one in gold production, while Ghana is second. (MBendi, 2014). In total the mining sector contributes 2.8% to GDP each year but this could rise considerably in future years (Tanzania Chamber of Minerals and Energy, 2015). It is projected that the mining sector will be standing at 10% of the national “Gross Domestic Product (GDP)”, by 2025. (Tanzania Development Vision, 2025).

4.2 MINERAL POLICY HISTORY AND BACKGROUND

Tanzania gained independence in 1961. Following the Arusha Declaration in 1967, the mineral sector as well as all other major sectors of the economy was nationalised. State enterprises formed by the government undertook

mining activities. With time the sector lost its economic competitiveness. This led to the mostly uncontrolled and illegal mushrooming of a lot of ASM miners (Lwakatare, 1993; Chachage, 1995) as well as medium scale operations. These were mining gold, diamonds, gemstones and industrial minerals (Mutagwaba et al, 1997). Restructuring of development policies by the government was initiated from the mid 1980's.

The Investment Promotion Centre was launched in the 1990's under the Investment Promotion Policy. After it was launched there was an expansion of the mining sector due to it attracting more investors. Restructuring promoted private sector led development and the availability of geodata displaying Tanzania's vast mineral wealth helped in strengthening the minerals sector. This was reinforced by major legislation governing the Tanzania minerals sector at that time, the 1997 Mineral Policy and the 1998 Mineral Act. Currently there is also the 2010 Mineral Act (Tanzania Chamber of Minerals and Energy, 2015). In the mineral policy promulgated in 1997 in Tanzania, government was a regulator, a promoter and a facilitator of the private sector led minerals sector.

Following the introduction of the 1997 policy, Tanzania witnessed considerable increase in investment into mines and exploration as well as to the average annual economic growth rate as reflected by the GDP (The Mineral Policy of Tanzania, 2009). Tanzania however still did not realize the full benefit of its mineral resources, facing challenges of limited technology, limited capital resources as well as an inappropriate macro-economic and mining policy framework. By 2007 the GDP was still at 2.7% thus there was a need to increase it through enhanced integration of this sector with other sectors as well as a different fiscal regime. In October 2007 the Government of Tanzania introduced a new Mining Policy which was rapidly revised as it also failed to deliver on its intended results especially regarding the social and economic well being of citizens though it rested on sound principles, the

Government was also not able to implement it (United Nations Economic Commission for Africa Southern Africa Office, 2008).

The current mineral policy in Tanzania was introduced in 2009. The main purpose of this current mineral policy is the increase in the economic contribution of the mining sector to the nation, also, its strengthening and general integration (The Mineral Policy of Tanzania, 2009). There are 18 other major objectives additionally stated in this policy document, cross-cutting issues dealt with include those of gender, environmental management, health and safety measures (The Mineral Policy of Tanzania, 2009).

The role of the government as stated in Mineral Policy of Tanzania (2009) is that of regulator, facilitator of the minerals sector, a promoter of private investments and an essential service provider. The strategic participation of the government in activities such as mineral exploration, exploitation and value addition is for the intent of stimulating other potential income generating areas for the purpose of increasing benefits to the nation.

4.3 THE MINERAL POLICY OF TANZANIA (2009): ENVIRONMENTAL, SOCIAL AND ECONOMIC PILLARS

The Tanzanian mineral policy objectives and policy statements in accordance with sustainable development principles are classified below in the tables. Table 4.1 displays the environmentally oriented policy statements, Table 4.2 displays the socially oriented policy statements, and Table 4.3 displays the economically oriented policy statements. All policy statements are extracted from the Mineral Policy of Tanzania, 2009. The tables are further discussed in the following section.

Table 4.1: The Environmental Pillar of the Mineral Policy of Tanzania (2009)

Mineral Policy Objective	**Environmental Policy Statement**
(f) Small Scale Miners: Support and Promotion	Government will: (iii) "Do ongoing work with interested parties to make certain that small scale mining operations are environmentally conscious and viable".
**cross cutting issues* To promote best practices for health, safety and environmental management in mining areas.	(i) "Increase the ability and the capability of its departments so that they can be more able to follow up and to regulate mines with regards to legislative requirements regarding environmental protection, occupational health and safety and general mining area management". (ii) "Make it mandatory for the mining industry to make financial provision for their mine closure as well as for rehabilitation of the environment". (iii) "Continue in the synchronisation of legislation in the sector that concerns occupational health, environmental issues and regarding safety". (iv) "Work will be ongoing with all interested parties to ensure that mining (at all scales), is done in a manner that does not compromise the environment". (v) "Carry on in making sure that it educates all miners as well as the local populace around the mining areas

	on HIV/AIDS, safety and health and also on environmental management". (vi) "Be in control of as well as regulate issues concerning explosives and minerals that are radioactive. Specifically their handling, transportation, storage, usage, export as well as exploration and mining".

Source: The Mineral Policy of Tanzania (2009)

4.3.1 DISCUSSION: THROUGH THE "EYE" OF SUSTAINABLE DEVELOPMENT- Environmental

Adverse impacts to the environment, for example land degradation, water and air pollution are to be found in some areas of Tanzania resulting from mining activities (Kitula, 2006; Mader 2012). The policy statement shown in Table 4.1 on strengthening institutional capacity in order to monitor and enforce environmental management is to address this issue. The policy statement however is very general and scanty.

On the whole, the Environmental Pillar of the Tanzanian Mining Policy shown in Table 4.1 covers environmental issues in a general, light and scanty manner with a wide range of issues simply grouped as "*cross cutting issues to promote best practices for health, safety and environmental management in mining areas*". The Environmental Pillar of the Mineral Policy of Tanzania is weak due to the lack of specifics.

An ongoing challenge noted from the 1997 Mineral Policy is environmental degradation. Environmental degradation is however not comprehensively covered in the current 2009 Mineral Policy of Tanzania. EIA's are only mentioned in passing regarding the relationship between mining companies

and communities surrounding the mine (The Mineral Policy of Tanzania 2009, Page 17). The fact that it was mentioned at all, demonstrates that the policy makers were aware of this issue in the writing of this policy. It should be made and mentioned specifically as a compulsory government requirement not downgraded to a voluntary CSR activity. The issue that mining entities are to do an “Environmental Impact Assessment” must be distinctly stated. These must be ideally made compulsory and required before the approval process. This is the only way the Government can assess the impact of the pending project on the environment and thus ensure mining companies take suitable measures to minimize the environmental impacts. Based on the EIA the government can alternatively decide to conserve the environment in cases where the potential environmental cost of the mining operations outweighs the benefit to be realized.

Environmental contamination is rampant in the northern part of Tanzania. It is caused by the significant number of artisanal miners that use mercury to extract gold (van Straaten, 2000). This practice also poses as a risk to human health in various ways. Small scale miners are infamous in southern Africa for their lack of consideration for the environment (Siegel and Veiga, 2010). Thus it is commendable that a policy statement to address this is included in the policy as shown in Table 4.1.

Table 4.2: The Social Pillar of the Mineral Policy of Tanzania (2009)

Mineral Policy Objective	Social Policy Statement
(h) Land issues: Relocation, Compensation and Resettlement	(i) "The Government will review and harmonize relevant legislation to accommodate land issues. These include the resettlement or relocation of the local community that was on the mine area and also the issue of compensation for their land"; and (ii) "The Government will require investors in the mining industry to prepare and implement sound relocation and re-settlement schemes".
(i) "To strengthen involvement and participation of the surrounding communities in mine activities, also to encourage the mines and minerals industry to do more CSR activities".	(i) "The Government will require mining companies to implement credible CSR policies". (ii) Government will encourage mining companies to involve local communities in setting priorities of community development projects and socio-economic aspects during the life span of their projects".
(l) "Training, Research and Development".	(i) "The Government will continue to collaborate with private sector to promote, support and strengthen establishment of training institutions to offer training in technical skills related to the mining industry; (ii) The Government in collaboration with mining companies will continue to support training of Tanzanians in different level of skills required in the

	mineral sector; (iii) The Government will harmonize relevant laws related to skills development and employment to ensure adequate development of local technical capacity to service the mining industry; and require mining companies to employ local experts available and develop succession plans for Tanzanians to take over expatriate positions; and (iv) The Government will work with other member states in EAC and SADC regions to assess skill deficiency in mineral industry and develop and maintain an active database on skills required".
**cross cutting issues* To promote best practices for health, safety and environmental management in mining areas.	(i) "Increase the ability and the capability of its departments so that they can be more able to follow up and to regulate mines with regards to legislative requirements regarding environmental protection, occupational health and safety and general mining area management". (ii) "Make it mandatory for the mining industry to make financial provision for their mine closure as well as for rehabilitation of the environment". (iii) "Continue in the synchronisation of legislation in the sector that concerns occupational health, environmental issues and regarding safety". (iv) "Work will be ongoing with all interested parties to ensure that mining (at all scales), is done in a manner that does not compromise the environment". (v) "Carry on in making sure that it educates all miners as well as the local populace around the mining areas

	on HIV/AIDS, safety and health and also on environmental management". (vi) "Be in control of as well as regulate issues concerning explosives and minerals that are radioactive. Specifically their handling, transportation, storage, usage, export as well as exploration and mining".
(r) "To encourage and promote women participation and strengthen enforcement of laws and regulations against child labour in mining activities".	(i) "The Government will ensure make sure that the number of women involved actively in mining increases". (ii) "Government to monitor that there is gender and equity balance at every programme at mines as well as in training and education opportunities"; and (iii) "The Government will collaborate with stakeholders to strengthen monitoring and legislation in the mining industry as regards child labour".

Source: The Mineral Policy of Tanzania (2009)

4.3.2 DISCUSSION: THROUGH THE "EYE" OF SUSTAINABLE DEVELOPMENT- Social

The Social Pillar of the Tanzania Mining Policy is quite strong and detailed, as shown in Table 4.2. It covers a comprehensive range of key issues including Gender, CSR, Local Communities. The strength of this social pillar of the Tanzanian Mineral Policy is probably as a result of the objective of the Tanzanian government that mining should be of benefit to the nation directly, socially as well as economically. This is set to be achieved through a mineral policy, which is oriented towards sustainable development in a social context.

In the adult population in Tanzania HIV/AIDS prevalence is still a significant problem as it is very high (Mader, 2012). Thus it is good that this issue has been addressed in the Mineral Policy of Tanzania, 2009 as shown in Table 4.2.

Labour rights are violated throughout Tanzania, child labour (Mwami et al, 2002) as well as forced labour and discrimination are common (Mader, 2012). Given the social situation in Tanzania, it is highly commendable that the issue of child labour was integrated into the mineral policy with a solid policy statement against it. This is shown in Table 4.2.

Mining operations in Tanzania are normally carried out in remote rural areas with poor infrastructure and facilities, thus companies are under pressure to carry out CSR activities. Some communities in Tanzania cite grievances with CSR projects for various reasons including, that they see as if projects are for the company's own benefit like when the company repairs roads leading to the mine site, or drawing water pipes that mining companies themselves need (Masanja, 2012). Also, in Tanzania each mining company has its own CSR initiatives and projects thus when local communities compare what is being done in other mining communities they can be dissatisfied with the CSR projects in their community. Thus according to Masanja (2012) there is a need to develop a tool for performance measurement of CSR initiatives in the extractive industries. The annual Presidential award on Corporate Social Responsibilities and Empowerment was launched by the President, H.E. Jakaya Mrisho Kikwete on 28th February, 2012 to stimulate implementation of sound CSR initiatives in communities surrounding the extractive industries projects and ensure sustainable development.

No mention is made of any requirement for a social impact assessment from mining entities. This should be a requirement stated in the mineral policy, according to modern sustainability practices.

Table 4.3: The Economic Pillar of the Mineral Policy of Tanzania (2009)

Mineral Policy Objective	Economic Policy Statement
(a) Investment	(i) "Government will provide an up to date, predictable financial regulatory framework for the mineral sector"; (ii) "The Government in alone or together with the private sector will provide reliable infrastructure to service the mining industry where feasible"; and (iii) "The government will encourage and promote establishment of reliable and capable financial institutions".
(b) Economic Integration	(i) "Government will strategise to come up with initiatives that can result in the mining sector integrating more with other sectors economically"; (ii) "Whenever possible, through its relevant institutions and or in collaboration with the private sector will construct required infrastructure in places where a possibility is present that a mine may be started there"; (iii) "The Government will require mining companies to procure locally goods and services"; and (iv) "The Government will support and promote Tanzanians to supply quality goods and services to the mining industry".
(e) Citizen Empowerment	(i) "The Government will empower its institutions to participate strategically as a developer or jointly with private sector in mining projects"; (ii) "The Government will take necessary measures to

	enable citizens to be able to actively take part in the large as well as medium scale mines"; (iii) "Government will collaborate with stakeholders to eliminate obstacles hindering mining companies from registering in the Dar es Salaam Stock Exchange; and Tanzanians from buying shares in mining companies registered abroad"; and (iv) "The Government will take steps to allow Tanzanians to enlist their mineral rights in foreign stock exchange markets to access capital".
(f) "To support and promote development of small scale mining so as to increase its contribution to the economy"**.**	(i) "Government will strategise and drive initiatives to metamorphose small scale miners to become technologically up to date miners that are well organised and operating at a higher level". (ii) "Government will work together with interested parties to make sure that small scale mining operators have access to geological data, product markets as well as to technical and financial services".
(g) Gemstones	(i) "The Government will market and transform the nation, so it can be regarded as a "gemstone centre", on the African continent"; (ii) "The Government is to make sure that not less than 50 percent shares of large scale gemstone mines are in the hands of citizens"; (iii) "Government to make sure and facilitate citizen full ownership of all gemstone mines that are small and large scale". (iv) "Citizens to be encouraged actively to be investors

	in gemstone mining". (v) "The Government will improve its collaboration with the private sector to develop gemstone mining".
(j) Minerals Marketing	(i) "The Government will collaborate with stakeholders to develop local mineral market; (ii) "The Government will harmonize taxes and tariffs on minerals produced in the country to ensure that they are competitive"; (iii) "The Government will source foreign markets for minerals and strive to accrue information relating to mineral markets in general"; and (iv) "The Government will collaborate with private sector to develop and improve training institutions on mineral marketing, mineral grading and valuation".
(k) Value Addition	(i) "The Government will lobby for investors into areas like manufacturing that will lead to increased mineral beneficiation"; (ii) "The Government will promote investors into the areas of lapidary, stone carving and jewellery making"; and (iii) "The Government will work with the private industry as well as various organisations for strategic investment to be made in smelting and refining industries".
(l) "To promote research development and training required in the mineral sector	(i) "The Government will continue to collaborate with private sector to promote, support and strengthen establishment of training institutions to offer training in technical skills related to the mining industry; (ii) The Government in collaboration with mining

and encourage its utilization".	companies will continue to support training of Tanzanians in different level of skills required in the mineral sector; (iii) The Government will harmonize relevant laws related to skills development and employment to ensure adequate development of local technical capacity to service the mining industry; and require mining companies to employ local experts available and develop succession plans for Tanzanians to take over expatriate positions; and (iv) The Government will work with other member states in EAC and SADC regions to assess skill deficiency in mineral industry and develop and maintain an active database on skills required".
(p) "To strengthen cooperation with the regional and international bodies to take advantages of facilities, resources and information provided by the organizations".	(i) "The Government will collaborate with regional bodies of which Tanzania is a member to harmonize its mineral policy with other mineral policies; and (ii) "The current ongoing work being done by the Government with regional and international organisations will be maintained. It is work in research, transfer of technology, training and exchange of information".

Source: The Mineral Policy of Tanzania (2009)

4.3.3 DISCUSSION: THROUGH THE "EYE" OF SUSTAINABLE DEVELOPMENT- Economic

The Economic Pillar of the Tanzania Mineral Policy is strong as shown in Table 4.3. It contains detailed statements regarding linkages, value addition, beneficiation, small-scale miners as well as empowerment of the local populace. Major issues of relevance that orient the policy towards sustainable development are covered in detail.

4.3.4 Other Issues

The Mineral Policy of Tanzania 2009 recognizes and calls for the enablement of effective administration, monitoring and enforcement. This is through the reinforcement of some structures, for example institutional.

Increasing public awareness is also taken as a priority, the specific objective, being to improve communication on the mineral sector. This was to be through strategic means for example, education. The aim was and is for the general public to be involved in implementation of this policy.

4.4 CONCLUSION

The Environmental Pillar of the Mineral Policy of Tanzania is weak as shown by Table 4.1. The "Tanzania Mineral Audit Agency (TMAA), Ministry of Energy and Minerals", however, in addition to facilitating the maximization of government revenue from the mining industry, also ensures sound environmental management in the mining areas.

The Mineral Policy of Tanzania, 2009 has very strong Social and Economic Pillars. Corporate Social Responsibility (CSR) in Tanzania is rapidly developing though implementation is spontaneous and ad hoc (Mader, 2012).

Over the decades CSR has been promoted as a component of sustainable development. Behind this development is the international business sector, particularly the extractive industry, local and regional stakeholders. These seek to increase CSR visibility as well as the anti-corruption movement in politics which reflects on the private sector (Mader, 2012).

The issue of ASM miners in Tanzania is a present and continual challenge. It cannot be minimised or afford to be ignored. The estimates of the ASM miners in Tanzania is standing at approximately 550 000 (Buxton, 2013). This reflects the seriousness of this issue. This challenge should be thoroughly addressed, primarily through the mineral policy which serves as a foundation of legislation in the sector, and orients the direction of the mineral resources sector in Tanzania. Under the section on Development of Small Scale Mining (The Mineral Policy of Tanzania, 2009, page 15), artisanal miners are acknowledged. It is stated that since 1997, Government has tried to provide various necessary services to the artisanal miners. It also embarked on a project to upgrade them to small scale miners. Now the current focus of the 2009 Mineral Policy in this area on these small scale miners, to uplift them by any possible means available to the government, so that they can make a significant positive impact on the economy (The Mineral Policy of Tanzania, 2009). This is highly commendable, as is also the government's efforts from 1997 to 2007 of formalization and transformation of artisanal miners to be "small scale miners.".

The issue of ASM miners in Tanzania is a present and continual challenge. It cannot be minimised or afford to be ignored. The estimates of the ASM miners in Tanzania is standing at approximately 550 000 (Buxton, 2013). This reflects the seriousness of this issue. This challenge should be thoroughly addressed, primarily through the mineral policy which serves as a foundation of legislation in the sector, and orients the direction of the mineral resources sector in Tanzania.

According to the Tanzania Mineral Audit Agency CEO (Masanja, 2012) the capacity of Government to evaluate, monitor and audit the minerals sector needs to be enhanced continually in order to ensure sustainable development. Also mining companies in Tanzania need to fully embrace the sustainability agenda and have the right policies and management systems.

CHAPTER FIVE: MALAWI

5.1 MINERAL RESOURCES

Malawi has an untapped mineral resource potential, the full mineral potential remains undetermined. (Global Business Reports, 2013). Evaluating it requires that a certain amount of data be available. The available geological data is inadequate (Mines and Minerals Policy of Malawi, 2013). Minerals found in Malawi are coal, heavy mineral sands, limestone, rare earth minerals, uranium, phosphate, bauxite, dimension stone, sulphides and a variety of gemstones. Recently exploration commenced for oil in Malawi's portion of the Africa Rift System.

The backbone of the Malawian economy is agriculture. This situation is as a result of governmental policies adopted after independence in 1964 (Mines and Minerals Policy of Malawi, 2013). The mining industry of Malawi is relatively undeveloped, apart from industrial minerals and coal mining which mainly service local demand. Mining is expected to be accounting for at least 20% of the "GDP" by 2023 however, mining in Malawi currently accounts for 10% of the Gross Domestic Product (GDP) (Mines and Minerals Policy of Malawi, 2013). It was accounting for less than 3% of the GDP until the Kayelekera Uranium Mine was opened. It was opened in 2009 but in February 2014 it was placed on 'care and maintenance' due to the continuing very low uranium price (Paladin (Africa) Limited, 2014). .

5.2 MINERAL POLICY HISTORY AND BACKGROUND

The Mines and Minerals Policy of Malawi, 2013 is the first stand alone mineral policy document in Malawi. Prior to this policy, the Malawi minerals sector

was regulated directly through the legislative framework. This framework included the 1981 “Mines and Minerals Act”. Stakeholder dialogue was extensively used in formulation of the Mines and Minerals Policy of Malawi 2013. It is similar in themes to the policy of Namibia.

The policy has eight major objectives which are all oriented towards sustainable development. The Mines and Minerals Policy of Malawi, 2013 contains within it, Annex I and Annex II. These are the Policy Implementation Plan and the Monitoring and Evaluation Plan respectively.

The Policy Implementation Plan in Annex I, is in the form of a table. The first column lists policy statements contained within the mineral policy document. The required objectives are then listed for each policy statement in the next column, this is followed by the corresponding strategies mapped out to achieve each individual objective together with the actual activities to be performed. A time frame, the department responsible for execution and the expected outputs are listed for each strategy. The last column is entitled budget.

Annex II is the Monitoring and Evaluation Plan for the mineral policy document, it is also in tabular format like Annex I. The first column states the strategic objectives. Four strategic objectives are listed in the Mines and Minerals Policy of Malawi, 2013. These are the promotion of minerals sector development in Malawi; to optimize mining activities within Malawi; to expand employment opportunities in Malawi and to foster the needed economic diversification. All of these have expected outcomes and inputs that are then stated. The outputs are the things that are to be produced, made operational, established, improved and conducted for each stated outcome. For each output, the output indicators are given, the baseline stated which was taken to be 2012 as well as the targeted aim to be achieved by the year 2022. The

means of verification, frequency, responsible officer are then listed in the next columns. The last column is a remarks column.

The presentation of the Policy Implementation Plan and the Monitoring and Evaluation plan within the Mines and Minerals Policy of Malawi, 2013 is a demonstration of commitment and ensures the implementation of the policy. It also ensures speedy implementation as the responsibilities are allocated and the monitoring and evaluation schedule is drawn out. Mineral Policy is inherently ineffectual without implementation. It is a vision, a theoretical framework it must be practically applied to be effective. The attachment of the Policy Implementation Plan as well as the Monitoring and Evaluation Plan in the Mines and Minerals Policy of Malawi is highly commendable as it shows intent to implement and attain sustainable development through the mineral policy. However, it must be noted that commitment the plan with the actual allocation of resources and follow up is needed for actualization.

5.3 MINES AND MINERALS POLICY OF MALAWI, 2013: ENVIRONMENTAL, SOCIAL AND ECONOMIC PILLARS

Six main themes are covered in this policy. They are presented individually as separate chapters. Each theme is introduced clearly within its Chapter. The corresponding issues of each theme are then listed under the various sub headings that deal with areas within the respective theme. Policy statements are given, addressing the various issues.

The main themes in the policy as well as the accompanying objectives and statements were examined and evaluated. Those in accordance with sustainable development principles are classified in the tables below under the appropriate ‘pillar’. The tables are further discussed in the following section.

Table 5.1: The Environmental Pillar of the Mines and Minerals Policy of Malawi (2013)

Mineral Policy Theme	Environmental Policy Statement
Mineral Development • "Artisanal and Small Scale Mining" (ASM)	Government to: (b) "Locate specific areas and then make the required appropriate skills education available for the Artisanal and Small Scale Miners in the management of the environment, in the area of technology, and also in standards of occupational safety and occupational health that are necessary".
Environmental Management	"Will make sure mining methods are used that are environmentally friendly and that are consistent globally acceptable".

Source: Mines and Minerals Policy of Malawi (2013)

5.3.1 DISCUSSION: THROUGH THE "EYE" OF SUSTAINABLE DEVELOPMENT- Environmental

Environmental Management is one of the six main themes of the Mines and Minerals Policy of Malawi (2013). This shows that the importance of this area was duly recognized. The issue of Environmental management is stated generally as shown in Table 5.1 but intensively developed in Annex 1.

Annex I of the Malawi Mines and Minerals Policy (2013) gives the Implementation Plan for the Environmental Management theme. The strategies employed in this area are promoting and ensuring environmentally

friendly mining practices by instilling an attitude of joint responsibility. This will be by activities like conducting awareness campaigns, establishing village environmental monitoring committees for ASM's. Other activities include enforcement of carrying out EIA's and development of the process of issuance of a mine closure certificate that indicates various things like compliance. The Implementation Plan is detailed and specific.

No mention, however, is made of waste disposal which is a crucial area in environmental management. More so considering the country's first large scale mining project, Kayerekera, is a Uranium mine. In uranium mining, there are dangerous waste products that must be specially disposed of. There is a low concentration of uranium in natural ore but there are still dramatic risks on health and bio diversity (Brugge et al., 2005). No mention is made also, of rehabilitation of closed or abandoned mines.

The Malawi Mines and Minerals Policy (2013) also contains in Annex II, the Monitoring and Evaluation Plan. For environmental management, it states that output indicators will be in the form of inspections verified by accompanying reports. This is highly commendable. The Mines and Minerals Policy of Malawi (2013) document gives reference to the National Environment Policy (1996) which gives an overall structure for sectoral environmental policies.

Table 5.2: The Social Pillar of the Mines and Minerals Policy of Malawi (2013)

Mineral Policy Theme	Social Policy Statement
Mineral Development • Promotion and Marketing	Government to: (c) "Support and drive training in mining and also training in geology".
• Research and Development, Training	(a) "Ensure that the appropriate research and also appropriate training institutions be established in the nation, for the purpose of having all the required skills and be up to in this particular field". (b) "Make sure that all tertiary education in the nation has content that addresses the requirements of the mining sector". (c)"Motivate that advanced study, skills training and development work in association with the minerals industry to ensure a positive impact".
• "Artisanal and Small Scale Mining" (ASM)	(b) "Find, and then make the required appropriate training available for the Artisanal and Small Scale Miners. This should be in areas like the management of the environment, in the area of technology, and also in standards of occupational health and safety".

Social Issues	"Make sure that societal related issues pertaining to the mineral resources sector are appropriately and sufficiently taken care of".

Source: Mines and Minerals Policy of Malawi (2013)

5.3.2 DISCUSSION: THROUGH THE "EYE" OF SUSTAINABLE DEVELOPMENT- Social

Social issues are allocated as one of the six main themes dealt with in the Mines and Minerals Policy of Malawi (2013). The policy statement given as shown in table 5.2 under this theme is very brief and general. Issues identified are empowerment of Malawians, articulated social responsibilities for mining companies, HIV/AIDS, gender, child labour as well as compensation and resettlement. The strategies and activities are well laid out for this theme in the Implementation Plan.

As shown in Table 5.2, the theme of mineral development in the Mines and Minerals Policy of Malawi (2013) has a policy statement dealing with local participation. The policy statement aims at empowering local entrepreneurs. It was noted that in this particular policy document "local" refers to Malawian nationals and not the local community in the vicinity of the mine. This policy statement is thus economic in nature. The Policy Implementation Plan in Annex I also further clarifies this issue as Malawian citizen empowerment. The empowerment of Malawians in the area of entrepreneurship within the minerals sector is commendable and economically advantageous. However the topic of local participation must ideally have been further developed. Local should in policy not refer to Malawian nationals in general but specifically include and refer to the local populace in the area where the mining activities are located. Local community issues must be addressed in the mining policy. In this policy, local community issues are not recognised, addressed or

resolved. This is evidenced by an article in the December 2014 Issue of the Mining Review covering the National Mining Alternative Indaba held from the 25th to the 27th of November 2014 titled " Communities cry for inclusiveness in mining ventures". In this article the grievance is aired by local communities in mining areas that they are not consulted or involved by government or the mining companies.

Table 5.3: The Economic Pillar of the Mines and Minerals Policy of Malawi (2013)

Mineral Policy Theme	Economic Policy Statement
Mineral Development	Government will:
• Promotion and Marketing	(f) "Lobby for the disbursement of loan finance to citizen owned businesses for the purpose that they can invest it in the minerals sector".
• Local Participation	(a) "Foreign investors to work in partnership with local people or citizens. The aim of this is to empower local entrepreneurs". (b) "Draw up a policy on the participation of the citizen roles in the minerals and mining sector".
• Support Infrastructure	"Ensure that it backs up strategies of improving the quality of essential services and also the support infrastructure in the minerals and mining industry. This will be particularly in the sectors that

	are very crucial for example communication and energy supply".
• Research and development, Training	(a) "Ensure the setting up of suitable research and training institutions be established in the nation, for the purpose of having all the required expertise and up to date technology in the mining sector". (b) "Make certain that the teaching content in the tertiary education centres of the nation has curriculum that addresses the requirements of the mining industry". (c) "Motivate research, training and developmental centres to work together with the minerals industry to make sure they positively impact on the sector".
• ASM	(a) "To make artisanal and small scale mining activities official, then will monitor them". (b) "Find areas of skills shortage then make the required appropriate training available for the Artisanal and Small Scale Miners in the management of the environment, in the area of technology, and also in standards of occupational health and safety that are necessary". (c) "Help those who have mining ventures that are solid get financial aid, so they can invest into their ventures". (d) "Ensure that requirements regarding all services as well as skills education is provided in

	order to add value to the precious and semi precious stones". (e) "Security will be intensified through various systems and mechanisms in order to prevent illegal dealings or exportation of precious and semi precious stones".
• Mineral Value Addition	"Make sure that financial resources are invested in the processing of minerals in the country for the purpose of adding value. An example is for the cutting then subsequent polishing of precious and semi precious stones. The end products, for example jewelry can also be made in the country".
Investment Climate In The Mining Sector	
• Macro-economic Environment	"Have statements in policy that lead to the achievement of maximal growth economically of the nation. This will be in order to ensure the mining industry is more lucrative for investors".
• Taxation Regime for Minerals Sector	"In order to attract foreign direct investment into the mining sector of the nation and to also ensure that the generated revenue is of benefit to the nation, a transparent, excellent tax and fiscal framework will be developed by the Government".

Source: Mines and Minerals Policy of Malawi (2013)

5.3.3 DISCUSSION: THROUGH THE "EYE" OF SUSTAINABLE DEVELOPMENT- Economic

As shown in Table 5.3, some of the components of the" economic pillar" of the Mines and Minerals Policy of Malawi (2013) are to support infrastructure, training, mineral value addition and local participation. The subject of ASM is covered in considerable detail as shown in Table 5.3 which is excellent.

No mention is made of linkages. This is possibly due to the relatively undeveloped nature of the minerals sector in Malawi which is still focused on development of the sector itself.

The intent was stated to be active in global and regional initiatives that regard governance of the minerals sector such as the Kimberly process and the EITI and the Multilateral Investment Guarantee agency. The economic pillar is strong and is oriented towards sustainable development.

5.3.4 Other Issues

The Mines and Minerals Policy of Malawi (2013) contains some policy statements geared at improving the governance of the minerals sector. These are with respect to the institutional, legislative and regulatory frameworks. The arrangements being that Government will strengthen institutions to manage and coordinate the mining industry; a clear transparent and equitable regulatory framework would be put in place by the Government for the sector and also that mining legislation would be reviewed and harmonized with other related legislations (Mines and Minerals Policy of Malawi, 2013).

5.4 CONCLUSION

The Mines and Minerals Policy of Malawi has an extremely impressive layout with the extra features of Annex I and Annex II which are the Policy Implementation Plan and the Monitoring and Evaluation Plan respectively. The addition of these sections causes the Policy to map the way forward with clarity. This early allocation of responsibility goes a long way in ensuring effectiveness of the policy.

Looking through “the eye of sustainable development”, the importance of the environment was indeed recognized as it was treated as a main theme. The environmental pillar is not strong but adequate.

The Social pillar is strong and the economic pillar is also strong as displayed by the relevant tables. The strength of the economic pillar may be attributed to the policy’s purpose. The purpose which is to convert or transform the revenue source of the nation to be generated largely through the mining industry.

The Malawi Mineral Policy is an exemplary Policy. The challenge of artisanal to small scale miners is addressed in detail within the various environmental, social and economic contexts. This policy orients the minerals sector of Malawi towards sustainable development though it has a strong economic and social bias. The inclusion of the Implementation Plan as well as the Annex II gives the Policy credibility and increases its chances of success significantly. However, it could prove a weakness if these plans are followed blindly without room for adjustment or improvement. To overcome this potential hindrance, Annex I and Annex II should be used as simply a guide and the five year reviews of the policy should be carried out as stated in this policy.

CHAPTER SIX: ZAMBIA

6.1 MINERAL RESOURCES

Zambia is well endowed with mineral resources of metals, gemstones, industrial, agricultural and energy minerals. The full potential of these and other undiscovered mineral resources however, is yet to be realized (Zambia Development Agency, 2013). The Zambian Copperbelt and the North western provinces contain the world's highest grade copper and cobalt deposits (KPMG International, 2013). The World Copper Factbook 2012 ranks Zambia as seventh in the world for Copper production. It is the largest copper and cobalt producer in Africa. There are also other metal deposits found in Zambia. Zambia is host to a range of industrial mineral deposits ranging from feldspar, sands of various specifications, talc, barite, apatite, limestone and dolomite to clay deposits. Gemstones found in Zambia include diamonds, emeralds, amethyst, aquamarine and tourmaline. Zambia produces about 20% of the world's emeralds. Zambia's emeralds which are recovered exclusively from the Ndola Rural area of the southern Copperbelt are much sought after globally for their deep green colour (Zambia Development Agency, 2013). In addition, Zambia has substantial coal reserves, uranium occurrences and potential for hydrocarbons in the form of oil and gas.

6.2 MINERAL POLICY HISTORY AND BACKGROUND

Since the 1930's to 1970 the private sector drove the mainly copper mining industry in Zambia. From 1970 to 1997 the mining industry in Zambia was state controlled, this control from 1982 was through the government owned "Zambia Consolidated Copper Mines" (ZCCM).

Due to poor performance and a need to attract investment, the Government of Zambia began privatisation of the mining sector in 1997 and completed this in the year 2000. The policy direction for the mining sector was through the 1995 Mining Policy. This policy was aimed at encouraging private sector investment in the mining sector.

The current mineral policy for Zambia is entitled the Mineral Resources Development Policy, it was published in July 2013. It is a revision of the previous policy and draws heavily on Vision 2030 for Zambia. The governments vision for the mining sector is, *"To have a vibrant, well organized private sector and private- public partnership led mining sector contributing in excess of 20% towards GDP and sustainable economic development in the country by 2030"*(Mineral Resources Development Policy, 2013).

The policy objectives of the mineral sector as stated in the Mineral Resources Development Policy (2013) are to:

1. *"Attract and encourage local and foreign private sector participation in the exploration for and commercial exploitation of Zambia's mineral resources;*
2. *Facilitate the empowerment of Zambians to become owners/ shareholders in the mining industry;*
3. *Promote the development of a mining sector that is integrated in the domestic economy and which promotes local entrepreneurship, increases demand for local goods and services and, creates employment for Zambians and also promotes value addition.*
4. *Encourage and facilitate orderly and sustainable development of small scale mining sub- sector in order to enable it contribute to economic development and wealth creation;*

5. *Achieve a socially and internationally acceptable balance between mining and the bio-physical environment and to ensure that acceptable standards of health, safety and environmental protection are observed by all participants in the mining sector;*
6. *Promote Research and Development (R & D) and its application in the mining sector;*
7. *Encourage mining companies to develop a participatory and collaborative approach to mine planning, development and decommissioning taking into account the needs and concerns of local communities, thereby fulfilling their role as socially responsible corporate citizen; and*
8. *Ensure transparency and accountability in the management of mineral resources in the country".*

The objectives are mostly sustainable development oriented. The policy consists of seventeen independent sub-sections. Those in accordance with sustainable development principles are classified below in the following tables under the appropriate 'pillar'. The tables are further discussed in the following section.

6.3 MINERAL RESOURCES DEVELOPMENT POLICY OF ZAMBIA (2013): ENVIRONMENTAL, SOCIAL AND ECONOMIC PILLARS

Table 6.1: The Environmental Pillar of the Mineral Resources Development Policy of Zambia (2013)

Mineral Policy Sub-Section	**Environmental Policy Measures and Strategies**
Exploration and Mining	Government will: c) "Promote the exploitation and marketing of uranium in accordance with national and international safety, health and environmental guidelines".
Safety, Health, Environment and Quality	This will be achieved by: a) "Government seeing and monitoring that all mineral and mining processes comply with health, safety and environmental regulations"; b) "Continuing the Environmental Protection Fund (EPF)"; c) "Developing environmental assessment processes". d) "Building capacity of the institutions responsible for ensuring safety, health and environment in the mines"; and e) "Gazetting national parks, game management areas, national forest, local forest, bird sanctuary and any other such environmentally sensitive areas as areas that are protected. The Government will make sure that all mineral resource related activities

	within these places comply with the legislation regarding these areas. It will be done by designing better and clear ways for doing the environmental assessment. Exploration and mining in protected areas will only be allowed when rehabilitation is guaranteed".
"Small scale mining"	To develop this sub-sector Government will undertake the following measures: d) "Spread information so all can be well educated on occupational health, safety and potential impacts to the environment. Also provide occupational health, safety guidelines for small scale mining".

Source: Mineral Resources Development Policy of Zambia (2013)

6.3.1 DISCUSSION: THROUGH THE "EYE" OF SUSTAINABLE DEVELOPMENT - Environmental

There are major environmental impacts of mining in Zambia that are documented by UNEP (UNECA ISG Report, 2011). As shown in Table 6.1, only three different subsections within this mineral policy address environmental concerns and give corresponding policy statements. Environmental awareness in the mineral sector of Zambia appears to be at low level. This is evidenced by the basic and scanty coverage of environmental issues in the Mineral Resources Development Policy of Zambia, 2013 displayed in Table 6.1. The policy measures and strategies contained within the environmental pillar of this policy are very general and provide no response to key issues like EIA's, mine closure plans and waste management. Rehabilitation is only mentioned specifically for the case of

mining in areas that are protected. The environmental pillar for the Mineral Resources Development Policy, for Zambia (2013) shown in Table 6.1 is extremely weak.

Table 6.2: The Social Pillar of the Mineral Resources Development Policy of Zambia (2013)

Mineral Policy Sub-Section	**Social Policy Measures and Strategies**
Exploration and Mining	Government will: c) "Promote the exploitation and marketing of uranium in line with all global and country safety, health and environmental guidelines".
Safety, Health, Environment and Quality	This will be achieved by the Government: a) "Making sure that all areas that are related to mineral resources comply with health, safety and all legislatures with regard to the environment". d) "Building capacity of the institutions responsible for ensuring safety, health and environment in the mines".
"Small scale mining"	Develop this sub-sector Government will undertake the following measures: d) "Spread information so all can be well educated on occupational health, safety and potential impacts to the environment. Also provide occupational health, safety guidelines for small scale mining".
Citizen Economic Empowerment in the	In order to cause Zambians in the mineral resources sector to participate more economically,

Mining Sector	Government: d) “Will reserve a portion of the mineral royalty for the development of businesses in mining communities”.
Integrating the minerals industry into the domestic economy	To enhance contribution of the mineral resource industry to the national economy, Government will: c) “In partnership with the private sector, implement plans to make the operational mines impact positively on the society”. d) “Spearhead promotional campaigns to sensitise the public about opportunities for involvement in the mining sector business activities”; and e) “Make provisions in the law to compel mining companies give preference to Zambian products, local contractors and services and to employ and train Zambians”.
Human Resources Development	Government will enhance training and education so the mineral resources sector is more sustainable by: a) “Regularly identifying skills deficiencies and promoting measures to address them; b) “Encouraging mining companies to support training through provision of education payments, on the job training as well as apprenticeships”; and c) “Ensure adherence to “equal pay for equal work” principle”.
Gender	Government will mainstream gender in the mining sector by: a) “Supporting gender equality in the mining sector through mining legislation”;

	b) “Promoting the participation of women in mineral sciences educational programmes”; and c) “Providing support so that fair chances are available to both men and women participation within the mineral resources industry”.
“HIV/AIDS, Opportunistic Diseases”	The following measures will be put in place to address the challenges posed by the “HIV/AIDS” pandemic: a) “Motivate and support the sector to implement the best practice when dealing with opportunistic diseases and HIV/AIDS”; b) Make sure that National AIDS policy is established in the mineral resources industry”; and c) Support the running of HIV/AIDS initiatives in the mineral resources industry”.

Source: Mineral Resources Development Policy of Zambia (2013)

6.3.2 DISCUSSION: THROUGH THE “EYE” OF SUSTAINABLE DEVELOPMENT – Social

The social pillar of this policy as shown in Table 6.2 is very strong. Relevant issues are examined clearly and relevant policy measures are stated. Some key issues included are those of safety, health, environment and quality, small scale mining, human resources development, gender and crucially HIV/Aids. In Kitwe which is in the Zambia Copperbelt, there are an estimated number of above 45000 AIDS orphans (Kangwa, 2001).

No mention however, is made regarding the critical issue of resettlement and compensation of local communities displaced or affected by mining activities.

This issue is of critical importance and borders on being a basic human rights issue. It should be clearly addressed in the mineral policy.

Table 6.3: The Economic Pillar of the Mineral Resources Development Policy of Zambia (2013)

Mineral Policy Sub-Section	**Economic Policy Measures and Strategies**
Exploration and Mining	Government will: d) “Spread the benefits of mining across Zambia e) Promote exploration of industrial minerals for industrial development; and f) Maintain a stable and internationally competitive fiscal regime that adequately caters for the unstable nature of the sector and also yet caters for the interests of the people of Zambia”.
The Legal Framework	The reviewed legal framework will be characterized by the following features: b) “Strengthened legal provisions which aim to deter sterility in minerals development due to information hoarding on new discoveries and inactivity in licensed exploration areas”.
“Small- Scale Mining”	To develop the small- scale mining sub-sector Government will undertake the following measures: a) “Motivate and support the use of suitable, inexpensive and safe technology. This will be through increasing its encouragement for the gathering and distribution of knowledge about suitable technology, the availability of extension services as well as

	technology demonstrations". b) Build capacity in Regional Mining offices to enhance their service delivery; c) Collaborate with associations for the small scale mining operators". e) "Make the system of information flow for the mining sector better, especially for ASM and the rural population, in order to sensitise and create awareness on the opportunities present and the regulations governing the sector; and f) Facilitate small scale miners' access to finance to ensure advancement of this area".
Citizen Economic Empowerment, Mining Sector	In order to promote economic empowerment for Zambians in the mining sector, Government will: a) "encourage mining companies to float their shares on the Lusaka Stock Exchange; b) promote Zambian ownership of large scale mines through the Citizen Economic Empowerment Act; and c) Review legislation in order to reserve certain categories of mining rights and minerals for Zambians d) Reserve a portion of the mineral royalty for the development of businesses in mining communities".
Integrating the mining sector in the domestic economy	To enhance relevance of the mineral resources sector economically, Government will: a) "Encourage the development of mining clusters to connect the mining industry to the rest of the economy". b) Promote linkages between mining and agriculture, mining and tourism, and also mining for the

	processing industry that adds value". e) "Make provisions in the law to compel mining companies give preference to Zambian products, local contractors and services and to employ and train Zambians".
Value Addition	Government to promote and make sure of the development of downstream processing capacities for minerals by: a) "Providing an appropriate legal and fiscal regime; b) Exploring opportunities to expand the local metallurgical plant capacity in the country; and c) Identifying the potential markets for products that have value added".
Gemstones Marketing	"To ensure realisation of the full value of gemstones, Government will devise mechanisms of auctioning gemstones within the country".
Research and Development (R & D)	"The Government will facilitate research and development in the mining sector and encourage industry to participate by creating the necessary conditions for research and development. The Government will encourage partnerships between mining companies and learning institutions".
Regional and international co-operation	"Government to find out about and to participate in various local and regional strategies and programmes that lead to the progression of the mineral resources industry. Government will also jointly work with other nations, with businesses and global entities to face hindrances and take advantage of opportunities in this industry."

Transparency and accountability in mineral resources management	"To promote transparency and accountability in the mining sector there will be promotion of good governance principles by developing appropriate laws and initiatives. In addition, the government will subscribe to global initiatives relevant to this area that promote transparency".

Source: Source: Mineral Resources Development Policy of Zambia (2013)

6.3.3 DISCUSSION: THROUGH THE "EYE" OF SUSTAINABLE DEVELOPMENT - Economic

The economic pillar of this policy is very strong as shown in Table 6.3. It includes the issue of artisanal and small scale miners (ASM), which is highly commendable as Zambia has approximately thirty thousand artisanal and small scale miners (Buxton, 2013). Other issues included as shown on Table 6.3 are those of citizen economic empowerment, value addition, marketing of gemstones, research and development as well as regional and international cooperation. The layout is clear and simple.

6.3.4 Other Issues

Policy measures and strategies are also given aimed at strengthening the mining rights administration, the legal framework, as well as the institutional framework. Accountability and transparency in the management of the mineral resources will be achieved by Government promoting good governance principles.

6.4 CONCLUSION

The environmental pillar of the “Mineral Resources Development Policy”, 2013 of Zambia needs to be strengthened. Key environmental issues are not recognized, acknowledged or addressed within the mineral policy document. However it is important to note that, many countries in Southern Africa including Zambia have National Conservation Strategies and National Environmental Action Plans (Mining, Minerals & Sustainable Development Project. Southern Africa, 2002).

The economic pillar and the social pillar are very strong as shown in Tables 6.2 and 6.3 respectively. This policy has a strong bias towards socio-economic development, but at the risk of unabated environmental degradation.

CHAPTER SEVEN: COMPARATIVE ANALYSIS, DISCUSSION AND CONCLUSION

7.1 Comparative Analysis of Sustainable Development Pillars: Mineral Policies of Namibia, Tanzania, Malawi and Zambia

This comparative analysis is for the four countries with their Mineral Policies under study. It is a qualitative analysis founded upon factors identified and outlined in Chapter Two in this Research write up. These factors are requirements that enable a southern African mineral policy document to be oriented towards sustainable development. These are hereafter referred to as the “required components”. Tables are utilized to summarise and display the information in a manner that enables easy comparison between the countries under study for the environmental, social and economic pillars.

The left hand side of each particular table lists the “required components” for each pillar. These particular social, environmental and economic factors ensure that mineral policy documents in southern Africa are oriented towards sustainable development. These components are general in nature, thus, should be addressed in all southern Africa mineral policy documents in addition to other peculiar national issues. The comparative analysis is done for the environmental (Table 7.1), the social (Table 7.2) and the economic (Table 7.3) pillar.

The information used to derive Table 7.1 is from “Table 3.1, Table 4.1, Table 5.1 and Table 6.1”. The information utilised to derive Table 7.2 is from “Table 3.2, Table 4.2, Table 5.2 and Table 6.2”. The information use to derive Table 7.3 is from information from “Table 3.3, Table 4.3, Table 5.3 and Table 6.3”.

Table 7.1: Environmental Pillar

	NAMIBIA	TANZANIA	MALAWI	ZAMBIA
Environmental Impact Assessment	No (but, may be included within Environmental Management)	No	Yes	No
Mine Closure Plans	Yes	Yes	Yes	No
Waste Management	Yes	No	No	No
Environmental Rehabilitation	Yes	Yes	No	Yes (for protected areas)
Other Areas included	1)Small scale miners 2)Protected Areas 3)Marine Exploration and Mining	"small scale miners"	1) "Artisanal and small scale miners" 2)Environmental Bond	1) "Small scale mining" 2)Environmental Protection Fund
Positives	1)Stakeholders involved in rehabilitation 2)Detailed and comprehensive		1)Environmental Management is a key theme in the policy	

			2)Artisanal miners considered in addition to small scale miners 3)Implementation Plan, Monitoring and Evaluation Plan included	
Negatives		Very limited consideration given to environmental issues.	No mention of waste management in an otherwise detailed policy	Major environmental issues not identified or mentioned
Compliance Score	3 out of 4 (75%)	2 out of 4 (50%)	2 out of 4 (50%)	1 out of 4 (25%)

Table 7.2: Social Pillar

	NAMIBIA	TANZANIA	MALAWI	ZAMBIA
Social Impact Assessment	No	No	No	Yes (social sustainability plans)
Gender	Yes	Yes	Yes	Yes
Occupational Health and safety	Yes	Yes	Yes	Yes
HIV and AIDS	Yes	Yes	Yes	Yes
Local Community	No	Yes	No	Yes
Corporate Social Responsibility by Mines	Yes	Yes	Yes	Yes
Training and Skills Development	Yes	Yes	Yes	Yes
Resettlement and Compensation	Yes	Yes	Yes	No
Other Areas included	Coordinated land use and development	Child Labour	Child Labour	Small Scale Mining
Positives	Detailed	Comprehensive and detailed	1)Detailed 2)ASM dealt with	Simple and clear Layout of issues

Negatives	The issue of local community is not dealt with.	.	The issue of local community in the vicinity of the mine is not dealt with.	No mention of Resettlement and Compensation
Compliance Score	6 out of 8 (75%)	7 out of 8 (87.5%)	6 out of 8 (75%)	7 out of 8 (87.5%)

Table 7.3: Economic Pillar

	NAMIBIA	**TANZANIA**	**MALAWI**	**ZAMBIA**
Value Addition, Research and Development	Yes	Yes	Yes	Yes
Linkages	No	Yes	No	Yes
"Artisanal and Small-scale Mining"	Yes, partially (only "small scale mining")	Yes, partially (only small scale miners)	Yes	Yes
Black Empowerment/ Affirmative Action	Yes	Yes	Yes	Yes
Regional Integration	Yes	Yes	Yes	Yes

Other Areas included	• Corruption • Remote area incentives		ASM	ASM
Positives	Detailed	Comprehensive and detailed	1)Comprehensive and detailed 2)Full consideration of ASM	1)Simple and clear layout 2)Full consideration given to artisanal as well as small scale miners
Negatives	1) Artisanal mining is mentioned in brief introduction but specifically not dealt with further. Only small scale mining is acknowledged its issues addressed. 2)Linkages not addressed	No consideration/ policy statements regarding artisanal miners.	No mention of Linkages	

Compliance Score	3 ½ out 5 (70%)	4 ½ out of 5 (90%)	4 out of 5 (80%)	5 out of 5 (100%)

7.2 Quantitative Analysis Representation of Mineral Policy Pillars Using Compliance Scores

For the purpose of clearer comparison in this study, a simple method was devised to enable quantitative analysis using compliance. The compliance to the environmental, social and economic components identified in Chapter Two and displayed in "Table 7.1, Table 7.2 and Table 7.3" is the basis of this analysis. A compliance score is calculated for each of the four countries under study, for each one of the three pillars. The information required to do this is obtained from "Table 7.1, Table 7.2 and Table 7.3". To calculate compliance scores, a single point is allocated for each required issue addressed in the particular mineral policy. No points are given for a required issue not addressed or mentioned at all. For partially addressed required issues, half a point is allocated only, but, where relatively sufficient detail was given though the issue might not have been extensively addressed, a full point is allocated. Thus for each pillar a "yes" represents a point. A "no", has no points and a partially covered issue might represent a full or half point depending, as explained above. The total marks for each pillar, are the total number of required components in that pillar. For each of the three pillars, the total points are added and recorded as the compliance score at the bottom row of each table. These points scored were then converted to percentages. Table 7.4 represents these percentage scores separately and clearly.

The bar chart, Figure 7.1 is a representation of these percentage scores shown in Table 7.4. It thus displays the strength of each of the three pillars of the mineral policies for Namibia, Tanzania, Malawi and Zambia.

Table 7.4: Quantitative Compliance Scores for Namibia, Tanzania, Malawi and Zambia

	NAMIBIA	TANZANIA	MALAWI	ZAMBIA
Economic Pillar	70%	90%	80%	100%
Social Pillar	75%	87.5%	75%	87.5%
Environmental Pillar	75%	50%	50%	25%

Source: “Table 7.1, Table 7.2 and Table 7.3”.

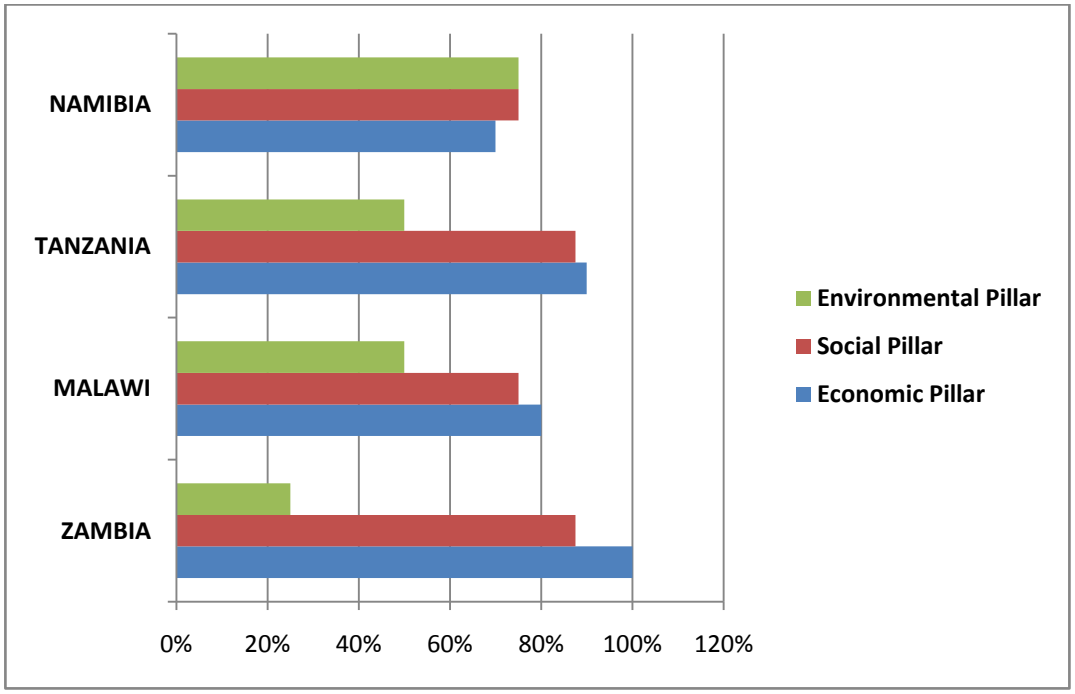


Figure 7.1: Pillar Bar Chart for Namibia, Tanzania, Malawi and Zambia

7.3 Discussion

7.3.1 Compliance Based Comparative Analysis: Environment

The Minerals Policy of Namibia, (2003) has the strongest environmental pillar of the four nations as clearly seen in Figure 7.1. It fully addresses the issues of waste management, mine closure plans and environmental rehabilitation. Other issues are also addressed peculiar to the country like protected areas. The issue however of environmental impact assessments (EIA's) is not addressed specifically anywhere in the document.

The Mineral Policy of Tanzania, (2009) also makes no mention of environmental impact assessments (EIA's). It in addition does not address waste management as shown in Table 7.1. Of the four required environmental components only mine closure plans and environmental rehabilitation are addressed. This mineral policy has a relatively weak, marginally acceptable pillar for the environment as displayed in Table 7.4 and Figure 7.1.

The environmental pillar for the Mines and Minerals Policy of Malawi, (2013) is also of the same strength as that of Tanzania as shown in Table 7.4 and Figure 7.1. It is relatively weak and marginally acceptable. The required components that are addressed are the mine closure plans and the environmental impact assessment (EIA) as shown in Table 7.1. No mention is made of waste management and environmental rehabilitation. This Policy however addresses the challenge of artisanal and small scale miners which is highly commendable.

The Mineral Resources Development Policy, (2013) of Zambia has a relatively very weak environmental pillar. Only one of the required

components is addressed, environmental rehabilitation. Even so, it is only addressed regarding protected areas only.

7.3.2 Compliance Based Comparative Analysis: Social

All the social pillars of the mineral policy documents for the four nations are relatively very strong as seen in Table 7.4 and illustrated in Figure 7.1. The social pillars for Tanzania and Zambia are the strongest relatively but the pillars of Namibia and Malawi are of relatively similar strength to these. As shown in Table 7.2, only the Mineral Resources Development Policy, (2013) of Zambia addresses the issue of the social impact assessment as it mentions social sustainability plans. Zambia, however does not address the issue of Resettlement and Compensation. Malawi and Namibia do not address the challenge of local community. Tanzania and Malawi commendably deal with their peculiar issue of child labour. The Mines and Minerals Policy of Malawi, (2013) is outstanding as it again addresses the challenge of ASM miners, this time within the social context.

7.3.3 Compliance Based Comparative Analysis: Economic

The economic pillars for all the mineral policies as shown in Table 7.3 and Table 7.4, with the exception of Namibia, have more strength than their corresponding environmental and social pillars. All of the economic pillars for all the nations are very strong. Comparing between the four nations, the Mineral Resources Development Policy, (2013) of Zambia, has the strongest and most compliant economic pillar.

The Mineral Resources Development Policy, (2013) of Zambia addresses all the required economic components in a simple and clear layout. The

challenge of “artisanal and small scale miners (ASM)” is fully addressed within this policy for Zambia and also in the Mines and Minerals Policy of Malawi, (2013). The mineral policies for Namibia and Tanzania address the challenge of small scale miners but the issue of artisanal miners is not addressed though their existence is acknowledged within the policy documents

The Mines and Minerals Policy of Malawi, (2013) and the Minerals Policy of Namibia, (2003) do not address the issue of Linkages as shown in Table 7.3.

7.4 CONCLUSION, RECOMMENDATIONS AND FURTHER STUDY

All the mineral policy documents under study possess the three pillars that are necessary to orient mineral policy in southern Africa towards sustainable development. Thus, all the mineral policies under study are oriented towards sustainable development in their different degrees.

All the mineral policies have very strong economic and social pillars. The environmental pillar however is only strong in the Minerals Policy of Namibia, (2003).

The environmental pillars of the Mines and Minerals Policy of Malawi (2013) and the Mineral Policy of Tanzania (2009) have weak, marginally acceptable environmental pillars while that for The Mineral Resources Development Policy, (2013) of Zambia is very weak and almost nonexistent. In these three policies, environmental and social considerations in this policy outweigh economic considerations especially so for the Mineral Resources Development Policy, (2013) of Zambia.

The minerals policies for Tanzania and Malawi potentially lead to strong social development and economic growth. Environmental protection and

management is inadequate. Referring to the Venn diagram of Sustainable Development in Figure 1.1, this is borderline sustainable development, almost equitable development, rather than sustainable development.

The Mineral Resources Development Policy (2013) of Zambia is strongly skewed towards social growth and economic development. It is more skewed than the mineral policies of Tanzania and Malawi. Socio-economic development will potentially be accompanied by unhindered environmental degradation.

The bar chart, Figure 7.1, displays the strength of each pillar for each nation under study. Namibia has almost equal strength pillars, thus has the most balanced mineral policy document. Then Malawi followed by Tanzania closely. The least balanced and oriented towards sustainable development is the mineral policy document for Zambia.

Social and economic pillars are commendably strong for the all the nations under study. It is recommended that the environmental pillars be strengthened by Tanzania, Malawi and especially Zambia. A weak environmental pillar results in environmental degradation. This could perhaps be abated by voluntarily CSR environmental consciousness by the mining entities. However it remains a primary role of the Government to preserve and protect the environment through policy and regulatory measures. The issue of environmental management and protection is critical for sustainable development and can never be downgraded to a voluntary CSR initiative. The environmental aspect of the minerals sector must be fully addressed in mineral policies of Southern Africa and is the responsibility of all stakeholders.

The sensitive issue of ASM was not fully addressed in the mineral policies of all the countries with the exception of Malawi. All the nations except Zambia need to add social impact assessments as a requirement, within their mineral policy documents. Namibia and Malawi must include the issue of linkages

within their mineral policies. These are vital for broad based economic growth and development.

The three pillars must ideally be of the same relative strength. This is because the environment as well as the societal and economic issues should all receive equal consideration for sustainable development to be achieved. Namibia has balanced environmental, social and economic pillars. Thus, perfectly orients the minerals sector toward sustainable development.

The Mines and Minerals Policy of Malawi has an extremely impressive layout with the extra features of the Policy Implementation Plan and the Monitoring and Evaluation Plan. The addition of these sections causes the Policy to map the way forward with clarity. This early allocation of responsibility goes a long way in ensuring effectiveness of the policy, giving the Policy credibility and increasing its chances of success significantly. The inclusion of the Monitoring and Evaluation Plan is recommended for mineral policy documents in the Southern Africa region.

Further study can be on the practical results being realized in each of the countries under current study as a result of the mineral policy documents. Indicators can be utilized to recognise, qualify and quantify expected outcomes. Additional mineral policy documents in southern Africa could be also analysed in a similar manner.

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