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THE ROLE OF MINING IN ECONOMIC DEVELOPMENT IN NAMIBIA POST-2008 GLOBAL ECONOMIC CRISIS

Walter Augusto Fernandes

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

Johannesburg, 2014

DECLARATION

I declare that this research report is my own, unaided work. It is being submitted for the degree of Master of Science in Engineering at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University.

_____

Walter Augusto Fernandes

14 October 2014

ABSTRACT

Namibia is reported to have experienced several years of moderate economic growth since the country gained independence in 1990. The economy is largely supported by the country's mining sector which provides significant revenues through foreign export earnings, foreign direct investment (FDI), taxes and royalties. In the period leading to the 2008 global economic crisis, growth in the country's mining sector started to decline due to the rapid fall in mineral commodities' prices. This did not only negatively impact growth in the mining sector, but also stifled growth in other sectors of the economy. The paper examined the role of mining and its impacts in economic development in Namibia post-2008 global economic crisis. The paper also focused on building an understanding of Namibia's key macroeconomic policies and development strategies with regards to the mining sector. Despite its impressive mineral wealth Namibia continues to grapple with many social challenges including high levels of unemployment, widespread poverty, and high income inequality. The paper sought to establish whether Namibia's mineral resources were being optimally utilized to benefit Namibians. An extensive literature review which included amongst others, national and regional development policies, National Accounts, Chamber of Mines of Namibia reports as well as online data from the World Bank Data Catalog was carried out to appraise key social and economic development indicators. The paper found that despite the country having a fully articulated minerals policy, this has not effectively supported socio-economic development. The paper established that current levels of economic growth did not necessarily translate into broad-based sustainable socio-economic development. Lack of resource diversification has been identified as a major obstacle in the way of gainful economic transformation. In particular weak linkages between mining and other sectors of the economy have limited local business opportunities and impeded industrial development. Arguably, Namibia like many African countries has failed to obtain commensurate compensation for the exploitation of its mineral resources, as well as achieve equitable wealth sharing amongst its people.

Keywords: Economic Development; Employment Creation; Empowerment; Gross Domestic Product, Macroeconomic; Minerals Policy; Mining.

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In memory of:

Joâo Augusto Fernandes

Augusto Fernandes and Maria Da Concecao Fernandes

Johannes Andreas and Anna Andreas

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LIST OF ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
AMV	Africa Mining Vision
ARVs	Antiretroviral drugs
AU	African Union
BON	Bank of Namibia
CMN	Chamber of Mines of Namibia
CMPI	Commodity Metal Price Index
DLMS	Directorate of Labour Market Services
ECA	Economic Commission for Africa
EMA	Environmental Management Act
EPL	Exclusive Prospecting Licence
ERL	Exclusive Reconnaissance Licence
ESAs	Environmental Sensitive Areas
FDI	Foreign Direct Investment
GCR	Global Competitiveness Report
GDP	Gross Domestic Product
HMPSLRFSA	Harmonization of Mining Policies, Standards, Legislative and Regulatory Frameworks in Southern Africa
HIV	Human Immunodeficiency Virus
ICMM	International Council on Mining and Metals
ICT	Information Communication Technology
IGF	Intergovernmental Forum on Mining, Minerals and Sustainable Development
ILO	International Labour Organization
IMF	International Monetary Fund
IRBM	Integrated Results Based Management
IUM	International University of Management
KRA	Key Result Areas
LOM	Life of Mine
MAWRD	Ministry of Agriculture Water and Rural Development
MCI	Mining Contribution Index
MDGs	Millennium Development Goals
MDRL	Mineral Deposit Retention Licence
MET	Ministry of Environment and Tourism
MF	Ministry of Finance
MFMR	Ministry of Fisheries and Marine Resources
MHSR	Mine Health and Safety Regulation
ML	Mining Licence
MLSW	Ministry of Labour and Social Welfare
MME	Ministry of Mines and Energy
MV	Mining Vessel
NAMPOWER	Namibian Power Company
NMDF	Namibian Minerals Development Fund
NCHE	National Council for Higher Education
NDP	National Development Plan
NEEEF	New Equitable Economic Empowerment Framework
NHIES	Namibia Household Income and Expenditure Surveys
NIMT	National Institute of Mining Technology
NLFS	Namibia Labour Force Survey
NMP	National Mineral Policy
NPC	National Planning Commission
NSA	Namibia Statistics Agency
OECD	Organization for Economic Co-operation and Development
OED	Operation Evaluation Department
PPPs	Public Private Partnerships
R&D	Research & Development
RL	Reconnaissance Licence
SADC	Southern African Development Community
SWAPO	South West African People Organization
TESEF	Transformation of Economic and Social Empowerment Framework
TIPEEG	Targeted Intervention Programme for Employment and Economic Growth
TWGs	Thematic Working Groups

tU	tonnes of uranium
UNAM	University of Namibia
UNDP	United Nations Development Programme
US	United States
VAT	Value Added Tax
VET	Vocational Education and Training
VTCs	Vocational Training Centers
WB	World Bank
WBG	World Bank Group

1 CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 NAMIBIAN ECONOMY OVERVIEW

Namibia is well endowed with vast occurrences of mineral deposits that include amongst many, diamond, uranium, manganese, fluorspar, copper, zinc, lead, gold, coal and more recently gypsum used in the production of cement. Mining, mineral processing and the eventual sale of the minerals derived from these naturally occurring resources provide significant revenues for Namibia's economy through foreign export earnings and foreign direct investment (FDI). This research investigates the role played by the mining sector in economic development in Namibia with a specific focus on how mining contributions have changed post the 2008 global economic crisis. The research investigates the major factors that contributed to these changes by analyzing data from various sources on the country's economic performance indicators. Namibia's economic growth is heavily dependent on the mining sector and the country is reported to have experienced several years of moderate economic growth (Organization for Economic Co-operation and Development (OECD), 2007: 407). The organization reported further that the moderate growth experienced was due mainly to strong performance in diamond production and prudent macroeconomic policies. This finding is also supported by data obtained from the World Bank database. **Figure 1.1** shows the moderate economic growth experienced since Namibia's independence in 1990.

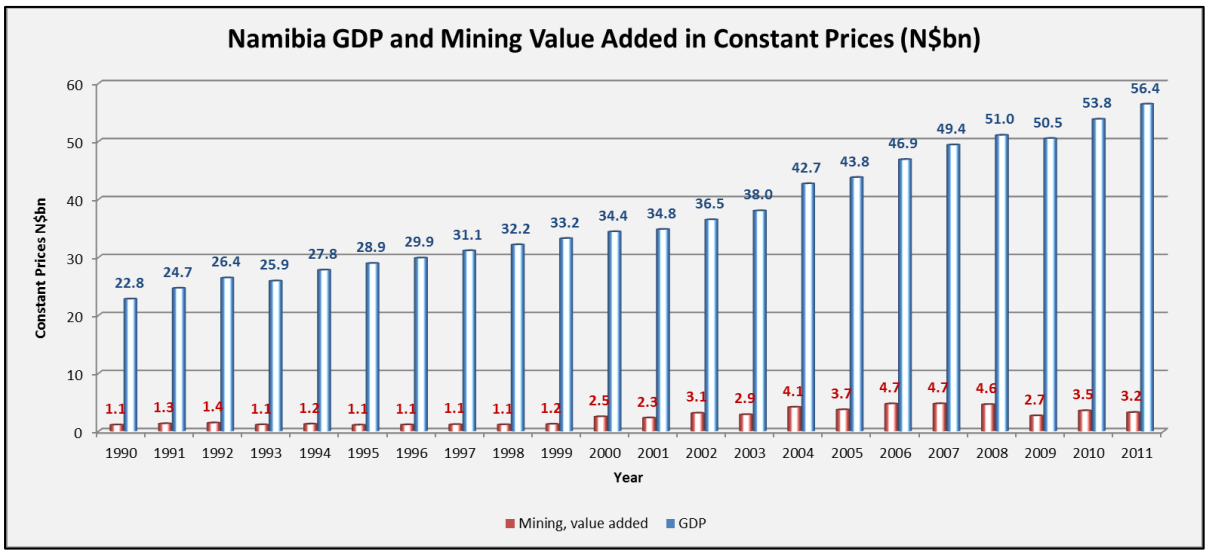

Figure 1-1: Namibia GDP and mining value added in constant prices (N$ billion) since 1990 to 2011, (Namibia Statistics Agency, 2012).

Mining as an industry contributed on average 11% per annum of the national GDP from 1990 to 2011. The highest contributions to GDP in terms of value added were recorded during 1990 (18%), 1991 (16%) and 2008 (16%), as indicated in **Figure 1.2**. The years 1990, 1991 and 2008 represented significant highlights in the global economic cycle. In the middle of the 1980s to late 1990s the period marked what was characterized as the *Emerging Countries Debt Crisis*. "The roots of the [debt] problem stem from certain developments in the 1970s compunded by the adverse developments in the early 1980s" (Krumm, 1985: 1). It is believed that several interlinked factors contributed to the cummulative effect on the debt problem faced by emerging markets on the African continent, such as Algeria, Angola, Egypt, Kenya, Moroco, Nigeria and South Africa amongst others. Krumm, (1985: 1) identifies several of these factors which include:

> "global mineral commodity price boom and bust; expanded access to sources of lending; increase in public sector borrowing; second oil shock, world recession and terms of trade deterioration; increase in inflation and interest rates; response in private and official lending; and severe drought."

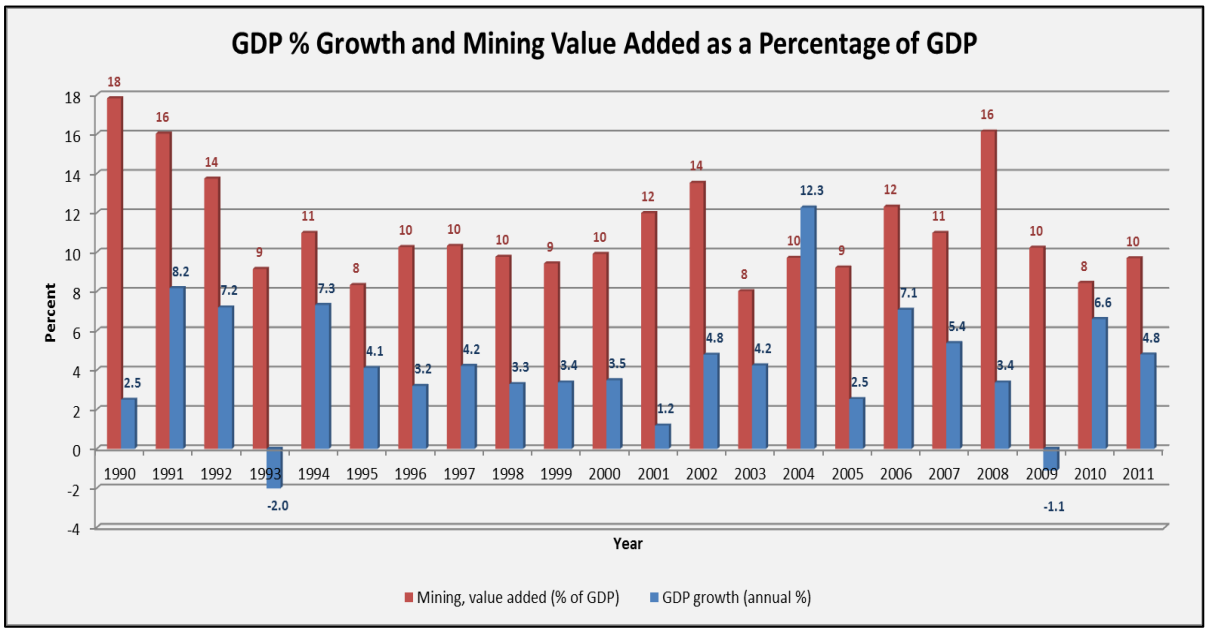

Figure 1-2: GDP percent growth per annum and mining value added as a percentage of GDP, (Namibia Statistics Agency, 2012).

Namibia's economy is relatively small but closely linked to that of South Africa. It is the author's view that global events which affected the South African economy may as a result have had a knock-on effect on Namibia's economy. The period from 1990 to 2007 in the context of this report is intended to provide a historical view of Namibia's economic performance. However, the events of particular interest in this research paper are those covering the period from 2007 to 2011 which was characterized by the global economic crisis.

The year 2007 marked a dramatic change in world market economies following the global economic crisis that ensued when struggling banks in the United States (US) and Europe cut back on lending. In 2011, the Financial Crisis Inquiry Commission was created to examine the cause of the current financial and economic crisis in the US. In its report titled *The Financial Crisis Inquiry Report (2011)*, the commission's findings amongst others concluded that "a combination of excessive borrowing, risky investments and lack of transparency put the financial system on a collision course with crisis" (The Financial Inquiry Commission, 2011). The effects of the economic crisis that started in the US and Europe soon extended to the rest of the continents.

According to the president of the Chamber of Mines of Namibia (CMN) in its 2009 annual chamber report stated that, "the effects of the world economic slowdown were quickly transmitted to Namibia's mining industry, oriented as it is on exports to many of the world's major economies" (CMN, 2008: 3). The president further explained that the diamond industry being a major contributor to Namibia's GDP in terms of value added was amongst the first economic sectors to suffer as the main US diamond market suddenly contracted following a drop in US consumer spending (CMN, 2008: 3) Diamonds unlike metals or other industrial commodities are generally regarded as luxury items and consumers will generally cut spending on such items first. The global crisis started to exert economic pressure on the country's mining sector as early as the 2nd quarter of 2007. According to the chamber's president, by the third quarter of 2007, "copper prices had also fallen fast forcing Weatherly Mining Namibia to undertake extreme cost-cutting measures" (CMN, 2008: 3).

In 2008, the mining sector recorded a lower growth rate from 27.6% in 2006 to 0.5% in 2007 to -2.9% in 2008 and continued to fall in 2009 to -42.5% (Namibia Statistics Agency (NSA), 2012: 19). In terms of constant 2004 prices, the sector contributed N$4.6 billon (16% of GDP) in 2008, N$2.7 billon (10% of GDP) in 2009, N$3.5 billon (8% of GDP) in 2010 and N$3.2 billon (10% of GDP) in 2011 towards the country's GDP (NSA, 2012: 18). Overall, economic growth in 2011 slowed down to 4.8% from 6.6% in 2010 and this followed after the 4.5% contraction recorded in 2009. The slow economic growth rate experienced between 2007 and 2009 is thought to have been underpinned by the global economic recession, higher costs of production linked to high inflation, and significant decline in demand for diamonds. In 2010 the Namibian economy started to show signs of a rebound following increases in diamond and uranium prices and the reopening of the copper mines and smelter in 2011.

In terms of employment, Namibia faces a critical shortage of managerial and technical skills needed in the mining sector. The sector continues to invest in education and training of students and entrepreneurs at various levels as a way to develop, attract and retain skills within the industry. Although the ongoing efforts are commendable, a lot more remains to be done in terms of the share of resources needed to develop the much needed skills. Compounding the problem of skills shortage is inadequate investments into infrastructure development, and Research and Development (R&D). The NLFS of 2012 reported that the country has been confronted with a high unemployment rate of 51.2% in 2008 and 27.4% in 2012 (NSA, 2013: 2). The same survey showed that the mining sector employed less than 2% of the total employed population in 2012 (NSA, 2013: 9).

R&D is an integral part of any country's economic development model. Robust policies, legal and regulatory frameworks are essential to support, guide and ensure proper administration of R&D strategies. According to Fernandes (2012), in order for a country to be able to compete in the global arena, it needs to consider expenditure on R&D. He further stated that although many African countries are endowed with rich mineral deposits, only a few have managed to translate the mineral wealth into real economic development by investing into R&D. Namibia is no exception and similarly has shown little success in terms of transforming from a resource-based

economy (or simply resource economy) to a knowledge-based economy (or simply knowledge economy). Powell & Snellman, (2004: 199) define knowledge economy as:

> "production and services based on knowledge-intensive activities that contribute to an accelerated pace of technical and scientific advance, as well as rapid obsolescence. The key component of a knowledge economy is a greater reliance on intellectual capabilities than on physical inputs or natural resources".

The Organisation for Economic Co-operation and Development (OECD) defines knowledge-based economy as: the economy of a country which is directly based on the production, distribution and use of knowledge and information (OECD, 1996: 7). In contradiction a resource-based economy can be described as the economy of a country which is directly or to a large extent based on the extraction of natural resources.

Countries that have successfully managed to transform their economies from resource-based to knowledge-based economies include Sweden, Finland and Singapore and are underpinned by substantial expenditure on R&D. R&D creates new opportunities to develop diversified industries which consequently reduce the dependence on mineral resources alone, (Fernandes, 2012).

Namibia's mining industry is regulated by the Diamond Act, 1999; the Minerals (Prospecting and Mining) Act, 1992; and the Minerals Development Fund of Namibia Act of 1996. The petroleum sector is governed by the Petroleum (Exploration and Production) Act, 1991; the Petroleum (Taxation) Act, 1991; the Petroleum (Exploration and Production) Amendment Act, 1993; the Petroleum Laws Amendment Act, 1998; the Petroleum Products and Energy Amendment Act, 2000. Section 24, subsections (b) (ii) of the Diamond Act, deals with aspects related to the economy. It provides that with due regard to efficiency, economy and practicability, preference be given to the procurement of products, materials or equipment

manufactured or produced in Namibia. The Minerals Act[1] under Section 114 - Royalties payable on minerals – subsection (1) makes provision:

> "that the holder of a mining claim, a mining licence, any non-exclusive prospecting licence, exclusive prospecting licence or mineral deposit retention licence who has found or incidentally won in the course of any prospecting or mining operations carried on by him or her, any mineral or group of minerals shall be liable to pay to the Commissioner for the benefit of the State Revenue Fund a royalty" (Republic of Namibia, 1992: 162).

The provision of the Act cited above provides some indication in as far as how prospecting and mining activities should contribute to Namibia's economy - by implication redistribution of national wealth through the State. The reality however is that Namibia's unequal income distribution remains amongst the highest in the world despite a high per capita GDP. While the country's mining sector accounts for roughly only 11% of the economy, it holds huge potential for accelerated economic transformation and growth. This is in part due to the fact the country is endowed with abundant mineral resources and the full potential is largely still untapped. The comparative resource advantage coupled with optimized resource sector linkages will place the country on an accelerated trajectory towards industrialization.

1.2 SECTORS OF THE ECONOMY

Namibia's economy is supported by three main sectors of production, namely: primary, secondary and tertiary. The primary sector of the economy is concerned with the extraction and production of raw materials such as minerals (metallic or non-metallic), wood, animal and fish products amongst others from the earth. It is made up of mining and quarrying, agriculture, forestry, farming and fishing. The packaging and processing of the raw material associated with this sector is also considered to be part of this sector. The secondary sector also known as the industrial sector, involves the transformation of raw or intermediate materials into finished goods or products. It is made up of manufacturing, construction and electricity generation. The

[1] Minerals (Prospecting and Mining) Act, 1992 (Act 33 of 1992).

tertiary sector or service sector consists of: wholesale and retail trade, repairs; hotels and restaurants; transport and communication; financial intermediation; real estate and business services; community, social and personal service activities; public administration and defence; education; health; and private household with employed persons. It provides services to the general population and to businesses. The tertiary sector accounts for the largest financial contribution to the GDP. The sector accounted for an estimated 55% of GDP per annum from 2000 to 2011. Its contribution to the economy is considerable, primarily because of the fact that the sector is made up of many different industries (eleven industries in total). **Figure 1.3** shows the various industry contributions to the GDP from 2000 to 2011.

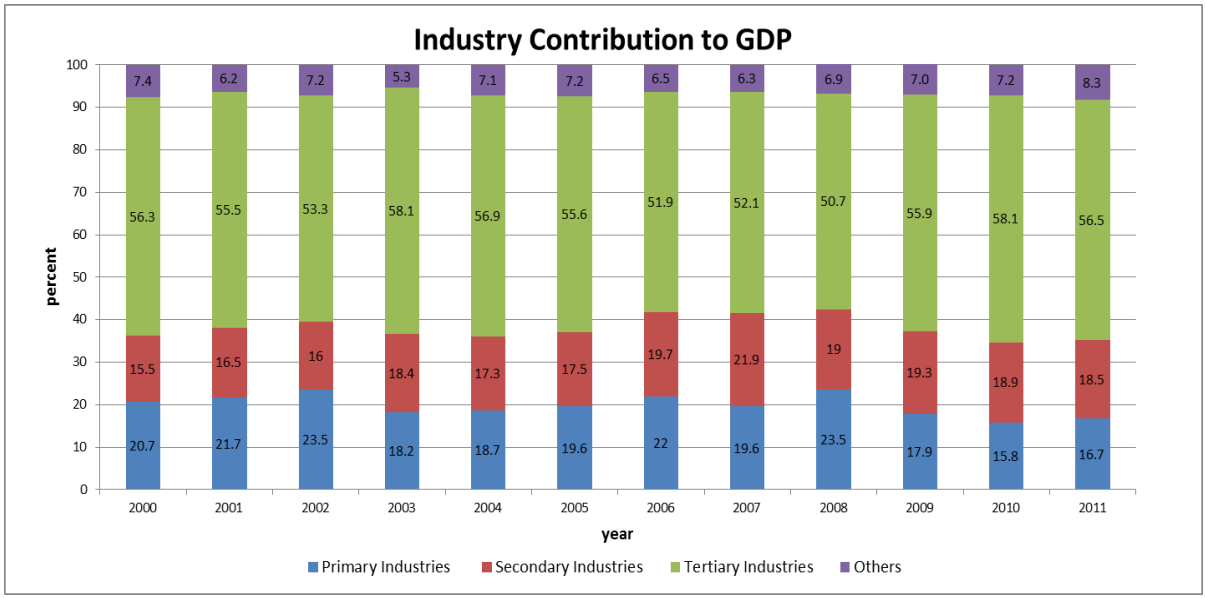

Figure 1-3: Industry contribution to GDP from 2000 to 2011, (Namibia Statistics Agency, 2012).

The secondary and primary sectors accounted on average for 18% and 20% of GDP per annum respectively, from 2000 to 2011. While these figures represent a significant percentage contribution to GDP, the country continues to be a net importer of goods and services due to its relatively small manufacturing base. According to the 2000-2011 National Accounts report, the value of imported goods and services stood at N$ 42 379 million in 2011 compared to N$ 39 306 million recorded in 2010 (NSA, 2012: 13). The report indicated further that “the main products which contributed to the total imports of goods for 2011 were the transport equipment and chemical products, rubber and plastic products” (NSA, 2012: 13).

The secondary sector is important to the economy in that it adds value to the output of raw material from the primary sector. It manufactures finished products that can either be exported or sold locally thereby supporting economic growth and diversification. The sector is an important source of capital for the tertiary sector which is service oriented. While the country's secondary and tertiary (service) sectors hold huge potential for economic development, they still remain relatively small, under-developed and inadequately diversified. The export of goods and services accounted for an average of 45.0% of the government's expenditure on GDP between 2000 and 2011, while import of goods and services accounted for an average of 48.9% over the same period (NSA, 2012: 20).

The primary sector is an important sector of the economy especially to low and middle income economies such as Namibia. This is because developing economies generally need to rely on their natural resource in order to establish and grow other sectors of the economy. It is for this reason that the primary sector, underpinned by natural resources, is important in the transformation and sustainable development of Namibia's economy. However, this requires a healthy balance between the value of exports and imports in the economy. That is, where both the value of exports and imports are growing, but more importantly where the economy sustains a trade surplus instead of a trade deficit. Due to the country's abundant mineral resources, the mining industry holds great potential that could boost the country's economic growth and pave the way for accelerated development. The country relies heavily on its mineral sector to develop the secondary and tertiary sectors of the economy which are still in their infancy. The country's Vision 2030 target is for the manufacturing and services sectors to contribute 80% towards GDP.

The *Other* category of the economy covers "taxes less subsidies on profits", minus financial intermediation services indirectly measured. The taxes consist mainly of taxes on international trade under the ambit of the Southern African Customs Union (SACU).

1.3 RATIONALE OF THE STUDY

Namibia is a resource-based economy and as such relies heavily on GDP generated through mining activities to manage and develop the country. There are several active mines in the country, many of which have remaining life of mine (LOM) of more than 5 years, for example Namdeb Diamond Corporation, Langer Heinrich, Rössing Uranium, Navachab, Rosh Pinah and Okorusu to mention a few. **Figure 1.4** shows the life of mine of several mines in Namibia. In addition, new mines continue to come online as new mineral deposits are discovered while others increase production as mineral commodity prices continue to recover following improvements in major global markets. Some of the recent mines to come into production include Langer Heinrich's Uranium mine and Weatherly Mining Namibia, which took over copper and pyrite mining operations from Ongopolo Mining and Processing in and around Tsumeb.

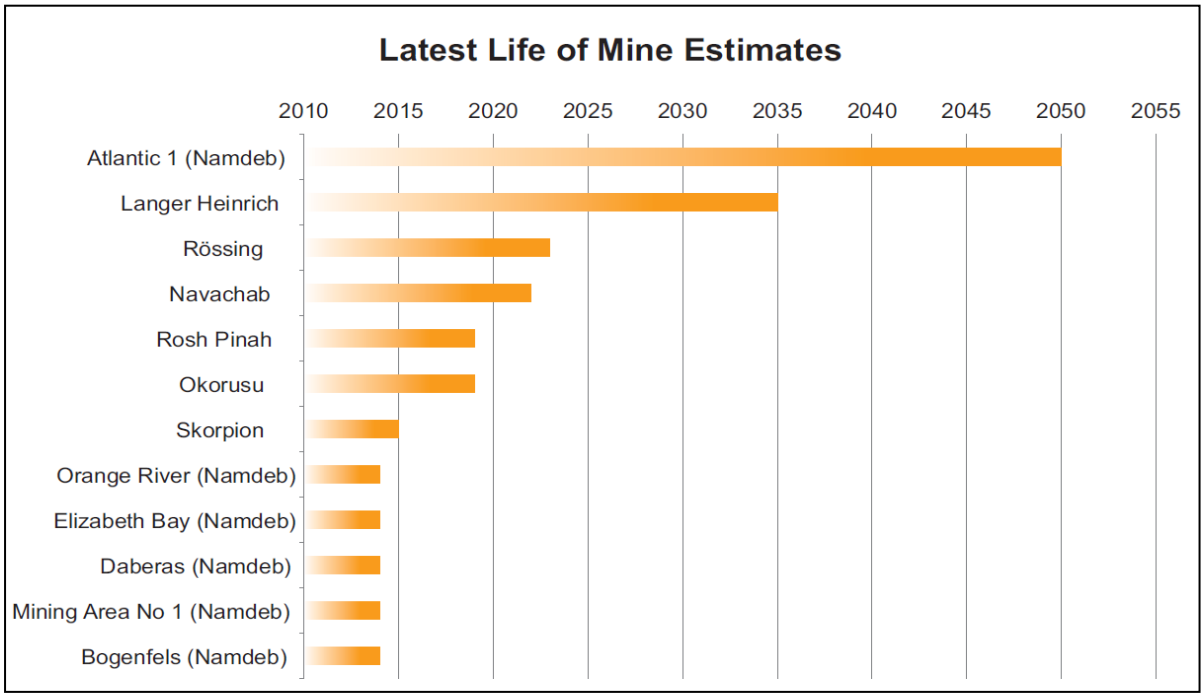

Figure 1-4: Namibia's latest life of mine estimates, (Chamber of Mines of Namibia, 2011).

Mining accounts on average for 11% of GDP, and provides between 45-50% of foreign exchange earnings (NSA, 2012: 20). The main minerals are gem-quality diamonds, uranium, zinc and gold amongst other minerals. Namibia was ranked the world's fifth-largest producer of uranium in 2012 with 7.5% of the world's total

uranium production (World Nuclear Association, 2014). “Kazakhstan produced the largest share of uranium (36.5% of world supply from mines in 2012), followed by Canada (15%), Australia (12%) and Niger (8%)” (World Nuclear Association, 2014). The Rössing Uranium mine owned by Rio Tinto and which has been in operation since 1976 (Dasnois, 2012: 5), was ranked 6th amongst the largest-producing uranium mines in 2012 in terms of uranium tonnes (World Nuclear Association, 2014). There is little doubt that Namibia’s economic growth will continue to be driven by the mining sector in the foreseeable future. It is with this view that this report reviews the important role played by the mining sector in the development of Namibia’s economy.

The significance of this research is based on the following reasons:

- There is evidence that Namibia’s economy is and continues to be heavily dependent on mining. This statement is supported by findings from Dasnois (2012: 6) who states that:

  > “In Africa, Namibia’s potential as a global supplier of uranium is the most significant, at 8% of world production: its two operating mines – Rössing and Langer Heinrich – between them could provide 10% of global output. In the decade ending in 2010 uranium production in Namibia increased by 60% (from 2 714 tU to 4 496 tU) with an estimated 284 200tU in reserve, making up 4.5% of the world total”;

- There is evidence that despite its several years of moderate economic growth Namibia has amongst the highest unequal income distribution in the world. This is evidenced by the fact that the country’s high Gini coefficient which stood at 0.58 at the end of the NDP3 period (National Planning Commission (NPC), 2013: 9), still remains high;

- There is evidence that despite its several years of moderate economic growth Namibia has been unable to create enough jobs in order to significantly reduce unemployment. This is evidenced by the fact that the rate of unemployment remains relatively high at 27.4% in 2012 (NSA, 2013: 2);

- Despite its impressive economic growth before the crisis, due mainly to exceptional performance in the minerals industry, it faces daunting social challenges including high rates of rural poverty (of about 42 percent) and a serious HIV/AIDS epidemic (OECD, 2007: 407);

- There is general sentiment that the mining industry makes huge profits for foreign shareholders and leaves very little for Namibians; or that mining companies are stealing the nation's wealth;

- The mining sector undertook a number of operational and organizational changes before and during the global economic crisis, some of which had and continue to have a direct impact on the national economy;

- Investigating the changes undertaken by the mining sector and examining trends within the sector with regards to economic development will help contextualize and provide a perspective on the implications emanating from the changes;

- The current legislation and policy framework in place does not adequately address the socio-economic situation of the country;

- Namibia's development strategies must focus on creating new opportunities to develop diversified industries which consequently reduce the dependence on mineral resources; and

- In terms of relevant academic research work with respect to the topic, there is inadequate literature available in the public domain. This research work is intended to contribute to the broad understanding of the role mining plays in Namibia's economic development.

1.4 RESEARCH PROBLEM STATEMENT

Article 100 of the Constitution of the Republic of Namibian [Sovereign Ownership of Natural Resources] provides that land, water and natural resources below and above

the surface of the land and in the continental shelf and within the territorial waters and the exclusive economic zone of Namibia shall belong to the State if they are not otherwise lawfully owned. While sovereign ownership of natural resources belong to the State and is protected by the constitution, government as an institution of the State in general does not directly undertake exploration or mining activity. Instead, the government acts as a regulatory body of the State allowing companies to explore and eventually mine the natural resources in exchange for benefits to the country. The bulk of the benefits accruing from mining is generally of an economic nature and includes: foreign direct investments (FDI), foreign exchange earnings, taxes and royalties. Other benefits are of a social nature and include: employment creation, poverty reduction, human resource development and infrastructure development. Whereas others are technical in form and include: R&D, technology transfer and skills transfers.

The research is interested in establishing whether the extraction and sale of Namibia's mineral resources have benefited the country's economic development post the 2008 global economic crisis. It is thought that due to the country's relatively abundant mineral resources, "limited manufacturing base and a small domestic market, Namibia's [economy] is heavily dependent on the primary industries (mining, agriculture and fishing) for the generation of foreign exchange needed to purchase manufactured, capital and intermediate goods from the international market" (United Nations Development Programme (UNDP), 2010: 5). Based on the latest annual national accounts figures, the mining sector accounted for the largest percentage contribution (9.5%) towards GDP within the primary industry, followed by the agriculture and fishing sectors with 4.2% and 3% respectively, during 2011 (NSA, 2012: 12). This means that economic development of the country is highly dependent on the activities taking place in the mining sector and this also includes the economic recession. "This has raised fears amongst many Namibians that the global financial crisis and its likely impact on the economy will have an adverse effect on the well-being of the most disadvantaged and vulnerable members of society" (UNDP, 2010).

1.5 RESEARCH OBJECTIVES AND QUESTIONS

- Build an understanding of Namibia's macroeconomic policies and development strategies with regards to mining.
    - What is Namibia's development strategy with respect to mining?

- Build an understanding of the role played by the mining sector with respect to economic development in Namibia post the 2008 global economic crisis.
    - What role did the mining sector play towards economic development in Namibia post the 2008 global economic crisis?

- Determine to what extent the mining sector has contributed towards Namibia's economic development.
    - To what extent did the mining sector contribute towards Namibia's economic development subsequent to the economic crisis?

- Establish whether Namibia's mineral resources are being extensively utilized to benefit the Namibian population.
    - Are Namibia's mineral resources being utilized to broadly benefit the Namibian population?

- Establish whether the extraction and sale of Namibia's mineral resources have benefitted the country's economic development post the 2008 global economic crisis.
    - Has the extraction and sale of Namibia's mineral resources benefitted the country's economic development post the 2008 global economic crisis?

1.6 LIMITATIONS OF THE STUDY

Two major limitations were identified. The first limitation was the challenge to find adequate academic research papers on the subject topic, in particular those that read with relevance to the Namibian context. The second limitation is related to how datasets on Namibia's Accounts are managed by the Namibia Statistics Agency

(NSA). While the bulk of the data from the National Accounts is published as PDF files on the NSA website, the actual datasets themselves are not readily accessible. Where datasets (mainly from 2011 to 2012) on economic indicators were available as downloadable excel spreadsheets, these contained data covering only one quarter of the year. It therefore meant that a comprehensive data validation and exploratory data analysis could not be conducted using the datasets available from NSA website. In order to overcome this challenge, the researcher had to create excel spreadsheet tables using data reported in the 2000-2011 National Accounts report. These data tables were supplemented with data from other database sources from which other relevant data could be obtained. One such useful data source is the online World Bank Data Catalog which provides download access to over 8 000 socio-economic, political and environmental indicators. The catalog allows for large datasets containing several indicators over a period of time (time series) to be downloaded for over 200 countries.

1.7 OUTLINE OF THE REMINDER OF THE RESEARCH REPORT

Section 1.8 outlines the scope and the structure of the study for the remainder of this this report. The schematic flow of the research report is presented in **Figure 1.5**.

CHAPTER 1 - Introduction and Background
The introduction and background chapter provides an overview of Namibia's economy. It commences with a discussion on the historical economic growth trends in the Namibia economy since the country's Independence in 1990 to 2011. The chapter sets out the rational of the study and provides a list of significant issues on which the research has been based on. The research problem statement, research objectives and questions are also outlined in this chapter. The chapter furthermore provides a brief discussion on the limitations of the study before concluding with a summary table outlining the structure of the reminder of the research report.

CHAPTER 2 - Literature Review
The chapter focuses on Namibia's macroeconomic policies and development strategies. The discussion commences with an overview introduction of the country's developmental vision, Vision 2030. This is the nation's Policy Framework for Long-Term National Development document. It describes the objectives of the policy and sets out how these objectives are to be achieved. In the chapter, the medium-term five-year National Development Plan 3 (NDP3) is specifically discussed at length because its period coincides with that of the study period under investigation - that is, post 2008. NDP3 covers the period from 2007/2008 to 2011/2012. The chapter also provides an important discussion on the country's mineral policy before closing the chapter with a conclusion.

CHAPTER 3 - The Role of Mining
The chapter looks at the role played by the mining sector in the development of Namibia's economy. The chapter begins by taking a look at views from various authors on the significance of the mining sector with respect to the development of national economies. A detailed discussion of this sector's role in the Namibian economy then follows. The roles are discussed under four main themes: revenue generation - stimulating and promoting economic development; socio-economic development - employment creation; socio-economic development - human resources; and research, development and technology. The chapter then closes with concluding remarks as with the previous chapter.

CHAPTER 4 - Data Analysis and Discussion of Results
Chapter four provides an analysis and discussion of the macroeconomic benefits that accrue from the mining sector towards the national economy. It begins with an in-depth discussion of the country's macroeconomic development policies, with a special focus on: economic opportunities and local empowerment; mining sector licensing framework; and taxation. The mining sector's contribution to the GDP and how this contribution to the economy has been affected by the recent global economic and financial crisis is also examined. The chapter pays special attention to two primary sources of revenue to the economy, namely: export earnings and foreign direct investments. The effects of mining on employment creation and poverty reduction as well as the effects of mining on the environment are discussed in great detail before concluding with a brief summary of the chapter.

CHAPTER 5 – Conclusion and Recommendation
Chapter 5 is a summary of the major findings of the study. It also provides recommendations on various issues pertaining to the findings of the study.

Figure 1-5: Schematic outline of the research report.

2 CHAPTER TWO: LITERATURE REVIEW

2.1 MACROECONOMIC POLICIES AND DEVELOPMENT STRATEGIES

2.1.1 NAMIBIA VISION 2030 - OVERVIEW

Namibia's vision for development is embodied in Namibia's Vision 2030 – Policy Framework for Long-Term National Development document. At the heart of Vision 2030 is the goal to improve the quality of life of the people of Namibia to the level of their counterparts in the developed world, by the year 2030. The national goal is driven by the aspiration of its people, all working together in harmony and utilizing their available resources towards achieving a prosperous and industrialized Namibia by 2030.

The policy document provides a comprehensive framework through which the country's political and economic landscape can be transformed. In particular in areas of land reform, housing, the environment, health, education and economic development that provides equal opportunities for all. In addition to setting out key focus areas for transformation, the document also sets out the key development challenges for the government. These include amongst others, human resource development, job creation, provision of infrastructure, changes in patterns of ownership of the economy and the reduction in income inequality and poverty in the Namibian society (National Planning Commission, 2004).

In order to achieve the bold national objectives, the government adopted a development strategy. The strategy consists of seven 5-year term development plans, beginning with the first National Development Plan (NDP1) for the period 1995/1996 – 2000/2001; and ending with NDP7 in 2030. **Figure 2.1** shows a schematic diagram of how the seven NDPs tie-in with the macroeconomic policy framework, Vision 2030. The National Planning Commission (NPC) of Namibia is responsible for the policy planning process and is supported by line ministries and government agencies in the implementation process. The five-year NDPs serve as medium-term plans against which medium-term performance can be tracked. In addition, these plans have also served to assist the private sector in understanding government's economic policies and strategies.

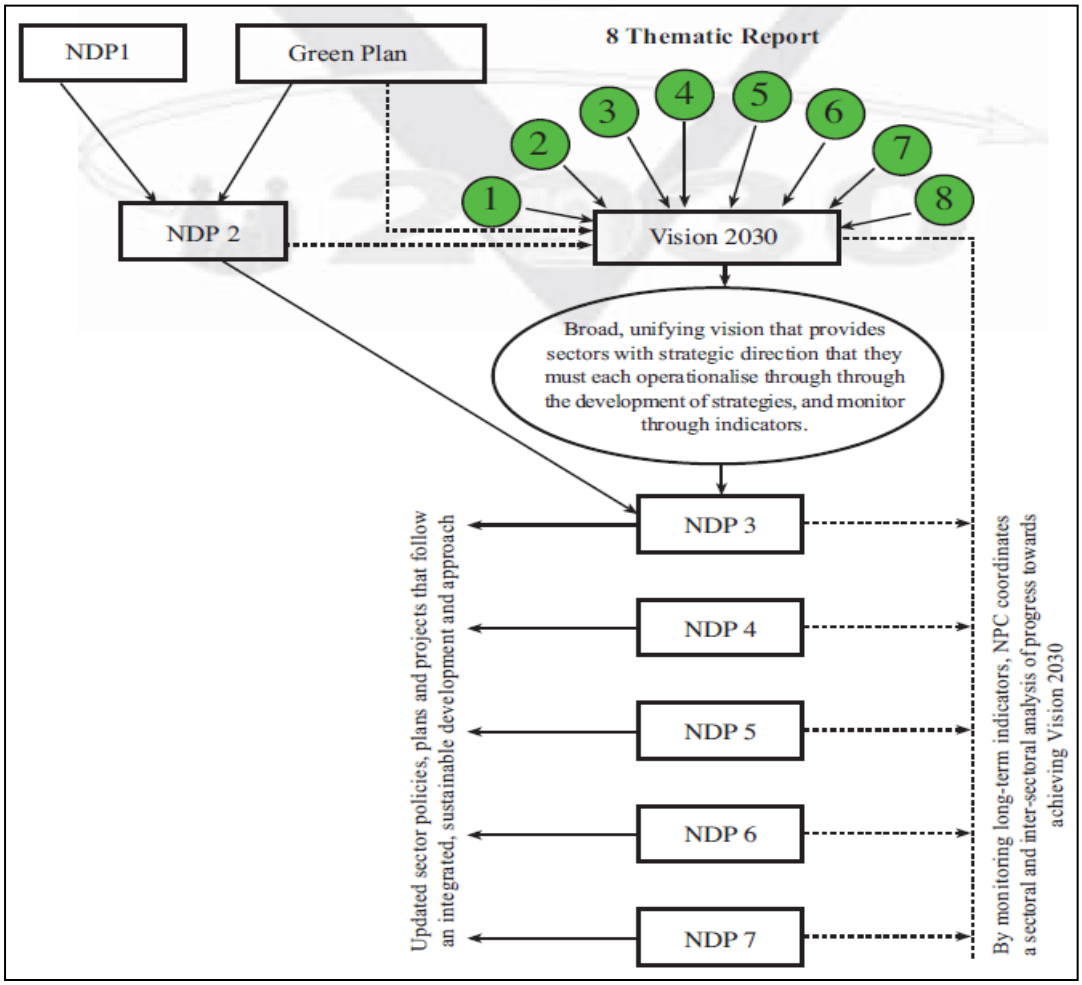

Figure 2-1: Link between Namibia's Vision 2030 the seven National Development Plans (NDPs), (National Planning Commission, 2004).

Namibia's long-term vision is formulated on information based on input from eight thematic reports (NPC, 2004: 13). The thematic reports are the Inequality and Social Welfare; Peace and Political Stability; Human Resources Development and Institutional Capacity Building; Macroeconomic Issues; Population, Health and Development; Natural Resources Sector; Knowledge, Information and Technology; and Factors of the External Environment. While each of the eight themes appears fundamental in achieving the national objective in its own right, no one theme stands alone – all eight themes are in one way or another interlinked. They all seek in a complex and integrated way to address the challenges of human resource development, unemployment and job creation, provision of infrastructure, equal access to quality education, equal access to quality health care, changes in ownership of patterns of the economy and the reduction in income inequality and poverty amongst many. While all eight themes are important to achieve the broad

national objectives, none is more important than Namibia's Natural Resources Sector when it comes to accelerated economic reform and development.

Namibia's economy is heavily dependent on the natural resources sector, in particular the minerals resource sector. It is important to state the significance of this sector with respect to economic development in the context of Vision 2030 which sets out the country's macroeconomic framework. Vision 2030 state that:

> "Namibia's mineral resources are strategically exploited and optimally beneficiated, providing equitable opportunities for all Namibians to participate in the industry, while ensuring that environmental impacts are minimized, and investments resulting from mining are made to develop other, sustainable industries and human capital for the long-term national development" (NPC, 2004: 162).

What this calls for is for Namibia's mineral resources to be purposefully and meaningfully extracted, processed and beneficiated at optimal levels. In this regard the vision seeks is to ensure that value addition of the country's mineral resources takes place locally as opposed to the general practice of simply exporting raw materials to foreign countries. It calls for equal and fair opportunities for all Namibians to participate in the industry. The mining industry has previously and to a large extent still continues to exclude participation of indigenous people in mining activities. Acknowledging the negative impacts that mining activities can have on human health and the environment, the vision seeks to further ensure that the impacts of mining are minimized. Most importantly it calls for investments resulting from mining to be used to develop other, sustainable industries and human capital for the long-term national development. This is believed to hold potential for transforming the country's economy by injecting capital into the economy and thereby stimulating growth in other sectors of development.

Namibia's vision for the country's minerals sector and the Africa Mining Vision (AMV) for the continent's minerals sector are well-aligned, in as far as resource-based development and industrialization are concerned. Core to both these visions is

ensuring equitable and optimal exploitation of mineral resources to support broad-based socio-economic development and industrialization strategies. Like Namibia, Africa's other resource-based economies need to also ensure that they develop and implement mineral resource exploitation strategies that are well and truly aligned with the continent's vision for optimal mineral resources exploitation. Africa's optimal capacity to negotiate mineral resources contracts and extract better deals can best be realized through the formulation of workable, implementation and fully integrated industrialization strategies.

2.1.2 NAMIBIA VISION 2030 – OBJECTIVES

Vision 2030 is a beacon of hope to many Namibians. Namibians have long suffered serious injustice at the hands of colonial rule. "While some legacies of colonial rule were positive, including a well-developed infrastructure and one of the best road systems in the world amongst others, the detrimental legacies were more far-reaching" (NPC, 2004: 29). Apartheid policies were deliberately designed to marginalize a majority sector of society (indigenous Namibians) while favoring a few minority groups. The policies led to highly skewed development objectives which are characterized by unequal distribution of wealth which includes land, marine and mineral resources, unequal access to quality education and health care, high income disparity and poverty to mention a few. The Namibian government under the leadership of the ruling party SWAPO has since the time of independence taken major steps towards addressing previous imbalances. This has revived the nation's aspirations which are condensed into an overall national vision, Vision 2030. The major objectives of Vision 2030 and the corresponding broad development strategies needed to support the objectives are summarized in **Table 2.1**.

Table 2-1: Namibia Vision 2030 major objectives and corresponding broad strategic elements.

Namibia Vision 2030 objectives and accompaning development strategies	**Ensure that Namibia is a fair, gender-responsive, caring and committed nation, in which all citizens are able to realize their full potential.** ~Operating a morally upright and tolerant society that is proud of its diversity. ~Promoting interpersonal harmony among all people.
	Create and consolidate a legitimate, effective and democratic political system, and an equitable, tolerant and free society. ~Upholding human rights and ensuring justice, equity and equality in the fullest sense. ~Operating a responsive and democratic government that is truly representative of the people. ~Ensuring an atmosphere of peace, security and hope for a better life for all.
	Develop a diversified, competent and highly productive human resources and institutions. ~Providing full and appropriate education at all levels. ~Achieving full and gainful employment.
	Transform Namibia into an industrialized country of equal opportunities, which is globally competitive. ~Maintaining an economy that is sustainable, efficient, flexible and competitive. ~Operating a dynamic and accessible financial sector. ~Establishing and sustaining business standards of competence and productivity. ~Maintaining a low-level, responsive bureaucracy. ~Establishing and operating a fiscal policy that distributes wealth fairly and encourages production.
	Ensure a healthy, food-secured and breastfeeding nation and in which people enjoy a high standard of living. ~Providing excellent, affordable health care for all. ~Mainstreaming HIV/AIDS into development policies, plans and programmes. ~Creating access to abundant, hygienic and healthy foods, based on food security.
	Ensure the development of Namibia's 'natural capital' and its sustainable utilization. ~ Process all natural resources and build industries in all sectors of the Namibian economy. ~Maintaining stable, productive and diverse ecosystems managed for long-term sustainability.
	Accomplish the transformation of Namibia into a knowledge-based, highly competitive, industrialised and eco-friendly nation. ~Leveraging knowledge and technology for the benefit of the people.
	Achieve stability, full regional integration and democratized international relations. ~Achieving collaboration between public, private and Civil Society organisations, in policy formulation, programming and implementation. ~Maintaining sound international policies that ensure effective cooperation, favourable trade relations, peace and security.

In summary the Namibian people through their government have set upon themselves a bold objective to fundamentally transform their political and economic landscape. Namibia plans to be an industrialized country, with a per capita income equal to that of developed countries. This grand objective is encapsulated in the Vision 2030 document which serves as a basis for planning Namibia's future. It sets out the macroeconomic framework and long-term targets through which the vision of the society is to be achieved. In order to better implement the country's long-term development plan, Vision 2030 has been subdivided into medium-term five-year NDPs. The five-year plans set out the macroeconomic growth targets as well as the size and distribution of government's development programmes. There are in total seven five-year NDPs of which NDP4 which started in 2012 is currently in place. The NDP 3 period covered the cycle starting 2007/2008 to 2011/2012. The NDP3 cycle coincided with the start of the recent 2007/2008 global economic crisis up until the time of economic recovery in 2011/2012. The following section examines in detail NDP3 which forms part of the long-term macroeconomic policy and development strategy of the country's Vision 2030.

2.2 THIRD NATIONAL DEVELOPMENT PLAN (NDP 3)

2.2.1 NDP3 DEVELOPMENT FRAMEWORK

NDP3 is another major stage for the Namibian nation on its journey towards its goal of becoming a prosperous industrialized country by 2030. It was the first systematic attempt to translate the Vision 2030 objectives into action. The policy directions for the plan were drawn from: i) the Vision 2030; ii) the 2004 SWAPO Party Election Manifesto; iii) the guidance from the 2005 Special Cabinet Retreat; iv) the Millennium Declaration and the constituent Millennium Development Goals (MDGs); and the lessons learned from implementing the Second National Development Plan (NDP2) (NPC, 2008: 3). NDP3 was based on eight Key Result Areas (KRAs) with each corresponding to one of the eight main objectives of Vision 2030: Productive and Competitive Human Resources and Institutions; Knowledge Based Economy and Technology Driven Nation; Competitive Economy; Productive Utilization of Natural Resources and Environmental Stability; Peace, Security and Political Stability; Regional and International Stability and Integration; Equality and Social Welfare; and Quality of Life. The overall theme of NDP3 was “Accelerated Economic Growth and Deepening Rural Development” (NPC, 2008: 3).

According to the NDP3 policy document, NDP3 was prepared through the broad participation of all stakeholders utilising an Integrated Results Based Management (IRBM) Approach (NPC, 2008: 3). NDP3 differed from NDP2 and NDP1 in a number of ways; first, it was based directly on the eight broad objectives of Vision 2030; second, it was formulated by ten Thematic Working Groups (TWGs) through teamwork utilising the Integrated Results Based Management (IRBM) Approach with a central focus on development results; third, it presented for the first time in Namibia, the overall resource required to implement the Plan by all State and non-State stakeholders in order to achieve the projected Plan targets; and fourth, the Plan spelled out the implementation arrangements and put in place a monitoring, reporting and evaluation arrangements to continuously monitor and report on progress in achieving the targeted results (NPC, 2008).

2.2.2 PERFORMANCE UNDER NDP3 – MACROECONOMIC INDICATORS

NDP3 projected an average real GDP growth rate of 5% per annum under the baseline growth scenario. It achieved a mere average 3.6% growth rate over the five-year NDP period and this lower than anticipated growth rate explains the subdued overall economic growth. A number of the NDP3 goals were impacted as a result of the overall lower economic growth. Real per capita income average growth rate over the NDP3 period was 1.7% against a target of 3.4%. This percentage increase translated into an average real per capita income of N$25,675 in 2011/12, or US$3,537. In terms of unemployment rate, unemployment increased to 51.2% (2008 rate) instead of the targeted decrease of 33.3% (by 2011/12). Despite the overall underperformance in terms of development indicators, the Gini coefficient[2] continued to improve from 0.60 (2003/04) to 0.58 (2009/10) over the NDP3, with the target of 0.58 being met before the end of the review period (NPC, 2013: 43).

Overall economic growth during the NDP3 period was hampered by the global financial and economic crisis, which led to a global recession in 2008. The country's small and open economy was as a result of the recession left exposed to the knock-on effects caused by its trading partners. In particular the Euro Area, which is Namibia's most important trading partner. The global economic crisis in 2008 was a major factor that contributed to the overall failure of NDP3, other factors attributable to its failure included: a lack of cooperation between implementing ministries; a general lack of human resources; and the view that most stakeholders misunderstood and misinterpreted the NDP3 document (Windhoek Observer, 2012). **Table 2.1** gives a summary of the NDP3 targets and outcomes for Namibia's economy during the five year period. During the NDP3 period, the annual average growths for the three main sectors of the economy were as follows: "Primary Industries Growth (-6.5%); "Secondary Industries Growth (5.4%)" and "Tertiary Industries Growth (5.4%)" (NPC, 2013: 10).

[2] "The Gini coefficient is a measure of overall income inequality within an economy. A Gini coefficient of 0 represents a situation where everyone in an economy has the same amount of income (no country in the world has a coefficient this low). The higher the coefficient, the higher the proportion of the nation's income that is earned by a small number of people; in other words, the higher the coefficient, the more unequal the society" (NPC, 2013: 9).

Table 2-2: Summary of the NDP3 targets and outcomes for the Namibian economy (National Planning Commission, 2013).

Item	NDP3 Target	Output
Real GDP growth (% per annum)	**5**	**3.6**
Real per capita income avg. growth rate (%)	**3.4**	**1.7**
Gini Coefficient	**0.58 (by 2008/09)**	**0.58 (2009/10)**
Unemployment Rate (%)	**33.3 (by 2011/12)**	**51.2 (2008)**
· Primary Industries (%)	**2**	**-6.5**
o Agriculture	3.7	-3.6
o Fishing & on-board Fish Processing	2.5	-3.7
o Mining & Quarrying	0.8	-8.4
· Secondary Industries (%)	**6.7**	**5.4**
· Tertiary Industries (%)	**6.2**	**5.4**

In terms of income distribution Namibia has been labeled as one of the most unequal societies. While reducing this inequality remains a key focus area for the government as part of its national objective, during the NDP3 cycle the actual per capita income growth was disappointing. The reported average growth rate of 1.7% per annum against a target of 3.4% is evidence of the severity of this unequal reality. The country has however recorded some degree of progress over the long-term. The Gini coefficient has for instance decreased from 0.70 in 1993/94 to 0.60 in 2003/04 to 0.58 in 2009/10 which shows signs of an economy progressively becoming more equitable. Despite the long-term improvement in Gini coefficient and the doubling in overall GDP, Namibia remains amongst one of the counties in the world with the highest unequal income distribution. An unequal society characterized by a large gap between the richest and poorest in society remains one of the major challenges that the country has faced since independence. Compounding this problem is the high rate of unemployment.

NDP3 had targeted employment to grow at 2.6% per annum and thereby reduce unemployment rate to 33.3% by 2011/12. In reality, total employment fell between 2004 and 2008 from **385 329** to **331 444** (out of a total working age population of **959 187**) persons according to the 2008 Namibia Labour Force Survey (NLFS) (Ministry of Labour and Social Welfare, 2010: 43). Over the same period, the unemployment rate increased from 36.7% to 51.2% (based on the broad sense

definition of unemployment)[3] according to the same survey conducted by the Directorate of Labour Market Services (DLMS) in the Ministry of Labour and Social Welfare (MLSW). During the final year of the NDP3 cycle in 2011 in an effort aimed at addressing the growing problem of unemployment, the government launched the Targeted Intervention Programme for Employment and Economic Growth (TIPEEG). TIPEEG was aimed at promoting job creation through expanded public works programmes and by addressing supply-side constraints (NPC, 2013: 16).

2.2.3 PERFORMANCE UNDER NDP3 – SECTORS OF THE ECONOMY

In terms of performance in three main categories of the economy, namely primary, secondary and tertiary industries, all three industry groups underperformed against the NDP3 targets. However, the primary industries underperformed the most against the intended targets. Against a planned growth rate target of 2% per annum the primary industry, which includes the agriculture, mining and fishing sectors achieved a negative growth rate of 6.5% instead. The underperformance was attributed primarily to poor performance in the mining and quarrying sector. The mining sector being the largest primary subsector is regarded as one of the vital sectors of the country's economy. While the mining sector was affected the most by low mineral prices on the international markets, other sectors of the economy were also adversely affected.

The agriculture sector also underperformed during the NDP3 period. It recorded an overall negative growth of 3.6% against a target of 2.5% per annum. The sector was particularly affected by the 2008/9 floods which destroyed crops and reduced livestock sales. Like the other primary sectors the fishing sector also underperformed during the NDP3 period. According to the NPC (2013: 11), unfavorable oceanic conditions, high oil prices, and reduced fish stocks were cited as the reasons for the sectors poor performance during 2007. The sector experienced an overall negative

[3] Unemployment can be defined in two ways; "broad or strict" sense. The difference between the two definitions depends on the inclusion of seeking work criteria. The *broad* measure of unemployment regards all those without jobs, who are available for work and looked or did not look for work. It is inclusive of all unemployed, whether they made attempts to look for work or not; the broad definition always yields higher rates of unemployment than the strict (Ministry of Labour and Social Welfare, 2010: 38).

growth of 3.7% against a target of 2.5% per annum. The other two main categories of the economy namely secondary and tertiary industries performed relatively better despite failing to meet their overall NDP3 targets. Growth within the manufacturing and construction sectors was the main performance driver of the secondary industries during NDP3. The secondary industries recorded an annual average growth of 5.4%, which registered slightly below the target of 6.4%; while the tertiary industries also grew annually by 5.4% against a target of 6.2% (NPC, 2013: 12). **Figure 2.2** shows the actual growth against targets for different indicators and various sectors of the Namibian economy during the NDP3 cycle.

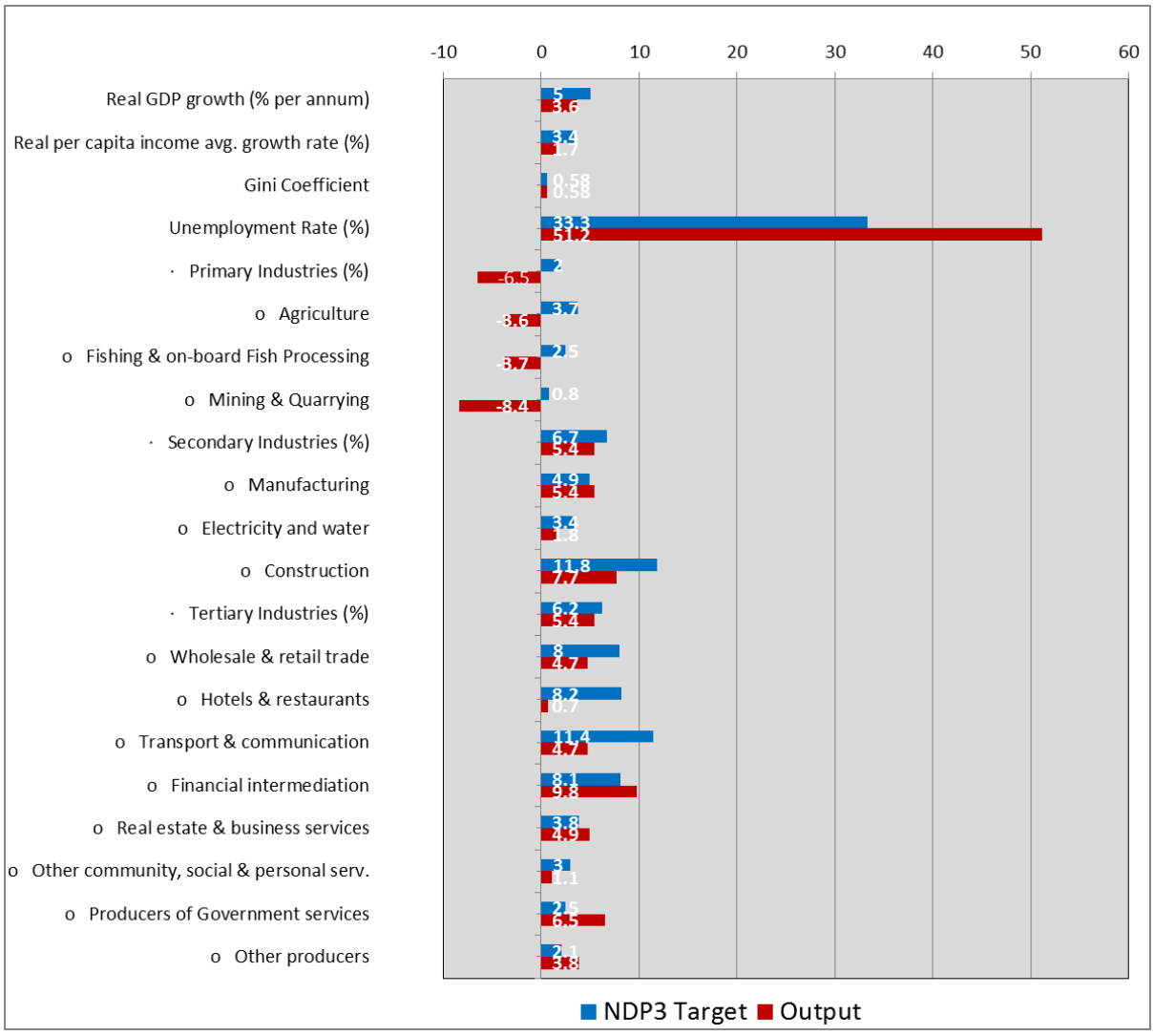

Figure 2-2: shows actual growth against targets for various economic indicators of the Namibian economy during the NDP3 cycle, (National Planning Commission, 2013).

2.3 AFRICA MINING VISION

Africa is a continent of many resource-rich nations and of which Namibia is also part. It is therefore only prudent to also consider Namibia's minerals resources development strategies within and in relation to the broader African context. Africa's numerous mineral endowments and the harnessing thereof are important to the continent's broad-based socio-economic development and industrialization. In order to meaningfully develop its resources and thereby enable for an accelerated transformation into a modernized and industrialized continent, necessitates the formulation of a shared mining vision for African countries. It is for this reason that on 20-22 August 2008, the United Nations Economic Commission for Africa (ECA) convened a meeting of technical taskforce to draft the new Africa Mining Vision (AMV) (African Union, 2009: 1). The AMV's goal is to create a "Transparent, equitable and optimal exploitation of mineral resources to underpin broad-based sustainable growth and socio-economic development" (African Union, 2009: v). According to the African Union (2009: v), the shared vision comprises of seven key areas as indicated in **Figure 2.3**.

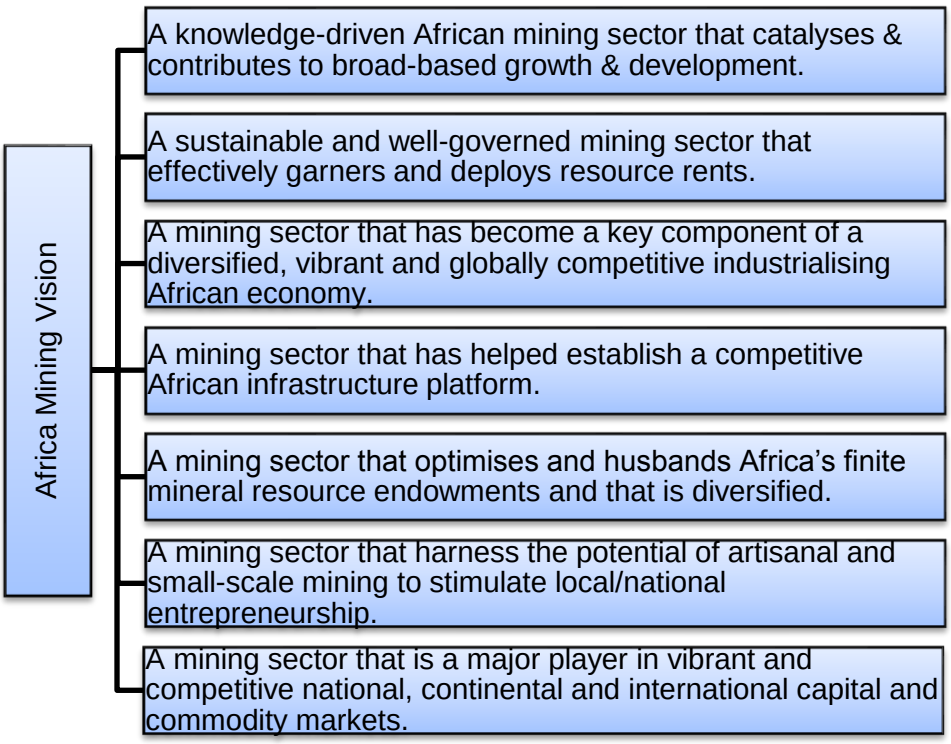

Figure 2-3: Africa Mining Vision key areas (African Union, 2009).

The AMV is essentially Africa's point of reference for mineral resource policy reform and development for Africa's resource-based economies, and seeks to ensure that the continent's natural resources are utilized for sustainable, broad-based socio-economic development and industrialization. The AMV has been formulated based on the outputs of several initiatives and efforts made at sub-regional, continental and global levels to articulate policy and regulatory frameworks aimed at maximizing the development outcomes of mineral resources exploitation and which includes amongst others: the Africa Mining Partnership's Sustainable Development Charter and Mining Policy Framework; and the SADC Framework and Implementation Plan for Harmonization of Mining Policies, Standards, Legislative and Regulatory Frameworks (African Union, 2009: 5). The AMV was adopted by AU Heads of State (of which Namibia is a member State) in February 2009 and is internatioanlly recognised (Pedro, 2013: 10). It has thus become an important point of reference for developing mineral resources development strategies in Africa.

The AMV implementation process is cognisant of the varying local context and development trajectory amongst African countries. Resource-based development and industrialization strategies aimed at catapulting African countries into industrialization to levels in line with their counterparts in the developed world require a multi-phased approach such as the one proposed in **Figure 2.4**. The model shows an increase in relative economic importance with each increasing phase of industrialization (Phase 1 to 4). Linked to each phase of increased industrialization is a relative decrease on mineral resources dependency as way to sustain local economies. Thus for example, while resource-based rents (taxes) may decrease with increasing industrialization, rents from resource diversified industries also grow in addition to also providing a more diverse tax base. Resource-based development and industrialization may prove to be a viable option for Africa's modernization, provided that mineral resources are appropriately utilized to: nurture and expedite capacity building in terms of both knowledge and skills formation; provide supporting infrastructure; promote local beneficiation and value addition of minerals; establish an industrial base through backward and forward linkages; and harness the potential of Public Private Partnerships (PPPs) amongst others (African Union, 2009: 4).

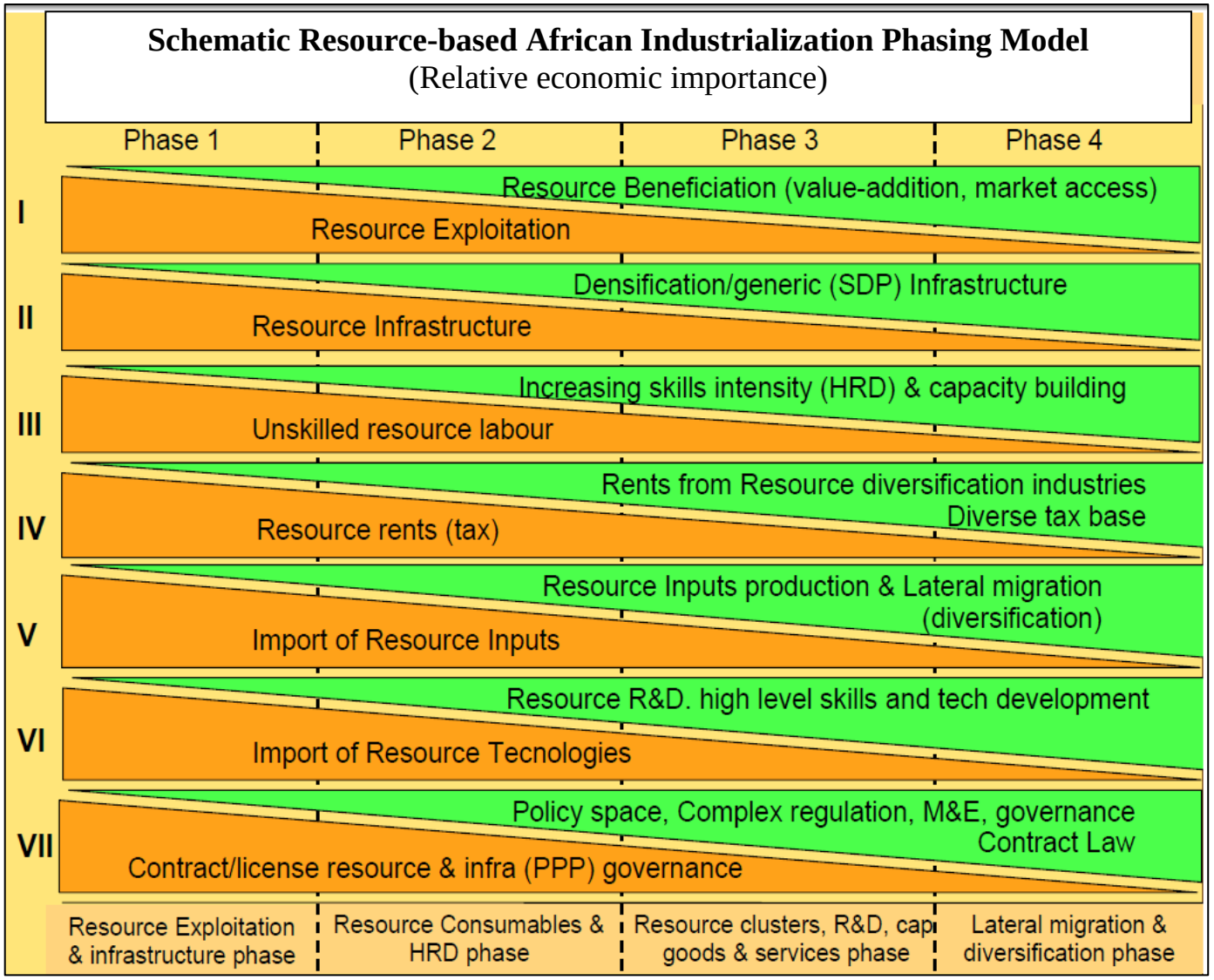

Figure 2-4: Schematic resource-based African industrialization phasing model (African Union , 2009).

The implication of the AMV for developing African mineral policy is amply summarized in the following objectives, according to the African Union & United Nations Economic Commission for Africa (2011: 5):

- Enhancing retained value by promoting linkages;
- Obtaining an adequate share of mineral revenue;
- Improving public participation and accountability;
- Pursuing an integrated view of rights of various stakeholders;
- Valuing environmental resources;
- Using mineral revenue efficiently;
- Promoting local development;
- Encouraging regional cooperation and harmonization; and
- Strengthening institutions: building capacity and developing networks.

2.4 MINERALS POLICY OF NAMIBIA

2.4.1 INTRODUCTION

The government of Namibia is committed to the development of the country's mining industry and as such formulated its Minerals Policy which was adopted in 2003. The policy was formulated in recognition of the important contribution of the mining industry to social and economic development of the country. Although Namibia's minerals policy framework was formulated prior to the formulation of the Africa Mining Vision (AMV), both documents strive in principle for similar goals in terms of broad-based growth and socio-economic development. However, "the AMV is informed by broader outcomes of 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 at a continental level" (African Union, 2009: 1). As such, the AMV provides a broad framework for developing mineral resources in Africa, with respect to which Namibia has an opportunity to reform its own mineral policy, legal and regulatory frameworks so as to fully integrate and harmonize its development strategies with the rest of the African countries. This is also essential for maintaining effective cooperation, favourable trade relations, peace and security amongst trading partners.

According to Namibia's minerals policy, its vision is:

> "To achieve a high level of responsible development of national resources in which Namibia becomes a significant producer of mineral products while ensuring maximum sustainable contribution to socio-economic development of the country. As well as to further attract investment and enable the private sector to take a lead in exploration, mining, mineral beneficiation and marketing" (Ministry of Mines and Energy (MME), 2003: 5).

The mission of the policy is stated as follows:

> "The Ministry of Mines and Energy (MME), as the custodian of Namibia's rich endowment of mineral and energy resources, facilitates and regulates the responsible development and sustainable utilisation of these resources for the benefit of all Namibians" (MME, 2003: 5).

2.4.2 OBJECTIVES OF THE MINERALS POLICY

According to the Ministry of Mines and Energy, (2003: 9) there are twelve key objectives for the country's minerals sector. **Table 2.3** shows the minerals policy objectives and the corresponding AMV development strategies needed, particularly by governments, to achieve the policy objectives. The examples of development strategies provided in the table were taken from lessons learnt from the experiences of resource-based development and industrialization in the Nordic countries such as Finland and Sweden. While it may prove useful to emulate development strategies based on the success of other countries, key to Namibia's own success, like elsewhere on the African continent, remains in the formulation and implementation of its own industrialization strategies which take into account the country's unique comparative advantage (resources endowment), as well as the prevailing socio-economic, political and environmental conditions.

Table 2-3: Namibia Minerals Policy objectives and corresponding AMV key action requirements (Source: Ministry of Mines and Energy, 2003 and African Union, 2009).

Namibia Minerals Policy Objectives	Africa Mining Vision Development Strategies
Promote and stimulate investment in exploration and mining.	Provide supporting infrastructure including roads, rail ports, energy and water and telecom.
	Promote the development of mineral resources (especially industrial minerals) for the local production of consumer and industrial goods.
Promote an environment conducive for the mineral sector that encourages and facilitates the active participation of all stakeholders.	Improve the quality of the business environment, increase private sector confidence and participation, and reduce entry barriers and operating costs to achieve external economies of scale.
	Encourage the establishment of strong instruments of collaboration.
	Establish an industrial base through backward and forward linkages
Promote and encourage local participation in exploration and mining.	Harness the potential of mid-tier resources that may not necessarily attract major international companies but high net worth individuals, including local entrepreneurs
Promote and encourage maximum local beneficiation of mineral products.	Promote local beneficiation and value addition of minerals to provide manufacturing feedstock.
Regularize and improve artisan and small-scale mining so that it becomes part of the formal mining sector.	Encourage and support small and medium-scale enterprises to enter the supply chain
Promote research and development for improving technology in exploration, mining and mineral processing operations.	Develop resources technological clusters through the facilitation of research and development (R&D) and build knowledge networks.
Ensure the establishment of appropriate educational and training facilities for human resources development.	Facilitate and nurture human resources development and skills formation.
Promote and facilitate marketing arrangements to increase the economic benefits of the sector.	Establish the requisite enabling markets and common platforms for services.
Ensure the adherence of the principle of socio-economic upliftment through appropriate measures.	Harness the potential of Public Private Partnerships (PPPs).
Ensure compliance with national environmental policy and other relevant policies to develop a sustainable mining industry.	Ensure compliance of industry players with the highest standards of corporate governance, and environmental, social and material stewardship.
Review on a regular basis the legal, economic, social and political aspects of the Minerals Policy, to ensure that it remains internationally competitive.	Promote regional integration and harmonization to facilitate factor flows.
Ensure mining operations are conducted with due regard to the safety and health of all concerned.	Ensure compliance of industry players with the highest standards of corporate governance, and environmental, social and material stewardship.

2.4.3 KEY POLICY THEMES

The Minerals Policy document comprises of eight key areas: The Mining Industry; Value Addition; Marketing and Investment Promotion; Mining Industry and the Environment; Human Resources; Research, Development and Technology; Governances; and Regional Integration. **Table 2.4** provides a summary of the eight key policy areas together with the relevant government actions needed to support development in the key areas.

Table 2-4: Namibia minerals policy key areas and the corresponding government actions required in these areas (Source: Ministry of Mines and Energy, 2003).

Namibia Minerals Policy key areas	Government actions needed to develop the minerals policy focus areas
Mining Industry	• Promote the exploration and development of the country's mineral resources and facilitate mining investment; • Maintain competitiveness and ensure sustainable benefits for all Namibians; • Ensure security of tenure through effective legislation and an environment conducive to investment, as well as encourage the mining industry to address social responsibilities through support programmes, training and community participation; and • Develop strategies to support Namibian participation in the mining sector to achieve sustainable development and prosperity.
Value Addition	• Government will further explore opportunities for the promotion of value addition, encourage and facilitate local manufacturing under the concept of "Mined and Manufactured in Namibia; • Government in conjunction with relevant stakeholders, will identify skills deficiencies for value addition and promote measures to address them; • Government, in conjunction with financial institutions, will investigate the financial constraints on the development of value addition industries; and • Government will implement effective environmental monitoring systems to ensure compliance with environmental management programmes for value addition activities in line with international best practice.
Marketing and Promotion	• Government will promote and encourage investment in the mineral sector through effective marketing of this sector; and • Government will create a capacity that is properly resources to undertake mineral promotion and marketing activities.
Mining Industry and the Environment	• Government will ensure that the development of Namibia's mining industry proceeds on an environmentally sustainable basis; • Government will enact exploration and mining legislation benchmarked against environmental global best practice; • Government will ensure compliance during rehabilitation with national policies and guidelines, and where appropriate and applicable, with global best practice; • Government, with relevant stakeholders, will investigate the establishment of financial mechanisms for environmental rehabilitation and aftercare; • Government, in consultation with the mining industry, will develop waste management standards and guidelines for Namibia; and • Government will ensure that the mining industry complies with the Mine Health and Safety Regulations (MHSR).

Human Resources	• Encourage the mining sector to promote and support training for careers in mining through the provision of bursaries, in-house training and apprenticeships; • Actively support the implementation a National HIV/AIDS Policy and encourage companies to adopt the policy; • Recognise that not all specialist-mining services are available in Namibia and will facilitate short-term employment of such services, where necessary; and • Ensure that the mining industry complies with legislation to ensure equal opportunities for all Namibian citizens.
Research, Development and Technology	• Government will encourage, promote and invest in research and development, as well in new technology in search of innovative solutions to challenges in the mining sector; • Government will promote the establishment of a National System of Innovation; • Government will facilitate the generation of both fundamental and applied knowledge through a collaborative system between public and private research institutions; • Government will support and encourage the mining industry to undertake research and development of new technologies; and • Government will support and encourage the mining industry to apply new technologies.
Governances of the Sector	• The Ministry of Mines and Energy will be responsible for coordinating the effective governance of the mining sector; • Government will a mechanism to ensure co-ordinated land use and development; • Government will constantly update the legal framework to in line with global best practice; • Government and the mining industry will actively support compliance with Namibia anti-corruption measures; and • Government will continuously strive to maintain a stable political environment through a democratic system.
Regional Integration	• Government will, in consultation with stakeholder, take up a proactive role in developing regional policies and initiating timely implementation thereof; • Government will promote a uniform approach to technology and human resource policies so that mining related educational and research institutions can be fully utilised; and • Government will encourage a co-ordinated SADC approach to the utilisation of joint infrastructure that benefits regional mineral activities; and • Government will encourage all SADC member States to ratify environmental conventions appropriate to the mining industry in SADC.

2.4.3.1 THE MINING INDUSTRY

Mining has long been recognized as the cornerstone of the national economy. Mining contributes significantly to the GDP, in particular through the contributions from the diamond industry. While the revenue generated from diamond mining has dominated value added to GDP, non-diamond mining contribution to GDP has been on the increase in recent years. The country's merchandise exports are dominated by mineral exports and continue to reflect the changing composition between diamonds and other minerals.

Furthermore, the mining sector plays an import role in terms of its contribution to tax revenue and employment creation. Direct tax revenue from the mining sector remains a vital source of capital for government's national development programmes (MME, 2003: 7). The mining industry helps provide employment to a vast number of people, either in direct or indirect employment. These all have the potential to address the country's unequal income distribution created through decades of colonial oppression. The mining industry is the largest sub-sector within the primary sector of the economic with an average annual contribution of 11% to GDP (NSA, 2012: 17). Due to the country's abundant mineral resources, the mining sector holds huge potential for even greater social and economic development.

With respect to the development of mineral resources and the mining industry in the country, the goal of the government through the policy is:

> "to achieve a high level of responsible development of national resources in which Namibia becomes a significant producer of mineral products while ensuring maximum sustainable socio-economic development of the country to further attract investment and enable the private sector to take the lead in exploration, mining mineral beneficiation and marketing" (MME, 2003: 5).

2.4.3.2 VALUE ADDITION

Value addition or beneficiation as it is also referred to, can be described as the process which involves the transformation of raw material (i.e. mineral ore) to a higher value product (i.e. polished diamond). The product can then either be consumed locally or exported. There are generally four stages of mineral

beneficiation for consideration, namely: primary, secondary, tertiary and final (Robinson & von Below, 1990). According to the South African Mineral and Petroleum Resources Development Act (MPRDA) of 2002, as summarized by Leeuw (2012: 3), the primary stage comprises of the actual mining, recovery, reduction and smelting processes whereby the conversion of mineral ore into concentrate takes place, followed by the secondary stage which is a transitional stage between the mining sector and the industrial (manufacturing) sector in which the conversion of mineral concentrates into intermediate products occurs. The tertiary stage of mineral beneficiation "involves refinement of intermediate products to produce high-value intermediate products" and lastly, that the final stage "involves the manufacturing of final products" (Leeuw, 2012: 3).

While some amount of downstream value addition such as smelting and refining does take place within the country's mining sector (essentially primary beneficiation), the bulk of the country's mineral resources are to a large extent still exported in raw or semi-processed forms. The area of concern in Namibia therefore revolves around the last three stages of mineral beneficiation. While it is unclear as to what the exact proportion is between minerals exported in raw or semi-processed forms and those converted to high-value intermediate products or even final products, based on the limited available information, it appears that beneficiation of minerals by far and large proceeds mainly up until the secondary stage. This is particularly the case considering the fact that the only major conversion of mineral concentrates into intermediate products occurs at the mine level. There is for example no steel making facility in the country although plans have been proposed to setup a steel mill in Otavi (Namibian Sun, 2012). Despite the fact that metal fabrication does take place within the country, this is generally carried out on steel imported from neighboring South Africa.

The Africa Mining Vision (AMV) identifies the enhancement of downstream industries based on increased local beneficiation and value addition of goods as one of the viable options to create opportunities for greater local participation, particularly in the provision of goods and services (African Union, 2009: 5). There are generally positive signs as far as value addition is concerned in Namibia, especially within the

manufacturing sector. **Figure 2.5** shows the composition of manufactured products in the country. The category "*Other Manufacturing*" in the diagram refers largely to mineral beneficiation which represents: the cutting and polishing of rough diamonds; the refining of copper and zinc ore (NPC, 2013: 98); fabrication of metals and non-metalic minerals; textile and clothing; and in recent years the addition of chemicals and plastics processing to the above products (Bank of Namibia, 2007: 8).

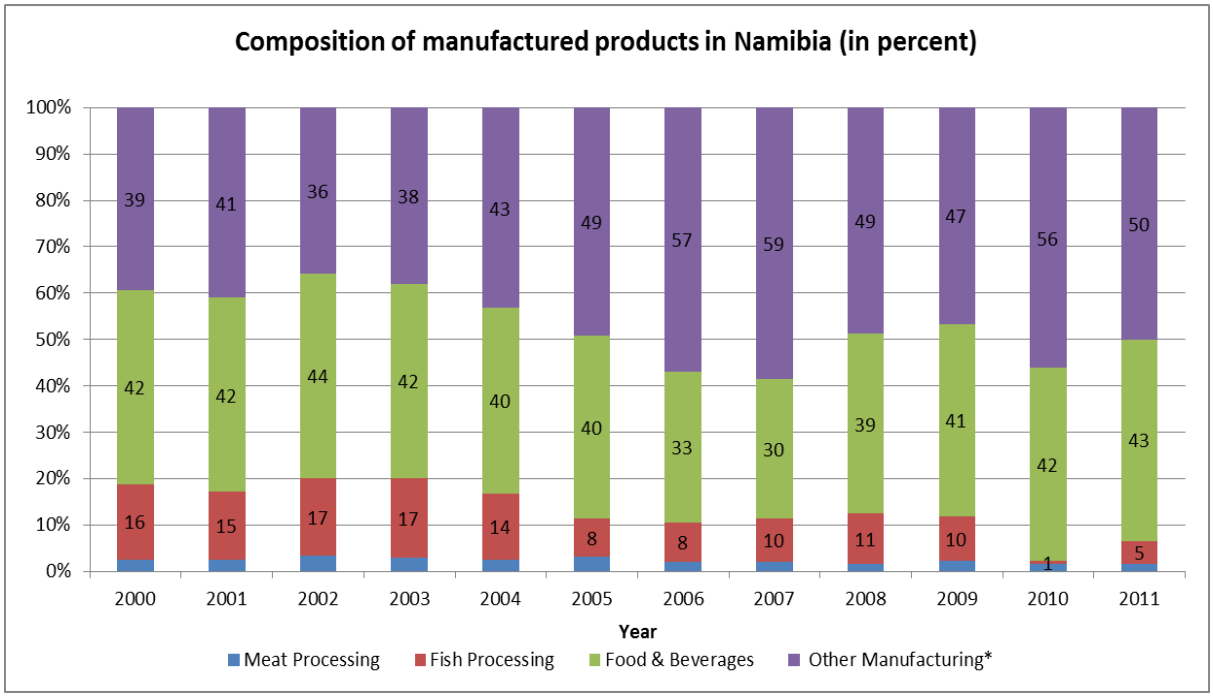

Figure 2-5: shows the composition of manufactured products in Namibia from 2000 to 2011 (Namibia Statistics Agency, 2012).

As the minerals sector becomes less bundled and creates more opportunities for local beneficiation and value addition, the value of exported raw minerals relative to the value of locally manufactured goods and services may gradually start to decline. This is expected if the goal is to move away from a resource-based economy towards a knowledge-based economy, underpinned by modernization and industrialization. While the basket of manufactured products remains small and not yet fully diversified, especially with respect to mineral beneficiation, the share of manufactured products as a whole has increased from an average of 41% (2000-2005) to 53% (2006-2011) according to the latest National Accounts (NSA, 2012: 18).

Value addition as envisaged in the minerals policy seeks to enhance national economic activities and improve state revenue. This potentially can be achieved by increasing the quantity and quality of exports while reducing the need for imports. The process of value addition further seeks to promote the creation of meaningful employment and widen the employment base, as well as improve the skills level in the minerals industry. Value addition in the minerals industry is particularly important because of the fact that mining in general deals with non-renewable resources or finite resources. It is therefore imperative that the full benefits of these finite resources are derived before known deposits are exhausted.

There are several factors that hamper the full potential and realization of value addition both locally and regionally. These include amongst others: weak linkages between minerals extraction and downstream value addition; “non-availability of other critical inputs, besides the crude resources, necessary for competitive beneficiation, such as [water] and energy” African Union, (2009: 18); comparatively higher local costs of beneficiation; lack of appropriate local or regional technology and skills; and ineffective legal and regulatory mechanisms to impose minimum levels of beneficiation coupled with ineffective local beneficiation incentives.

2.4.3.3 MARKETING AND INVESTMENT PROMOTION

The development of industrial economies to a large extent is underpinned by the global mining industry. Namibia can participate in the benefits of global mining and mineral trade due to its relative mineral abundance. In order to derive optimal benefits from its mining industry and ultimately realize its objective of becoming an industrial nation, the country needs to actively market and promote investment in its minerals sector. While the country enjoys a comparative advantage due to its relative mineral abundance, it nonetheless operates in a very complex and competitive global market. Markets in which investors are more likely to invest in countries that allow them earn financial returns on their investments commensurate with the risks they are willing to undertake. Hence, the government through the Minerals Policy seeks to promote and encourage investment in the mineral sector through effective

global marketing of this sector; as well as create capacity that is properly resourced to undertake mineral promotion and marketing activities.

2.4.3.4 THE MINING INDUSTRY AND THE ENVIRONMENT

Mining activities are amongst the primary contributors to major environmental degradation. In many developing countries including Namibia, environmental issues in mining have received little or no attention in the past. This trend has however been changing rapidly in recent years with emerging markets starting to pay more attention to mining related environmental concerns.

In recognition of the country's "Protected Areas" - which include National Parks and Game Reserves - the Minerals Policy in combination with other relevant legislation such as the Minerals (Prospecting and Mining) Act, aim to regulate and protect the environment against degradation caused as a result of prospecting and mining activities. As such, the policy seeks to avoid inappropriate prospecting and mining activities in protected areas, areas of high ecological sensitivity or areas of tourism potential. According to the country's Vision 2030 policy framework, there are approximately 40 abandoned, un-rehabilitated mines in the country, 40% of which are in natural reserves.

The policy recognizes the effect that mining has on the environment and the need for appropriate legislation to regulate the environment in mining. The policy furthermore recognizes the need to streamline the various government departments concerned in environmental issues. Coupled to this, the policy recognizes that "there is little effective environmental management within the country's mining industry, which is as a result of inadequate co-ordination between the MME and the Ministry of Environment and Tourism (MET) in relation to environmental legislation" (MME, 2003: 26). In addition, the Policy calls for clear funding mechanisms for environmental rehabilitation, management and control (MME, 2003: 27).

Issues related to environmental management are not unique to Namibia alone. The colonial norm to ensure easy and cheap access to Africa's resources has

overshadowed the need to observe international integrated environmental management standards within some SADC States (Economic Commission for Africa (ECA), 2004: 36). In its report, the ECA made the following recommendations for harmonization of approaches to environmental management by SADC member States: "introduce similar regulations about basic environmental impact assessments before the granting of exploration and mining rights; introduce similar principles, legislation and implementation mechanism for integrated environmental management and set up environmental agencies where they do not exist; consider multiple land use planning and include post-mining use of land obligations in the process of granting exploration and mining licenses; make it mandatory that future adverse impacts are factored into financial decisions during mining; and introduce a Minerals Development Fund by all member States" (ECA, 2004: 36).

2.4.3.5 HUMAN RESOURCES

Capacity building and skills development are key development agendas for Namibia. A major problem facing the country's mineral sector is a severe shortage of skilled professionals and technical personnel in all categories of the mining sector. As a result, the personnel required to fill specialized positions within the country's mining operations are mostly filled by expatriates. It is therefore not surprising that human resource development is critical to the development of the country's mining sector.

Compounding the problem of inadequate human resource development is a lack of a well-coordinated policy intervention and legislation. Despite the enactment of the Affirmative Action Act into law in 1998, the current situation remains disadvantageous to many indigenous Namibians. The Act aims to rectify racial and gender imbalances at all levels in all organizations. Still hampering the efforts to develop the much needed human resources is an overall weak educational system and the lack of capacity at operational training institutions. As a result the mining industry continues to struggle with finding suitably qualified personnel with the relevant skills to fill various vacancies within the industry.

It is ultimately, although not the sole, responsibility of government to formulate and implement human resources, capacity-building strategies. While some foreign mining companies tend to support local skills development and increase local human resource capacity, many still prefer to import human resources and associated skills from their home countries or trading partners in developed countries. Unless national governments make it mandatory for mining companies to participate in local skills development and capacity-building programmes, human resource capacity and skills shortage will continue to hamper growth and development both locally and within the region at large.

2.4.3.6 RESEARCH, DEVELOPMENT AND TECHNOLOGY

The government recognizes the important application of earth sciences in supporting wealth creation, quality of life and laying the foundation for sustainable development in the future. In Namibia, research and development (R&D) in general and in the particular the mining industry has not received the attention it deserves. In order to remain sustainable in an ever changing and competitive global market, the country's mining industry needs to maintain the ability to use new and efficient technologies. It is with this view that the government through the Policy seeks to: encourage, promote and invest R&D, as well as in new technology in search for innovative solutions to the challenges in the mining sector; promote the establishment of a National System of Innovation; facilitate the generation of both fundamental and applied knowledge through a collaborative system between public and private research institutions; support and encourage the mining industry to undertake R&D of new technologies; and support and encourage the mining industry to apply new technologies.

Research and technology development provides an opportunity to strengthen mineral resources side-linkages. This sector is believed to be knowledge-intensive and its capacity has been shown to "later reinvent itself outside the resources sector through the lateral migration of technological competencies to produce new products for other (non-resource) markets" (African Union, 2009: 17). Funding of research and development programmes must be a priority for Africa's national governments.

2.4.3.7 GOVERNANCE OF THE SECTOR

Governing of the minerals industry is spearheaded by the MME, which is divided into five directorates, namely: Mines, Geological Survey, Energy, Diamond Affairs and Administration/Finance. The MME works closely with other ministries such as: the MET; the Ministry of Agriculture Water and Rural Development (MAWRD); and the Ministry of Fisheries and Marine Resources (MFMR). The challenge associated with managing the overlapping functions between different ministries is the excessive bureaucracy and the time required for coordination between government departments. The country's mining industry is regulated through various laws; however the Minerals (Prospecting and Mining) Act is the most relevant law regulating exploration and mining.

According to the Minerals Policy, the government will create a mechanism to ensure coordinated land use and development and will constantly update the legal framework to be in line with global best practice. In addition, the government and the mining industry will actively support compliance with Namibian anti-corruption measures. Lastly, government will continuously strive to maintain a stable political environment through a democratic system.

2.4.3.8 REGIONAL INTEGRATION

Namibia is a member of the Southern African Development Community (SADC). The Namibian Government recognises its commitment to the SADC region. SADC member States seek to harmonize country specific policies, strategies and programmes through collaboration and regional integration. This is because the Southern African region is rich in mineral resources and current regional programmes being developed would benefit all member States. It is thought that amalgamating member States into a single economic block could provide better leverage particularly on trade issues, for the region as a whole. The Namibian government has therefore committed to the implementation of the SADC Treaty and the SADC Protocol on Mining.

According to the Harmonization of Mining Policies, Standards, Legislative and Regulatory Frameworks in Southern Africa (HMPSLRFSA), "the SADC Mining Protocol came into force in 2000 with the objective of creating a thriving mining sector that can contribute to economic development, alleviate poverty and improve the standard and quality of life in the region" (Economic Commission for Africa, 2004: 3). The HMPSLRFSA state further that this objective is in line with the SADC Common Agenda articulated in the SADC Treat (Economic Commission for Africa, 2004: 3). The Protocol's main areas of focus are (SADC, 2000):

- Harmonizing national and regional policies, strategies and programmes related to the development and exploitation of mineral resources;
- Facilitating development of human and technological capacities;
- Promoting private sector participation in the exploitation of mineral resources;
- Improving the availability of information to the private sector;
- Promoting responsible small-scale mining;
- Promoting economic empowerment of historically disadvantaged groups in the sector; and
- Developing and observing internationally acceptable standards of health, safety and environment.

2.4.4 CONCLUSION

Mining is a significant contributor to Namibia's economy in terms of revenue, accounting for approximately 11% of GDP per annum. The government of Namibia having recognized the important role mining plays in the country's development, decided to develop the Minerals Policy. The policy sets out guiding principles and direction while communicating the values of the Namibia people in pursuit of the development of the mining sector. The policy document provides a framework of how the mining sector fits into the broad national economy by identifying key focus areas. The key focus areas are in line with the objectives of the SADC Protocol on Mining and broadly center on economic development, poverty alleviation and improving the standard and quality of life at a national and regional level. The key areas include the mining industry as an important sector of the economy and as an instrument for

socio-economic transformation; mineral beneficiation which covers the whole range of value addition processes; marketing and investment promotion; environmental issues relating to mining; human resource development and capacity building; research, development and technology; governance of the sector; and regional integration.

It is believed that the mineral wealth of Namibia will contribute to the growth and development of its people and the country as a whole. Hence, there is a great expectation for the mining sector to play a pivotal role in achieving the national objectives, such as to: reduce poverty; create employment; promote economic empowerment and reduce income inequalities; stimulate and sustain economic growth; and increase environmental and ecological sustainability amongst others. However, in order for all this to materialize, mineral resources linkages need to be strengthened in terms of: down-stream linkages into mineral beneficiation and manufacturing; up-stream linkages into the provision of goods and services needed in the mining industry such; and side-linkages into the provision of infrastructure development, skills development, research and technological innovation.

The Minerals Policy was formulated in the spirit of wide and extensive consultations with all stakeholders. Equally, its success will also depend on the inclusion and participation of all Namibians. Provided too, that political will to deliver is sustained and a workable programme is in place. At the regional level and as aptly pointed out in the AMV, “the key strategy in optimizing a resources endowment is around the resource regulatory regime, which directly determines the relative ‘division of the spoils’ and indirectly influences the deepening of the sector through down and upstream linkages to the local, national and regional economies” (African Union, 2009: 19).

3 CHAPTER THREE: THE ROLE OF MINING

3.1 THE ROLE OF MINING IN NATIONAL ECONOMIES

According to the 2012 report by the International Council on Mining and Metals (ICMM), the mining industry is a major force in the world economy. However, its role in contributing to the national economies of different countries varies greatly and is neither well documented nor well understood. The ICMM was formed in 2001 to catalyse improved performance and enhance the contribution of mining, minerals and metals to sustainable development (Internantional Council on Mining & Metals, 2012). Mtegha (2005) state that in the SADC, the mining sector is considered to be the basis of economic reconstruction and development. He added that the sector was expected to provide employment, revenues and broader economic development. Krugmann (2001) writing on the fundamental issues and the threats to sustainable development in Namibia describes the connection between mining and the four major development objectives of Namibia's National Development Plans (NDP). These are achieving sustained economic growth, creating employment, eradicating poverty and reducing income inequality. It appears that central to mining is economic development.

The term 'economic development' is synonymous with terms like economic growth, economic progress, economic welfare, social justice, structural change and many others. It encompasses wide-ranging, inter-related strands of economic change and improvement, the bottom line today though, being about building prosperity. It is difficult to give any universal and clear definition of economic development.

Okun & Richardson (1962: 230) cited in Fordelone & Schutte (2007: 56) defined economic development as "a sustained secular improvement in well being, which may be considered to be reflected in an increasing flow of goods and services".

Adelman (1961: 1) cited in Fordelone & Schutte (2007: 57) defined economic development "as the process by which an economy is transformed from one whose rate of growth of per capita income is small or negative to one in which a significant self-sustained increase of per capita income is a permanent long-run feature".

Building-on the above definitions, economic development may broadly be described as the process of seeking and achieving long-term sustainable growth in a nation's standard of living. It relates to interdependent measures of prosperity assessed through performance indicators such as:

- Economic - gross domestic product (GDP), GDP growth and GDP per capita, foreign direct investment (FDI), export and imports of goods and services, education and health expenditure, research and development expenditure, inflation etc.;
- Social – infrastructure development, energy production, literacy rate, labour force and employment rate, prevalence of HIV and other communicable diseases, life expectancy etc.; and
- Environmental – access to land and water, food production, forestry and marine resources management, water pollution and greenhouse gas emissions.

Mining is a very generic word and as such renders the role played by mining equally broad. It follows that the broad roles played by mining vary from one country to another and are to a great extent driven by the ambitions and capacities of the different stakeholders in the respective countries. It also follows that there is no one universal standard to which all mining activities can be held accountable. It is however a common understanding that mining is an instrument for sustainable national economic and social development. It is an industry that holds great potential to transform the living standards of any given society. Mining as an activity has been practised by human beings for many centuries and has facilitated the transformation of many ordinary agrarian societies into industrial nations. According to the 2010 Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF)[4] report, countries that launched the industrial age were all major mining countries and some still remain so, such as the United States (IGF, 2010: 19). The report stated further that mining provided the raw materials and generated the revenue that fuelled the industrial revolution and laid the foundations of their modern

[4] IGF was established by a number of countries which during the World Summit of Sustainable Development in 2002 decided to take action to ensure and enhance the contributions of mining, minerals and metals sector to sustainable development and poverty reduction by identifying the priorities that needed to be addressed (IGF, 2010).

societies. It is to the living standards of these developed economies derived through mining activities, that now all societies aspire to.

Mining activities today still remain the dominant contributors towards the growth of many national economies. Mining's growing role in many low and middle income countries continues to generate the much needed capital to develop other sectors of the economy and address social issues of inequality, unemployment and poverty to mention a few. All of which ultimately and holistically support sustainable development and industrialization of a nation. "The conversion of natural capital into human capital holds the greatest promise for sustainable outcomes from mining activities" (IGF, 2010: 30).

While the benefits derived from mining are many, varying with the amount of resource endowment and the state of development, mining activities may often result in detrimental effects on the environment and people. This has often cast doubt in many quarters of society on the widely held view that mining is an instrument for sustainable development. Examples of environmental impacts caused by mining activities abound and include amongst others: deforestation and soil erosion caused as a result of clearing vast tracts of land for mining, water pollution caused by the discharge of harmful chemicals into the surrounding natural water bodies; and air pollution caused by releasing toxic gases into the atmosphere. Mining activities if not properly managed may often result in negative social impacts. The large disturbances caused by mining can result in habitat modification which in turn may affect a community's way of life. In rural areas for example - where most of the mining operations tend to take place - communities may be forced off their communal land to pave way for mining. This may give rise to conflicts between community members as a result of them having to compete for scarce resources such as grazing land and water. In some cases, mining related activities may even lead to corrupt practices such as illegal soliciting of money by corrupt officials.

3.2 THE ROLE OF MINING IN THE NAMIBIAN ECONOMY

The role of mining in the Namibia economy is multifaceted. Almost everything we depend on is either made from minerals or relies on minerals for its production and distribution. Mining as an industry operates to ensure that our reliance on minerals is met. But more importantly, it provides an opportunity for greater social and economic reform benefits to the country. There is no doubt that the mining sector is an important sector of Namibia's economy. According to Krugmann, (2001: 5) "Namibia has long been (and to a significant degree still is) a classic case of a small economy dominated by the exploitation of key mineral resources." While these mineral resources have the potential to be transformed into overall national growth and prosperity, the risk of resource over-exploitation in Namibia is very real. This is particularly the case due to its poorly diversified economy and the heavy reliance on nonrenewable mineral resources.

Namibia's narrow economy is classified as a mineral-resource-based economy. The minerals sector plays an important role towards national economic development through the mineral revenue it generates. The revenue generated is in turn used by the State to fund its national development programme, which include, amongst others, infrastructure development, employment creation, and provision of education and health. The revenue is generated by attracting foreign direct investments as well as through foreign exchange earnings. While the primary role of mining towards the country's development is economic in nature, this is by no means the only role. Other roles which are of a social-economic nature include for example employment creation, human resource development, R&D amongst many.

The role played by the mining sector towards the country's economic development has not changed much over the years. The capital resources linked to this role however has changed owing to the global economic crisis. Subsequent and in response to the economic crisis, several mining companies adopted strict cost cutting measures. This in turn contributed to the negative socio-economic conditions that continue to prevail within the country. The national economy slowed down owing to an overall decrease in the sector's financial contribution. This section explores the

role mining has played in Namibia's economic development post the 2008 global economic crisis.

3.2.1 REVENUE GENERATION - STIMULATING AND PROMOTING ECONOMIC DEVELOPMENT

Mining plays an important role in Namibia's economy by stimulating and promoting economic development. This is achieved primarily through the revenue streams resulting from mining investments, such as foreign capital inflows, total mineral tax revenues, infrastructure investment, royalties and licence fees. The mining sector holds huge potential to stimulate the country's economic development by promoting mineral trade and thereby drawing foreign export earnings and foreign direct investments into the economy. Diamond, copper, uranium, fluorspar, gold, zinc and lead are the mineral commodities that are the most significant to Namibia's economy. According to Soto-Viruet, (2011: 1), Namibia took third place among the world's top diamond producers in terms of the value of production in dollars per carat, sixth place in terms of the total value of diamond production, and ninth place in terms of the volume of diamond production in 2010. According to the same author Namibia was ranked the fourth producer of uranium, accounting for 8% of world production during the same year. In terms of the country's mineral export earnings, exports to the United States alone amounted to about $195 million in 2010 compare with the about $329 million in 2009 (Soto-Viruet, 2010: 1). In contrast, imports from the United States were valued at about $110 million in 2010 compared with $202 million in 2009 according to the same author.

There has been a marked impact in economic development pre and post-2008 due to annual fluctuations in mining contributions towards GDP. These were attributed to both internal and external market factors. According to a Namibian minerals article, "mining contributed an average of just over 11% of Namibia's total GDP at current prices between 2000 and 2009" (Aspermont UK, 2010: 3). It is the author's view that overall, a positive impact on the economy characterized the role of the mining sector both pre and post-2008. A point in case is the renewed focus on the country's uranium deposits in recent years. Indications are that Namibia is well positioned to derive substantial economic and social benefits from improved demand for its

minerals, which is evidenced by the significant investments made, particularly to the country's expanding uranium industry (Aspermont UK, 2010: 2).

Amidst the global economic crisis that ensued during 2008 Namibia succeeded in retaining and attracting a range of foreign mining investors into developing its uranium resources. Hammerslacht (2012: 15) pointed out that notwithstanding the decrease in uranium prices which started in the second half of 2007, production of uranium continued to increase with the country's expanding uranium industry, underpinned by increasing demand for uranium. **Figure 3.1** shows Namibia's uranium production between 2000 and 2011 relative to the value of metal ores (including uranium ore) export. A breakdown of export value per ore type could not be obtained, however the combined figure was deemed sufficient for the purpose of illustrating the relationship between the two variables. **Figure 3.2** shows Namibia's uranium production relative to annual average uranium prices. The figure shows that despite declining uranium prices post-2008, production of uranium remained fairly and stable. In 2011 uranium production figures had dropped to just below 8.5mlbs per annum. The annual uranium production level has since recovered and in 2013 stood at 10.8mlbs (Chamber of Mines of Namibia, 2014: 85).

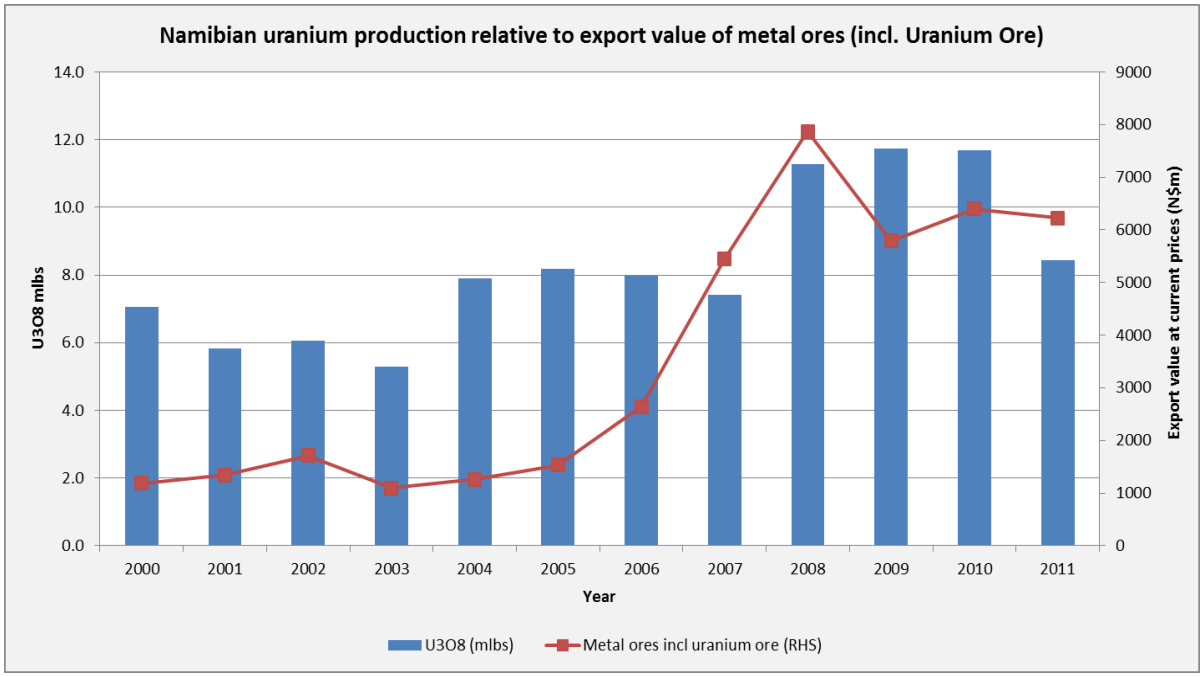

Figure 3-1: Namibia uranium production vs. export value of metal ores (incl. uranium ore) (Namibia Statistics Agency, 2012).

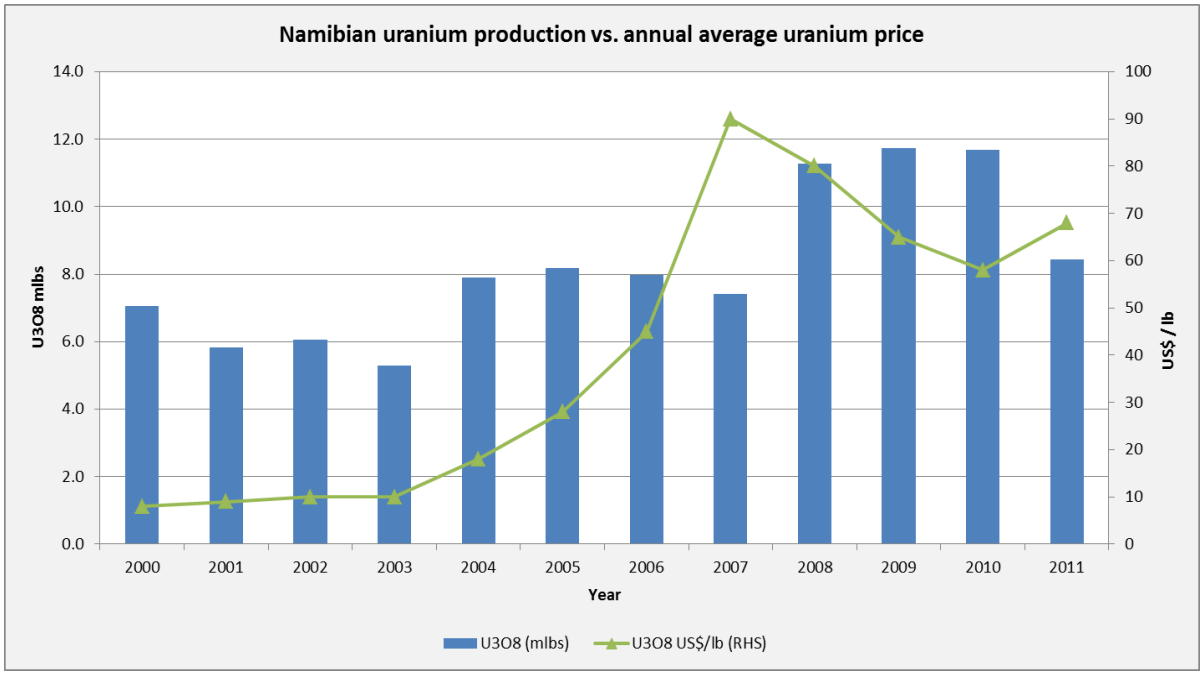

Figure 3-2: Namibia uranium production vs. export value of metal ores (incl. uranium ore) (Namibia Statistics Agency, 2012 & (World Nuclear Association, 2014).

Mining plays an important role in the country's infrastructure development through economic diversification. By attracting foreign exchange earnings generated through sales of Namibia's minerals, the mining industry in turn was able to provide funding for the expansion and development of other important national projects. The CMN highlighted in its 2008 annual review that good progress was made on the 20 million cubic meters per year desalination plant being developed with funding from Areva at Wlotzkasbakken. This project serves as an example of the mining industry's contribution to the country's infrastructure development and the wider national economy. While the water desalination project is amongst one of the biggest mining related infrastructure developments, other small but equally important projects included: the N$159 million Rössing Uranium paid to state-owned utilities for provision of electricity, rail transport, water and telecommunications in 2008 (Aspermont UK, 2010: 3); ongoing maintenance and upgrade of gravel roads linking the mines to the surrounding towns, such as the mine road between the towns of Oranjemund and Rosh Pinah as well as the road between Luderitz and Oranjemund in the southern part of the country; provision of housing in and around mine towns, such as those constructed by Swakop Uranium in the western Arandis town, B2Gold in the central Otavi town and Dundee Precious Metals Tsumeb formerly known as

Namibian Customs Smelters in the northern Tsumeb town; and financial support towards school infrastructure development amongst others.

In addition to supporting the national railway infrastructure, mining also supports harbour facilities which in turn contributed to the wider economy. Mining activities are to a large extent driven by the operation of heavy machinery. Many of the heavy machinery due to their sheer size and weight are in most cases only transported into the country via the sea using huge cargo vessels. The cargo vessels and other supply vessels that make use of the port facilities are subject to port levies. This is an example of how the mining sector directly or indirectly contributed towards the diversification of the country's economy. Several of the mining vessels and boats operating in Namibian waters may also dock at one of the local ports to carry out repairs and maintenance work on the vessels, stock up on supplies or when refueling. In this way, the marine mining operations with their large crews provide a boost in the local economy of these harbour towns during such periods. In addition to making use of the local railway infrastructure and port facilities, the mining industry also depends strongly on the country's national airline and local-private airlines to transport their crew to and from the mining operations. All of which have the potential to diversify the economy and thereby contribute to overall economic development.

In summary, the country's rapid growing uranium industry in recent years is testimony of Namibia's reliance on mining for generating foreign exchange earnings. In 2008 uranium production increased at both Rössing Uranium and newcomer Langer Heinrich to jointly push output of uranium oxide over 5 000 tonnes and propelling Namibia into fourth place in the ranking of world producers (CMN, 2008). Two uranium exploration companies namely Areva and Valencia Uranium received their mining licences in June and August 2008 respectively, while exploration companies Bannerman, Deep Yellow and Extract Resources continued to make good progress on their exploration activities (CMN, 2008). This further highlights the vibrant state of affair within the country's mineral sector. According to ICMM (2012), Namibia is ranked 25th in terms of the Mining Contribution Index (MCI)[5], Zambia is in

[5] The MCI is a preliminary mining contribution index developed by ICMM, with Oxford Policy Management (OPM), which ranks countries by the importance of mining and metals within each

1st place while Ghana and South Africa are 27 and 31 respectively. Namibia is amongst the top 20% countries with the highest MCI (ICMM, 2012).

3.2.2 SOCIO-ECONOMIC DEVELOPMENT: EMPLOYMENT CREATION

Mine employment on its own is generally small relative to the total national labour force. At a global level, the formal mining sector is estimated to have employed 3.7 million workers in 2010 according the International Labour Organization (ILO)[6]. While it is difficult to measure exactly how many people are employed as artisanal and small-scale miners owing to a general lack of regulation in the informal mining sector, estimates place the number at around 25 million. According to the recently published Namibia Labour Force Survey of 2012 report, the country's total labour force stood at 868 268 persons. Of the total labour force, 630 094 persons were employed which represents a rate of 72.6 percent. Of the total 630 094 employed persons, 11 240 were employed in the mining industry and this figure represents a mere 1.8 percent of the total employed population. In contrast, the agriculture, forestry and fishing sector combined provided employment for 27.4 percent of all employed person making it the largest industry in terms of employment (Ministry of Labour and Social Welfare, 2010). **Figure 3.3** shows Namibia's mining sector employment levels from 2000 to 2013.

The level of employment was at its peak in 2007 with a total of 8105 employees. Employment levels started to decrease towards the second half of 2007 and continued to decrease during 2008 and first half of 2009, where thereafter they started to gradually increase toward the end of 2009. The marked decrease in the number of employees from 2008 was aligned with the massive retrenchment exercise undertaken by Namdeb Diamond Corporation in line with the company's strategy to cope with the 2008 global economic crisis. The diamond corporation has been regarded as the largest private-sector employer within the county's mining

national economy (ICMM, 2012). "The MCI captures important aspects of the contribution from the non-fuel mineral sectors to national economies. The aim of the MCI is to highlight the importance of these sectors within national economies" (ICMM, 2012).

[6] The estimated figure is taken from Mining Facts website at http://www.miningfacts.org/Economy/How-many-jobs-depend-on-the-mining-industry/; last accessed 22 October 2013.

sector. However, with dwindling land-based diamond resources, the corporation's employment capacity is been placed under strain. In contrast, the country's uranium sector which has received relatively little attention in the past due to low uranium prices has started to show steady growth. Despite low uranium prices linked to the global economic crisis, Rössing Uranium showed resilience amidst the economic downturn. The number of Rössing Uranium employees has been increasing between 2007 and 2011 despite the overall number of people employed in the mining sector have coming down. Development of the new Langer Heinrich Uranium mine has also had a positive impact on employment creation within the sector and the country at large.

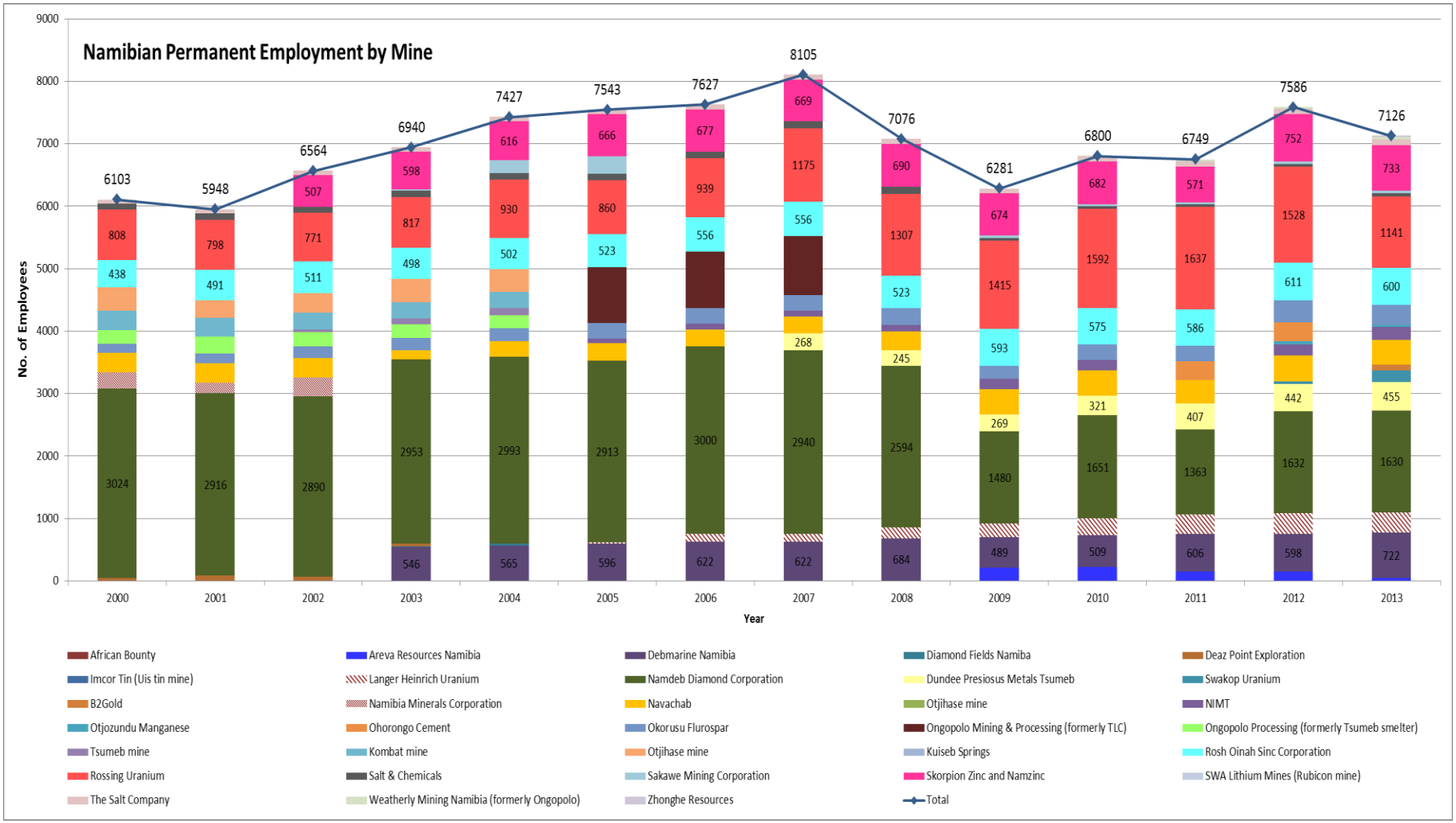

Figure 3-3: Namibian permanent employment by mine (Chamber of Mines of Namibia, 2014).

Despite its economic significance, there is often a misperception that mining is not a significant contributor to employment. While the number of people directly employed in the mining sector may appear small, the mining sector not only creates mining jobs but also generates employment indirectly. The mining sector has the potential to create thousands of jobs through its huge employment multiplier effect. The mining multiplier effect measures how many new jobs are generated in the whole economy for each worker directly employed in the mining sector. **Figure 3.4** shows a simplified diagram of the forward and backward linkages between a country's mining sector and the national economy. The forward linkages represent the sector's direct impact on the economy, while the backward linkages represent its indirect impacts on the economy. According to the 2011/12 CMN annual review, it is estimated that the multiplier effect for each mine employee is around 7. Therefore it is likely that the mining sector directly and indirectly provides an income for some 78 680 people (based on the calculation 11 240 x 7). This is a fairly significant figure considering the country's total population, estimated to be 2.09 million according to the latest Namibia Labour Force Survey of 2012. According to the same survey report, the overall unemployment rate for the country stands at 27.4 percent.

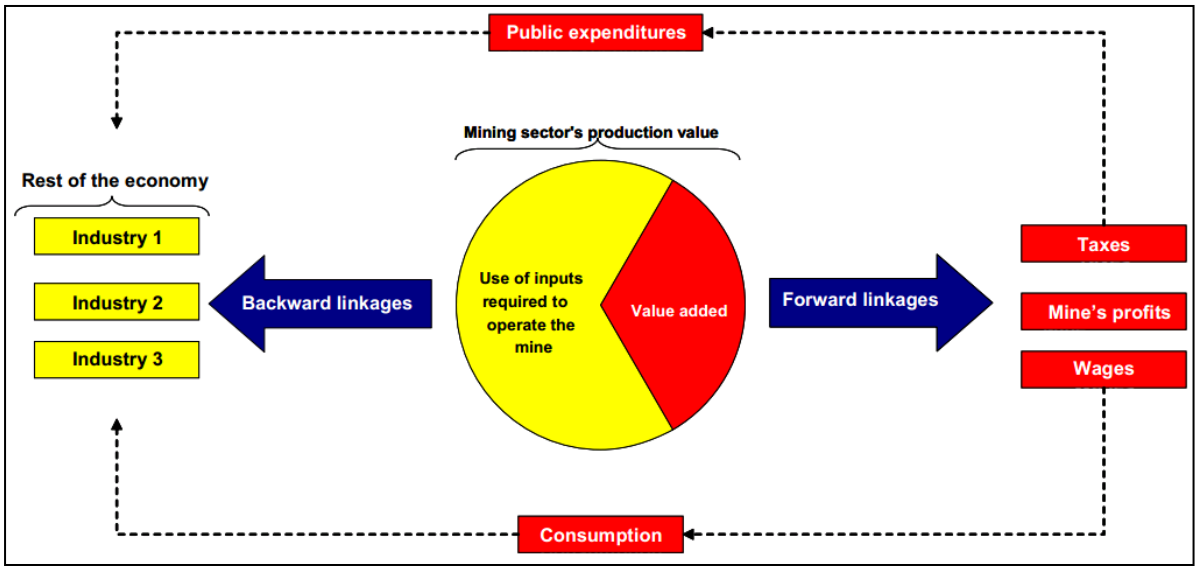

Figure 3-4: Generalized diagram showing the links between the mining sector and the economy, (Apoyo Consultoria, 2009).

While mining has the potential to create thousands of indirect jobs through its multiplier effect, there are certain obstacles that prevent the industry in the way of meaningful direct job creation. Firstly, the mining sector is generally less labour

intensive compared to other industries such as agriculture and manufacturing. Mining companies instead spend millions of dollars on purchasing machinery and auxiliary equipment which allow them to automate and streamline their operations. While this process potentially increases operational efficiency and productivity, it significantly reduces the amount of manual labour and consequently the need to employ more people within this industry. Secondly and related to the first point, mining is a highly specialized industry and as such demands for a highly qualified and skilled work force.

In Namibia like many other countries on the African continent, skills shortage in the mining industry is a major developmental obstacle. The industry continues to import the skills not available locally mainly from developed countries such as Australia, Canada, United States amongst others, thereby depriving the locals of meaningful employment. Thirdly, the low levels of mineral beneficiation taking place in Namibia and on the African continent at large, explains why the job creation capacity within the sector is limited. Fourthly, sound labour relationships between various stakeholders needed to support job creation within the mining sector are often overlooked. Disregard for human rights, breakdown in trust relationships which may result from a lack of credible and trusted operational procedures, and a general lack of respect for the law and procedures, are amongst some of the issues affecting the sector's capacity to employ more people.

3.2.3 SOCIO-ECONOMIC DEVELOPMENT: HUMAN RESOURCES

3.2.3.1 OVERVIEW

Mining contributes to the country's human resource development through education, capacity building and skills development. The conversion of natural resources into human resource capacity holds great potential to transform Namibia's resource-based economy into a knowledge-based economy. This is because unlike a resource-based economy which is based on finite resources, a knowledge-based economy is not. Therefore, in order to derive sustainable outcomes from mining activities, its support to education, capacity building and skills development is crucial. This support is required at every level of education starting from the primary level

through to the tertiary level. To this end mining companies have a social responsibility towards those communities in which they operate, to ensure that both the physical infrastructure and the human resources needed to staff and service educational facilities are put in place. Mining's social and corporate financial responsibility helps reduce the over reliance on donor funding for training programmes and support services. According to Weber-Fahr et al., (2001: 13) "mining companies may also provide training for small enterprises that supply them with goods and services, bringing them up to international standards in terms of quality and reliability". Mining also offers more accelerated multi-skills training opportunities through the sophisticated technological nature of modern mining (Ministry of Mines and Energy (MME), 2003: 30).

Namibia faces a critical shortage of skilled professionals and technical personnel in mining related fields across various levels (MME, 2003: 29). According to some views from within the mining sector, finding qualified local professionals especially mining engineers, geologists, metallurgists, surveyors, chemists and environmental scientists to fill specialized high local content requirements is very difficult (Zaamwani-Kamwi, 2012; Sherbourne, 2009; Mabizela, 2005: 98). While the government and the mining industry continue to encourage and facilitate the development of human resources to meet the ultimate requirements and challenges of the mining industry, a lot more remains to be done. Lack of capacity at training institutions and weak educational system are amongst some of the reasons cited as issues contributing to skills shortage.

According to the 2012 Global Competitiveness Report (GCR), in terms of the quality of education, Namibia was ranked at a low 127th place out of 144 countries in 2012; 122 out of 142 countries in 2011; and 112 out of 139 countries in 2010. **Figure 3.5** shows the most problematic factors identified for doing business in Namibia (World Economic Forum, 2012: 268). An inadequately educated workforce was reported as the most problematic factor for doing business in Namibia for the past three consecutive years, 2010 to 2012. This clearly highlights the worrying trend that the mining industry and the whole country at large face in terms of education, capacity building and skills development. In view of the prevailing situation which continues to

hamper national development, the mining industry is expected to play an essential role in supporting the national objectives of human resource development. Hence, according the Minerals Policy of Namibia:

> "The sophisticated technological nature of modern mining offers ample opportunities for the multi-skilled training of human resources working in this sector, which make the mining sector more attractive for employment" (MME, 2003: 30).

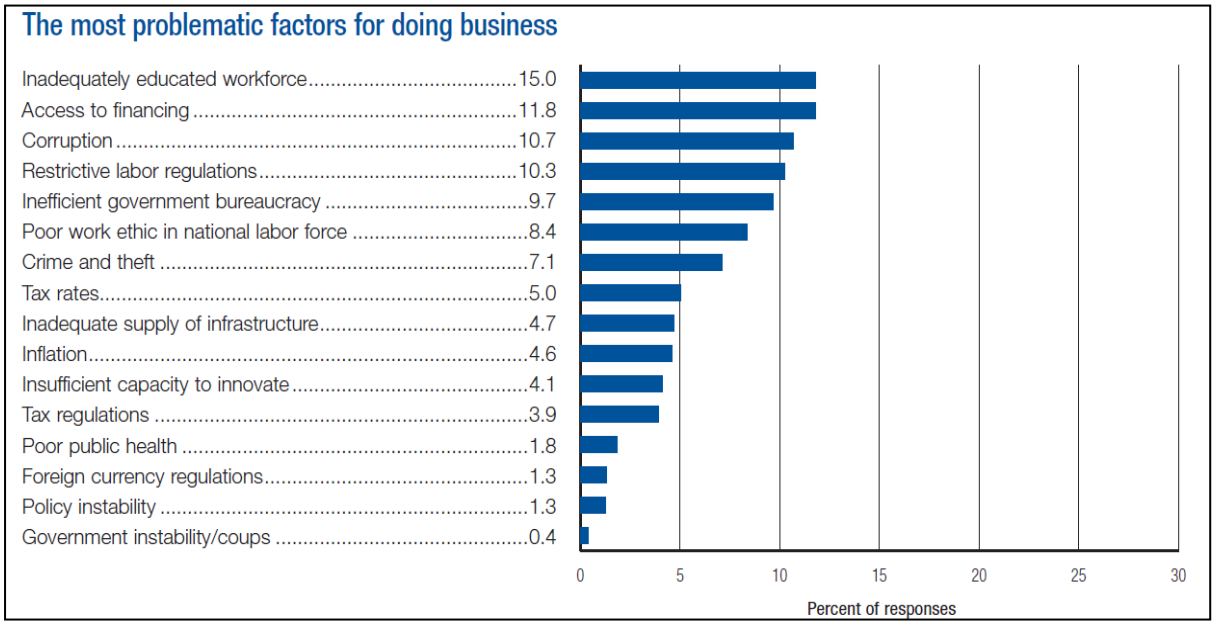

Figure 3-5: The most problematic factors for doing business in Namibia, (World Economic Forum, 2012).

The country's high number of uneducated and consequently unskilled labour force can be attributed to the extremely inequitable and discriminatory training system which the country inherited at independence (Krugmann, 2001: 19). While the bulk of the problem facing the country in terms of skills shortage especially amongst the majority black Namibians has been placed on decades of colonial and apartheid policies, the country has been independent for 23 years since gaining independence from South Africa in 1990. Thus, leaving the question of why the country has not managed to overcome the challenge of skills shortage until now unanswered. The government has since made concerted efforts to ensure equal access to quality education and skills training for all Namibians. This has been underpinned by large amounts of capital investment into the educational system, with the education sector

receiving a significant percentage of the national budget annually. Approximately 20% of the national budget is allocated to the country's education system with the aim to improve: educational infrastructure, quality of education amongst teachers and learners at all levels of education, as well as build adequate capacity and training at tertiary and vocational levels of education. Despite government's commendable efforts since Independence to redress education and training inequalities of the past, the country's education system remains fragmented. The education system remains characterized by notable weakness with respect to provision of quality education and training.

Another problem that has not only posed a challenge on human resource development in particular but on development in general is the impact of HIV/AIDS. As Mtegha (2005: 16) explains:

> "The negative impact of HIV/AIDS on economic growth of the countries includes erosion of the human resource base, diversion of meagre resources to health services and lack of ability to deal with the scourge. If communities are poor and helpless, despair is severe. At the mine operation level, this poverty has enormous implications. These include loss in productivity due to sickness and absenteeism and high turnover of employees. In addition the cost of doing business also escalates due to more frequent training of new staff, increased medical and insurance costs and so on. It also drives household-heads who are minors to be engaged in mining activities to survive".

3.2.3.2 FRAMEWORK OF HIGHER EDUCATION AND TRAINING

The greatest challenge facing the provision of quality education and training outcome is most evident at the tertiary education and vocational training levels. This is because the most weakness inherent in the education system is passed on with the learner throughout his primary and secondary phases of education. Teaching of Science and Mathematics has been an enormous challenge especially amongst black Namibians due mainly to their exclusion in the fields of Science and

Mathematics by the previous regime (Ministry of Basic Education Sport and Culture, 2003). This problem is thought to have been aggravated further by the accelerated development of the Information Communication Technology (ICT) era in which the country finds itself.

Namibia has formally three institutions considered as universities and several vocational training centres (VTCs). These include:

- The University of Namibia (UNAM) which consists of 11 campuses spread around the country, with the main campus located in the capital city, Windhoek. UNAM was established on 31 August 1992 and includes several Faculties such as Education, Science, Agriculture and Natural Resources, Health and Social Sciences to mention a few. In January 2008, the Faculty of Engineering and Information Technology was founded on the Ongwediva campus, Northern Namibia;

- The Polytechnic of Namibia (Polytechnic) was established in 1994 as an institute of tertiary education in Windhoek. It emerged from the Academy for Tertiary Education which was founded in 1980 by the former South African administration. It consists of two campuses both of which are located in Windhoek;

- The International University of Management (IUM) which is a privately owned university with campuses in four major parts of the country, namely Windhoek, Swakopmund, Walvis Bay and Ongwediva. The institute of Higher Education was founded in 1994 and offers Bachelor and Master programmes in fields such as Human Resources, Business Administration, Travel and Tourism amongst others; and

- Vocational Training Centres are locally regarded as alternative training institute options for students who fail to secure places in the formal mainstream institutes of higher learning such as UNAM and Polytechnic. There are several officially recognized vocational training centers in the country which include amongst many the Okakarara, Rundu, Valombola,

Zambezi, Windhoek vocational training centres (VTC) and the National Institute of Mining technology (NIMT).

3.2.3.3 SKILLS TRAINING

Namibia's economy is heavily dependent on the extraction and to some extent processing of its natural resources. It is thus not surprising that the institutions of higher education and vocational training broadly aim to produce graduates with knowledge, skills and abilities that will enable them to meaningfully contribute towards the country's economic development. It is these educated and skilled professionals that are required to address developmental challenges facing the different sectors of the economy. In particular the critical skills shortage faced by the country's minerals sector which greatly supports the country's economy. Both UNAM and the Polytechnic place emphasis on developing skills demanded by various sectors of the economy, however neither one has an outright lead in terms of skills development (Fischer, 2010: 2). UNAM training primarily consists of theoretical training within specialized fields such as Geology, Engineering, or Metallurgy amongst others. In contrast, Polytechnic focuses on technical training at the institution itself and which training is further supplemented by on-the-job training when students are sent for job attachment.

Commendable strides have been made by the institutions of higher learning in addressing some of the skill shortages, however some shortcoming still remain. According to Krugmann (2001: 20), "Namibia still lags behind neighbouring countries in educational output and level of education." One particular criticism levelled against these institutions is the quality of graduates they produce. Institutions of higher learning have for a long time had to deal with intrinsic weaknesses of primary and secondary education (Fischer, 2010: 1; Krugmann, 2001: 19). As a result, many students who complete their secondary school level often do not meet the institution's minimum entry level requirements. Those that manage to meet the entry level requirements often find it difficult to cope with the workload and pace of teaching. Many students are often not well-equipped to conduct independent research work, let alone use a computer or proficiently express themselves in

English (National Council for Higher Education (NCHE), 2011). It can thus be argued that the learning process is generally slow. This potentially is the reason which has led to the introduction of several bridging programmes to bring students up to par before they formally start their courses. In some instances, these institutions have had to lower the entry level requirements in order to accommodate more students. The concern with such practices is the question of whether the quality of education that students receive, is such that it will produce suitably qualified graduates for the local and international labour markets.

In the mineral sector specifically, there is a general tendency to employ graduates who hold qualifications from institutions of higher learning from neighboring countries such as South Africa, Zimbabwe and Zambia. This is because of the general perception that those institutions offer superior training and therefore, graduates from those institutions are better equipped for the labour market. It is therefore also not surprising that many local mining companies prefer to sponsor students who have excelled in their secondary level, to go study in neighboring countries. While many prestigious universities within the SADC can be found in neighboring South Africa, the achievements by local universities are commendable considering the circumstances in which they operate. For example, these universities face challenges in hiring adequate numbers of qualified lecturers and professors which results in many university subjects not being offered (Fischer, 2010). Linked to the above is the issue of crowded lecture halls due to a high learner-to-lecturer ratio and competition for scarce resources such as reading material. All of which if not attended to can derail all efforts of providing equitable and quality higher education.

Vocational education and training (VET) is a unique branch of education which places emphasis on training people in specific trades. It is sometimes referred to as technical education which differs from the broader sense of theory and abstract based education characteristic of tertiary education. The country's vocational training centres (VTCs) are largely governed by the National Training Authority (NTA). It advises the Minister of Education on matters concerning vocational education and training amongst other functions. VTCs provide crucial technical skills training to artisans who can specialize either as boilermakers, electricians, fitters and diesel

mechanics amongst others. Artisans provide important services to the many sectors of the economy, especially mining and manufacturing. Their skills are highly sought after such that artisan salaries are generally high compared to many other professions.

Namibia's vocational education and training system faces many similar challenges as those faced in the higher education and training system. Perhaps the two most pressing challenges faced by the VET system are a lack of sufficient training facilities and a lack of funding. There are essentially four state-owned VTCs and two privately owned, all of which provide training to aspiring artisans in the fields of study most relevant to the mining industry. These are: Okakarara, Rundu, Valombola, and Zambezi VTCs; Windhoek VTC and NIMT respectively. There are however other small private VET providers (Mabizela, 2005: 91). While it may be difficult to ascertain the exact number of students eligible to enter into the country's VET system annually, indications are that this number is high. Recognizing constraints that continued to hamper the development of VET in the country, government decided to pass a new "Vocational Education and Training Act" in 2008. According to the Act, its objectives are to:

- Achieve an effective and sustainable system of skills formation that is aligned with the labour market and provides the skills at an optimal pace required to keep up-to-date with accelerated development. As well as promote access, equity and quality in VET which is needed to ensure a greater number of student participation in VET;
- Establish a stable organization and management system that will be responsible for the overall administration of VET and which will be accountable to Parliament through the Minister of Education; and
- Establish and maintain a suitable partnership between the government, private sector and civil society to resource the provision of VET.

3.2.4 MINING RESEARCH AND TECHNOLOGY TRANSFER

Knowledge-based economies are underpinned by a strong culture of scientific research and technological development. The mining industry is recognized worldwide for its potential to support the development of a number of critical technological innovations. Many of which have enabled mining companies to reduce their operational costs, extend the range of ores that can be recovered, increase productivity, improve occupational health and minimize environmental degradation. In general, while some technological advancement may decrease the demand for labour, the process is often associated with a desirable change in the labour market. It calls for a change from an unskilled, uneducated workforce to that possessing the relevant technical ability and appropriate level of education. In addition to helping improve the levels of technical skills and education within the labour market, many mining technological innovations have extended the viability of mining operations for a number of commodities.

A small number of technological innovations have been developed in Namibia while the majority has been developed outside Namibia. Debmarine Namibia is an example of a mining company that has been able to advance technological innovation in the marine diamond exploration, reserve assessment, mining and onboard processing. The Langer Heinrich mine in the Erongo Region boasts with the first of its kind uranium processing plant in the whole of southern Africa. In 2008, Okorusu Flurospar mine near Otjiwarongo which produces near pure (97.5%) acid grade fluorspar (CaF_2) won the Solvay Group prize for sustainable innovation (CMN, 2008: 35). The government of Namibia supports and encourages the mining industry to undertake and apply R&D of new technologies. With R&D being funded primarily through the private sector and donor organizations, the government through the Ministry of Finance (MF) is considering tax incentives to promote R&D in local beneficiation opportunities. While there are several success stories with regards to research, development and technology in Namibia, a lot more however remains to be done; especially when it comes to the quality of research and the amount of funding availed to conduct research work.

According to the 2012 GCR, Namibia was ranked 90th place out of a 144 countries in terms of its capacity for innovation; 92 in terms of "quality of scientific research institutions" criteria; 86th place in terms of company spending on R&D; 73 in terms of university-industry collaboration in R&D; 90th place in terms of government's procurement of advanced tech products; and 138 in terms of availability of scientists and engineers. The overall poor performance reflects the government and private sector's inadequate spending on R&D. Expenditure of R&D is a key indicator of government and private sector efforts to obtain a competitive advantage. With specific regards to the mining industry's total expenditure on R&D, accurate and reliable figures are hard to come across. The lack of appropriate accounting and record management practice within the mining industry has resulted in a poor reflection of the industry's total research effort. Despite this view, the general consensus is that the mining sector needs to regain its share in public R&D funding.

3.3 CONCLUSION

Mining has been and continues to be the cornerstone of Namibia's economy. This is attributed to the country's relative abundant natural mineral resources. The fact that the country's mining sector operates in a competitive global market means that it is also susceptible to external effects, such as the effect of the global economic crisis of 2008. Despite the crisis however, Namibia's mining sector remained attractive to global mining and exploration companies. This has mainly been attributed to factors such as: low political risk, favorable investment environment, well-developed mining industry, good infrastructure, security of tenure, effective and transparent mining taxation regime amongst others. The sector therefore looks set to maintain its importance to the country's economy through the various revenue streams.

The number of people directly employed in the mining sector remains moderate relative to other sectors of the economy such as agriculture. The total figure of mine employees in the country reduced significantly between 2008 and 2009 following the global economic crisis. While the figure has not rebound to its historical 2007 high of 8105 employees, there has been a commendable growth since 2010. The mining industry continues to play a significant role in the country's development by serving

as an instrument for social and economic reconstruction, transformation and development. This process is maintained through the ongoing activities such as stimulating and sustaining economic growth; creation of meaningful employment and promotion of economic empowerment; reducing income inequalities and poverty; and increasing funding for R&D.

4 CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION OF RESULTS

4.1 EFFECTIVENESS OF NATIONAL POLICIES IN ECONOMIC DEVELOPMENT

4.1.1 ECONOMIC OPPORTUNITY AND EMPOWERMENT

Namibia is ranked amongst the countries with the highest per capita income of "N$25,675 in 2011/12, or US$3,537 (both figures in real terms)" (National Planning Commission (NPC), 2013: 9) in the world, despite the fact that a large percentage of its population lives below the poverty line. The country is endowed with abundant mineral natural resources and as such, its mining sector holds huge potential to significantly influence national development goals. Despite the sector's significant contribution to economic growth, there are growing concerns that it does not contribute enough by way of creating adequate and equitable opportunities for economic empowerment despite its large economic footprint. The concerns are raised in view that mineral wealth generated through mining only benefits foreign multinational corporations, who plough back very little into the county's development. Thus, a substantial amount of the country's mineral wealth is transferred to foreign countries, often leaving the economy of the country of origin worse off and its locals further impoverished.

According to a 2011 media statement by Honorable Isak Katali,

> "a disturbing phenomenon had developed whereby ownership of the country's resources is sold through licences internationally on the back of the Namibian government through speculative activities without government deriving any benefits through sales taxes, values added taxes, or stamp duties" (MME, 2011: 3).

Growing pressure from various quarters of society continues to be the driving force behind initiatives to address the issue of local participation and ownership shareholding within the mining sector. Majority shareholding in major mining companies in the country's mineral sector is held by foreign multinational corporations as highlighted in **Table 4.1**.

Table 4-1: Ownership shareholding in Namibia's major mining companies.

Company	Ultimate Shareholders	Operations
AngloGold Ashanti	100% AngloGold Ashanti (NYSE)	Navachab gold mine ML31
AREVA	100% AREVA	Trekkopje uranium mine ML151
Diamonds Fields	Diamond Fields International (TSX)	ML111 and ML32
Langer Heinrich	100% Paladin Energy (ASX)	Langer Heinrich uranium mine ML140
Namdeb	50% GRN, 50% De Beers (45% Anglo American)	Atlantic 1 concession for Namdeb Orange River, Bogenfels, Elizabeth Bay, Mining Area 1, Douglas Bay, Atlantic 1, Midwater (NDTC + NamGem)
Namibia Custom Smelters	100% Dundee Precious Metals (TSX)	Tsumeb smelter
Okorusu Fluorspar	100% Solvay Fluor (EuroNext)	Okorusu fluorspar mine ML90
Rosh Pinah Zinc	Glencore recent purchase	Rosh Pinah zinc and lead mine ML39
Rössing Uranium	69% Rio Tinto 15% (LSE) government of Iran 10% IDC of South Africa 3% GRN 3% Individuals	Rössing uranium mine ML28
Sakawe	76% Samicor BV 10% Longlife Mining 8% GRN 2% National Youth Service 4% Employees	ML36 A-J, ML 51, ML 103A (LLD Diamonds)
Salt Company	100% Klein Family	ML 66 A-J, ML 71 A-C, ML 83 A-C
Salt & Chemicals	100% Chlor-Alkali Holdings	Walvis Bay salt pan ML 37
Skorpion Zinc	100% Vedanta (LSE)	Skorpion zinc mine ML108 ,Namzinc refinery
Weatherly Mining Namibia	24% RAB Capital 17.56% Matterhorn 8.38% Bank Windhoek 6.75% Rod Webster 4.75% Wolf Martinick 3.23% GIPF (LSE-AIM)	Otjihase, Matchless, Tsumeb West, Kombat, Tschudi, Elbe, Berg Aukas, Asis Far West, Gross Otavi (NCS)

Source: (Zaamwani-Kamwi, 2012)

In March 2011, the government announced its proposed strategic minerals policy which would see the state-owned mining company “Epangelo” owning all “strategic minerals” in the country. These strategic minerals include uranium, gold, copper coal, diamonds and rare earth metals. The state-owned company was created to effect direct State participation in the country’s mining sector. A move viewed by many members of the CMN as a shift away from government’s commonly accepted role of regulating the mining sector, providing an enabling environment for creation of wealth and economic growth (CMN, 2012: 5). According to the report, while the Chamber did not oppose the concept of state ownership of a minority shareholding in the country’s mining industry, it however did not condone the blanket issuing of ownership of most minerals and metal rights to Epangelo (CMN, 2012: 5).

The government having recognized that the country's mining sector is dominated by a number of foreign-owned corporations, started to develop strategies to support and increase local participation in the development of the mining sector. The strategies are in-line with the provision of the Minerals Policy to develop opportunities for the disadvantaged majority to participate fully in the mining sector and to benefit from it. The government has on several occasions called on private sector companies to embrace public-private partnership in order to allow greater local participation in the mining sector, private sector's response to government's calls has however been slow and unsatisfactory for the most part. As part of the empowerment focus, in October 2011, the government announced plans for its New Equitable Economic Empowerment Framework (NEEEF) policy which would replace the ostensibly failed Transformation of Economic and Social Empowerment Framework (TESEF). The NEEEF is intended to fast track the efforts of government in trying to achieve more equitable levels of economic transformation and empowerment for its people. According to the NEEEF, its objectives are but not limited to:

> "Ensuring the sharing of Namibian resources in an equitable and sustainable basis by the people of Namibia; creating a socially just society; creating vehicles of empowerment; removing barriers of socio-economic advancement in order to enable previously disadvantaged persons to access productive assets and opportunities for empowerment; and equitable empowerment is addressing disparities occasioned by class, gender and generational relationships" (Office of the Prime Minister, 2012: 8).

The goals of the policy framework are well-defined however the implementation, monitoring and evaluation processes needed to support these goals are lacking. The absence of a thorough plan of action to support the NEEEF on the part of government appears to suggest its indecisiveness on the issue. Decisive action to address the current status quo is required sooner than later. If the current situation is not addressed soon it will not only continue to hinder Namibian participation in the mining sector but also meaningful economic empowerment.

4.1.2 MINING SECTOR LICENSING FRAMEWORK

Prospecting and mining licences in Namibia are regulated under the Minerals (Prospecting and Mining) Act[7]. The Act makes provision for five categories of licences namely: Reconnaissance Licence (RL); Exclusive Reconnaissance Licence (ERL); Exclusive Prospecting Licence (EPL); Mineral Deposit Retention Licence (MDRL); and Mining Licence (ML). The number of current licences is presented in **Table 4.2**.

Table 4-2: List of Namibia's current prospecting and mining licences as at 10 September.

Licence Type	Number of Licences	Status
RL	1	Pending
ERL	8	Expired
EPL	773	Granted
EPL	550	Pending
MDRL	2	Pending
ML	137	Granted
ML	33	Pending

Source: (Ministry of Mines and Energy, 2013)

Considering the high number of current EPLs, this may be viewed as an indication of the huge interest in prospecting activities in the country. Despite the potential interest, a total of 550 EPL applications have not yet been granted approval. The majority of which are likely to be applications for renewal licences. The reason for the high number of pending applications according to an official from the MME has come about as a result of the increasing cases of land locking. A more disturbing practice connected to land-locked areas is the use of claim holder's ownership right to raise money on the stock markets. This, in recent years seems to have become a commonly practiced phenomenon. Whereby, a company would apply for a mineral prospecting or mining licence with the promise of undertaking exploration or mining activity. Once a licence is granted, the company owner would then proceed to list the company on the international stock market in order to secure funding for the project. While the company may eventually secure the funds, there is no guarantee that the funds generated on the back of Namibia's mineral wealth will ever be spent in the

[7] Minerals (Prospecting and Mining) Act, 1992 (Act 33 of 1992).

country. The issue of land locking although also present amongst mining licence holders is not as prevalent. **Figure 4.1** shows a map of the current prospecting and mining licences in the country as at September 2013.

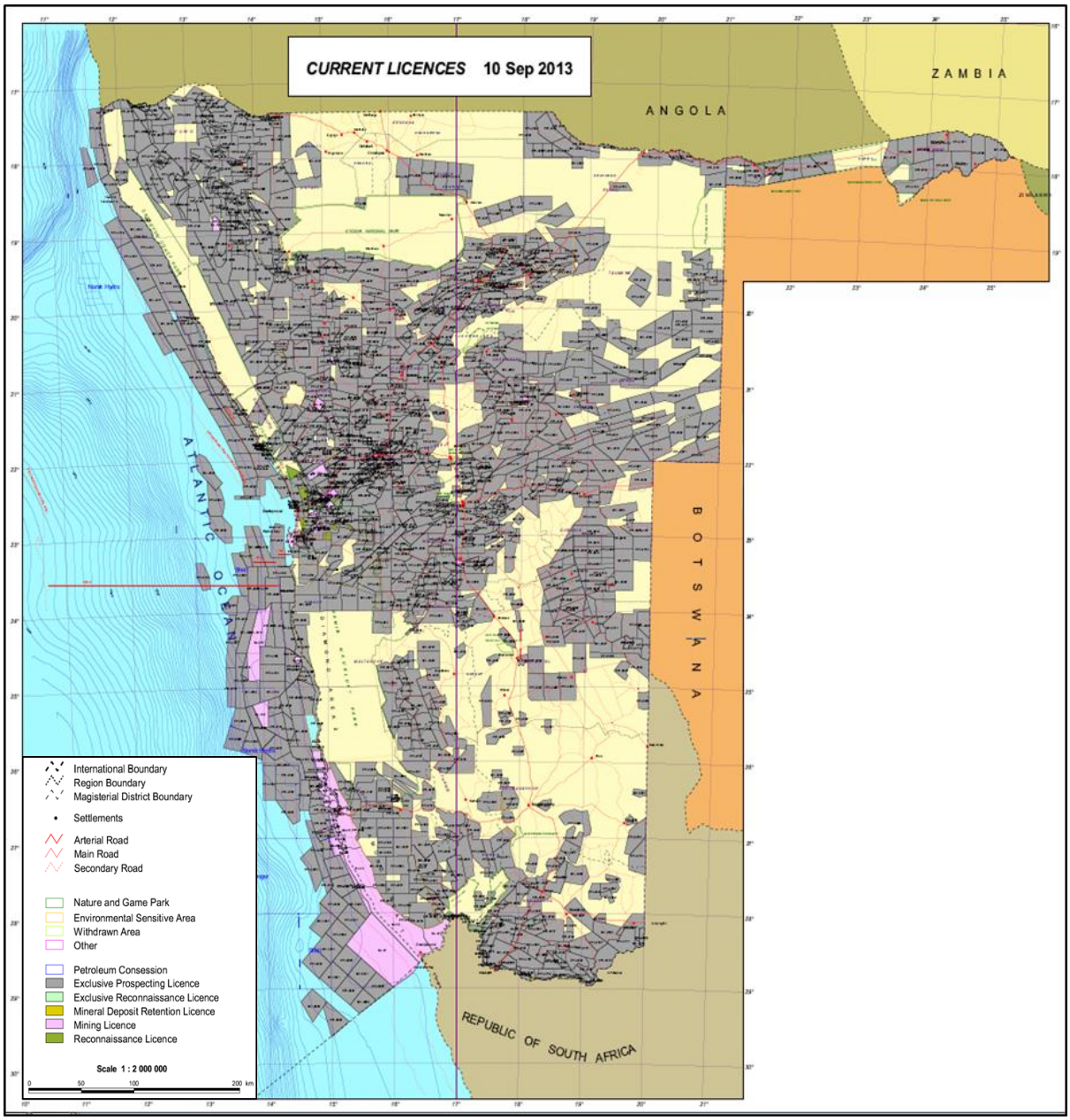

Figure 4-1: Map of Namibia's current prospecting and mining licences as at 10 September 2013, (Ministry of Mines and Energy, 2013).

The Minister of Mines and Energy exercises overall powers to grant or refuse mineral prospecting or mining licences. Such powers are provided for under the Minerals (Prospecting and Mining) Act under section 69 of the Act in respect of

exclusive prospecting licences and section 92 of the Act in respect of mining licences. While the Minerals (Prospecting and Mining) Act provides broad based guidelines in terms of the criteria for issuing mineral prospecting or mining licences, there are no proper standards to which the Minister can be held accountable when it comes to the decision on issuing of prospecting or mining licences. Thus, it can be argued that the Act provides the Minister with sole administrative discretion on the criteria to apply when issuing prospecting or mining licences.

The government undertakes to ensure security of tenure through effective legislation and the provision of an environment conducive to investment. The tenure on the various licences is as follows: RLs are valid for six months on a non-renewable basis and only in special cases are they granted as exclusive; EPLs are three-year licences which are may be extended twice for two-year periods; MDRLs are valid for five years and can be renewed for a further two-year period; and MLs are valid for 25 years or the life of mine, with renewals valid for 15-year periods. With the security of tenure is guaranteed, the risk of investment is greatly reduced since investors are protected against arbitrary revocation of claims. However in some case this security of tenure intended to further stimulate exploration and mining has instead exacerbated the problem of land locking.

The lack of formal structures needed to support and regulate joint ventures between local claim holders and foreign investors, is viewed as a major factor disadvantaging locals from meaningful participation in their claims. For this reasons, many locals who own EPLs have resorted to selling their entire rights in a claim to either well-connected business individuals or large and well-financed companies. Often the rights are sold for an insignificant sum of money and the local claim holders are not even offered the opportunity to participate further in the development of the claim. In some cases where a joint venture agreement has been reached between a local claim holder and an investor, many of such cases have ended in dispute between the parties. One such highly publicized High Court case is that of “Amakutuwa v Metals Namibia (pty) Ltd and Others[8]”.

[8] Amakutuwa v Metals Namibia (pty) Ltd and Others (A 36/2009) [2009] NAHC 109 (30 July 2009).

While the government through the MME is the sole regulatory agency for exploration and mining in the country, it has no legal powers to control how parties negotiate agreements between them. It however has control over the awarding of licences and this should be seen as leverage to promote good licensing practices. In addition licensing reform can also be considered as way to improve the regulatory framework so that it provides clear and secure guidelines which are both conducive for investment and beneficial for promoting wider, genuine economic and social development.

4.1.3 TAXATION OVERVIEW

Direct tax revenue generated from the mining sector remains an importance source of income to the Namibian economy. It is estimated that since independence, corporate taxes from mining companies accounted for between 30% and 50% of all receipts (MME, 2003: 7). Non-diamond mining companies pay a basic corporate income tax rate of 37.5% on profits, while diamond mining companies pay a tax rate of 55%. In a country characterized by a thriving mining sector and a contrastingly high rate of unemployment, public perception of mining company profits easily evoke debates on mining taxation. Mining taxation is not unique to Namibia and neither are the challenges associated with the taxation regime.

The issue of mining taxation is currently amongst the most debated topics in the mining sector, both internationally and at home. The debate is centered on evaluating the competitiveness of the country's mining taxation relatively to other countries' taxation. On the one side, the government argues that mining companies pay too little tax relative to the profits they make, and on the other, companies argue that they pay too much tax. The general public perceives the issue with mixed views. Some side with the government and contend that due to low mining taxes, government is unable to adequately fund many of the national development programmes. Others contend that companies pay satisfactory taxes, but that government priorities are instead misplaced. As a result, they rarely have confidence in the government's ability to appropriately manage tax revenues. Despite the varying views, the ultimate responsibility rests with the government to devise a well-

balanced mining tax regime. This entails one that considers both the profit interest of investors on the one hand, as well as optimizing government's source of fiscal revenue on the other.

What then is an optimal level of taxation on mining? In theory (Otto et al., 2006) describes the optimal level of taxation as being somewhere between two extremes. On the one extreme, a tax rate that takes all (e.g. 100%) of the wealth generated through mining; and on the other a tax rate that is too low (e.g. zero percent) (see **Figure 4.2**). The authors however concur that in practice, it is not easy to determine the optimal level of taxation. This the authors argue "would require knowledge of how a firm's behavior is altered in the present and, more importantly, in the future by changing levels of taxation" (Otto et al., 2006: 8). It is therefore not only difficult to predict how firms would behave towards a change in the level of taxation; but also accurately forecasting the flow of future profits from mining changes especially in view of volatile commodity prices. As Robin Sherbourne notes, "Mining and mining revenues are cyclical and treating all revenues as current income is short-sighted – government should develop [sustainable long-term] fiscal mechanisms" (Sherbourne, 2009: 26).

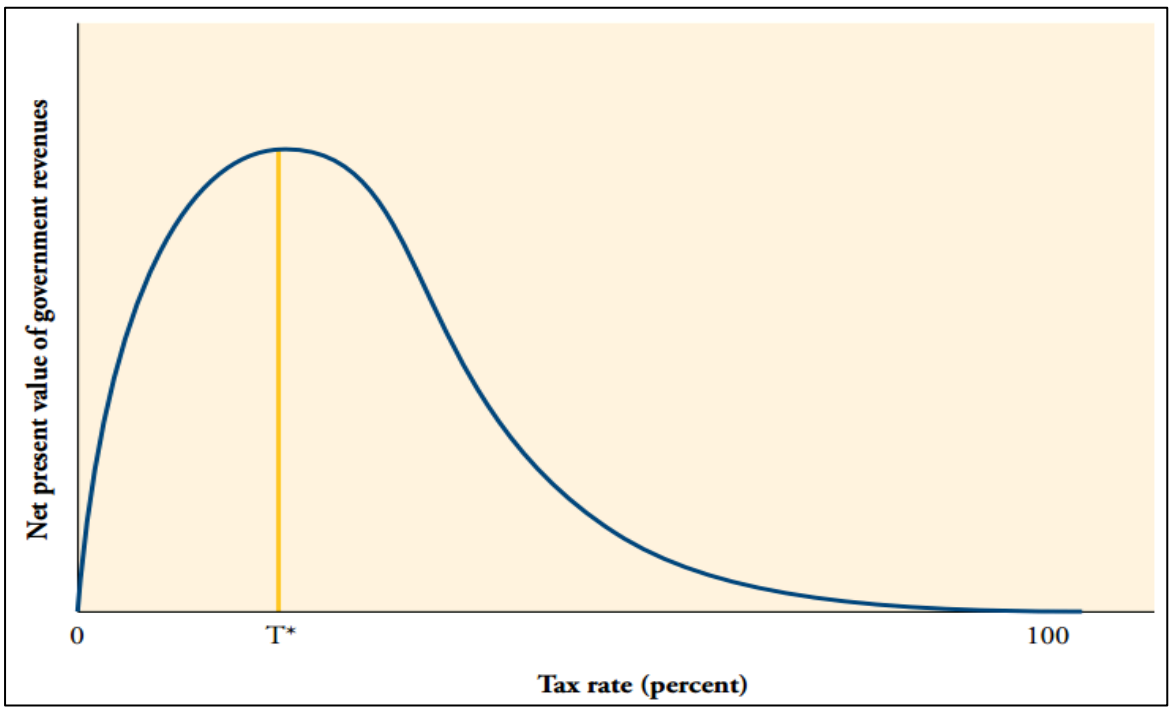

Figure 4-2: Setting an optimal effective tax rate, (Tadros & Svensson, 2010 after Otto et al., 2006).

Table 4.8 shows a detailed list of principal features of mining tax regimes for 16 countries based on a comparative study conducted by PricewaterhouseCoopers in 1998. While the report was conducted some years back and does not include data from Namibia, the data presented in the table is still relevant for the purpose of the current study. Given the importance of mining taxation to Namibia's revenue, it is conceivable that government would continually seek to maximize mining tax revenues. In addition to the standing 37.5% and 55% corporate taxes for non-diamond and diamond mining companies respectively, mining companies pay an additional tax on gross sales in the form of royalty. Non-diamond mining companies pay a royalty rate between 2-3% on gross sales, while diamond mining companies pay a 10% royalty rate. The country's mining royalty rates are fairly similar to those in use in various countries in the region. Botswana imposes a royalty rate between 3-10% on net smelter return; Ghana and Mozambique impose a rate between 3-12% on gross sales (Tadros & Svensson, 2010: 3); while in South Africa the royalty rate payable ranges between 0.5-7 percent as outlined in the country's Royalty Act[9]. It is evident that based on the measures of comparison, Namibia's current overall corporate tax rate at 37.5% (with the exception of diamond mining companies) is internationally competitive.

[9] The Mineral and Petroleum Resources Development Act 28 of 2002 ('the MPRD Act') allows the State, as custodian of South Africa's mineral and petroleum resources, to impose royalties on the transfer of mineral resources.

Table 4-3: Principal features of mining tax regimes.

	Australia (Western Australia)	Argentina	Bolivia	Botswana	Brazil	Canada (Ontario)	Chile	Guyana
National Income Tax								
Tax rate	36%	33%	25%	25%	33%	28%+4% surtax: 29.12%	15% plus 35% on distribution. Credit available for 15%.	**35%**
Minimum tax			Complementary Mining Tax at a rate that varies according to mineral and international prices			0.225% of net assets (4% surtax is creditable)		2% of turnover
Depreciation								
Mine building	Buildings – SL method Rates vary depending on nature of asset. SL or DB may be used.	Infrastructure: 3 years 60%:20%:20% Other: 33.33% SL	In accordance with GAAP ie. over estimated life of asset Units of production method may be used.	10% SL	4% SL	100% deduction for assets acquired before production. Otherwise 25% DB.	12.5% SL	20% SL
Mine equipment				10% SL	20% SL		33.3% SL	20% SL
Processing building				10% SL	4% SL		12.5% SL	20% SL
Processing equipment				10% SL	20% SL		33.3% SL	20% SL
Cost of concession	Non-deductible with limited exceptions	Units of production	100%	10% SL	Units of production	30% DB	Units of production	20% SL
Preproduction dev.	10% SL	Units of production	100%	10%	20% SL	100%	16.7% SL	20% SL
Preproduction exp.	100%	Units of production	100%	10%	20% SL	100%	16.7% SL	20% SL
On-going exploration	100%	100%	100%	100%	25% SL	Off-site: 100% On-site: 30%	100%	100%
Loss carry forward	Indefinite	5 years	Indefinite	Indefinite	Indefinite	3 year carry back, 7 year carry forward	Indefinite	Indefinite
Depletion Allowance								
Other	Accelerated deductions for transport facilities and site rehabilitation.	Double deduction for expenditure relating to technical/economic feasibility of project.				Resources allowance of 25% of resource profits, in lieu of deduction of provincial tax		
State Income Tax								
Tax rate	None	1% of revenue (depending on province)	Complementary Mining Tax as described above	None	None	13.5% of federal base	None	None
State Mining Tax Royalty								
Tax rate	3 systems: - flat rate per tonne - % of revenue - % of profit	3% net smelter return		15% of gross sales less realisation expenses	Gold: 3% gross sales	20% of taxable profit Exemption for first C$500,000 of profits		Gold: 5% gross sales
Gold: 5% gross sales								
Depreciation						30% SL (100% for assets acquired before production)		
Mining assets						15% SL		
Processing assets						100%		
Preproduction dev						100%		
Exploration expenditure						Specified % of cost of processing asset (max 65% of profit; min 15% of profit)		
Processing allowance								

	Indonesia	Mexico	Peru	South Africa	Suriname	United States (Colorado)	Venezuela	Zimbabwe
National Income Tax								
Tax rate	30%	34%	30%	43-(215/x)%: companies liable to secondary tax 51-(255/x) %: companies exempt from secondary tax	35% (5% credit on reinvested profits)	35%	30%	37.5% 35% for holders of Special Mining Licences
Minimum tax		1.8% of gross assets (income tax can be carried back 3 years and forward 10 years)	0.5% of net assets as at end of 1997 year.	Secondary Tax: 12.5% on net amount of dividend		20% of adjusted taxable profit		
Depreciation								
Mine building	10% or 20% SL	10% SL	3% SL	100%	25% SL	7% DB	Rates vary depending on nature of asset. SL method is used.	100%
Mine equipment	10% to 100% SL or DB	10% SL	20% SL	100%	25% SL	7% DB		100%
Processing building	10% or 20% SL	6% SL	3% SL	100%	25% SL	7% DB		100%
Processing equipment	10% to 100% SL or DB	6% SL	20% SL	100%	25% SL	7% DB		100%
Cost of concession	10% to 100% SL or DB	10% SL	Units of production	Non-deductible	100%		Units of production	Non-deductible
Preproduction dev.	10% to 100% SL or DB		Units of production/100%	100%	100%	70% in first year. Balance on SL basis over 5 years.	Units of production	100%
Preproduction exp.	10% to 100% SL or DB		Units of production/100%	100%	100%		Units of production	100%
On-going exploration	100%	100% or 3 years	100%	100%			100%	100%
Loss carry forward	8 years	10 years	4 years	Indefinite	3 year carry back 10 year carry forward	2 year carry back, 20 year carry forward	3 years	Indefinite
Depletion Allowance						Lesser of 15% gross income or 50% of net income (for gold, silver, copper, iron ore).		
Other		Lump sum depreciation; operation fees	8% workers profit share calculated on net income before tax	Post 1973 gold mine: 10% capital allowance. Post 1990 gold mine: 12% capital allowance.				Additional 50% investment allowance on training buildings
State Income Tax Tax rate	None	None	None	None	None	5% of federal base	None	None
State Mining Tax Royalty								
Tax rate	<2000kg: US$225 per kg >2000kg: US$235 per kg (Gold) US$0.025-US$3.00 per hectare/per annum plus Land & Building tax		Metallic: US$2 per year/per hectare Non-metallic: US$1 per year/per hectare		Gold: 2% gross sales Other: 2% net sales	Severance tax 2.25% of gross income > US$11m Property tax: % of greater of 25% of net sales or net sales less operating costs.	Gold: 1% Base metals: 3%	0.875% of gross sales to MMZA
Depreciation Mining assets Processing assets Preproduction dev Exploration expenditure Processing allowance								

Source: (PricewaterhouseCoopers, 1998)

4.1.4 MINERAL REVENUE REDISTRIBUTION COUNTRY CASE STUDY: CHILE AND NAMIBIA

Chile is often used as the epitome of the best fiscal systems for developing countries, hence the relevance of comparing the practice for mineral revenue collection and redistribution between Chile and Namibia. Chile is divided into 15 regions whereas Namibia is divided into 14 regions. In both countries, mineral revenues are paid to the central government and in both cases spending of such revenues is subject to the government's general resource allocation strategies which in principle ought to be aligned with national development strategies. This is generally viewed as the best way of dealing with the redistribution of mineral revenues. This is particularly the case due to the fact that mineral resources are considered to belong to all the citizens and not just the mining communities. In particular, the Namibian government treats all its minerals revenues as part of the national resource endowment. Minerals revenue redistribution in theory should reach mining regions and mining communities only via general government expenditure allocations. However, in practice this is often not the case considering that mining regions and mining communities often tend to be better resourced and developed than non-mining regions and non-mining communities.

This demonstrates that local benefits from mining do not necessarily require revenue redistribution. According to ICMM (2009: 48) Chile's main mining area is said to have experienced faster economic growth and poverty reduction than Chile as a whole. A similar trend has been experienced for many of Namibia's main mining regions (e.g. Erongo, Karas and Otjikoto regions). However, unlike Chile where economic growth has been experienced by much larger numbers of communities within and near the main mining area, in Namibia, it appears that economic growth has been restricted mostly to local mining communities. There are a number of factors that may explain this contrast, such as population density, power supply and infrastructure development.

Population Density - Despite the fact that both countries have fairly similar land areas (Chile is approximately 756 102 km^2, Namibia is approximately 824 269 km^2. Chile's population is estimated at 17.07 million (July 2012) and is the world's 62nd most populated country (KPMG International, 2014: 4), Namibia's population is

estimated at 2.09 million (2012) according to Namibia Statisctics Agency (2013: 3). It is clearly evident that Namibia is far sparsely populated and with its many remote communities, it is virtually difficult for a large number of communites to benefit locally from mining.

Power Supply – Chilean power sector is relatively well regulated in the sense that the sector is better positioned to promote investment in energy infrastructure and improve the energy sector. This includes increased energy efficiency, development of renewable energies and the acceleration of permits for new projects. Namibia's power sector on the other hand is characterized by an anticompetitive regulatory framework. The high electricity prices imposed by the country's energy regulator NAMPOWRER is a major obstacle for wide spread development amongst regional communities.

Infrastructure Development – It is believed that Chile's infrastructure has seen a significant inflow of investment with the country currently having over US$60 billion infrastructure projects in the pipeline (KPMG International, 2014: 11). Namibia infrastructure development while being fairly competive amongst other countries within the region, it has however not reached the level that of Chile. This means that mining companies first have to consider developing local infrustracture such as roads, houses, schools and clinics before extending similar servises to nearby local communities and later to distant communities.

While it often happens that development progressively takes place within mining communities, this does not exclude the need to develop other non-mining communities. It should equally not be interpreted to mean that mining communities ought to receive lower levels of minerals revenues in relation to non-mining communities. In fact, preferential arrangements for local mining communities are needed to maintain healthy partnership arrangements between mining companies and local authorities. This, as the ICMM explains, "is because additional public expenditures may be necessary to compensate local communities for damage and disruption, including population expansion, that go beyond any likely commitments of the mining companies in their formal license agreements" (ICMM, 2009: 49).

4.2 MINING SECTOR CONTRIBUTION TO GDP

The amount of revenue contributed to the national economy from mining activities varies from year to year. Adverse market factors operating either at an international or local level may negatively affect the sector's ability to contribute meaningfully to the national economy. One such factor that has affected not only the country's mining sector but the overall economy is the global economic crisis that started in late 2007. Although other major sectors of the economy were affected by the crisis, the minerals sector suffered the most due to the sharp fall in mineral commodity prices. **Table 4.4** provides a summary of the primary, secondary and tertiary sectors' contributions towards GDP in current prices (N$ million) for the year starting 2000 to 2011.

Table 4-4: Sector value added to GDP in current prices - N$ Million (Namibia Statistics Agency, 2012).

Industry	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Agriculture & forestry (N$ mil)	1664	1510	1914	2032	2252	2860	3275	3045	2968	2989	3360	3771
Fishing & fish process on board (N$ mil)	1256	1453	1630	1775	1564	1932	1948	2330	2411	2428	2539	2709
Mining & quarrying (N$ mil)	2690	3662	4793	2992	4148	4257	6654	6816	11772	8003	6882	8659
Diamond mining	1934	2854	3591	2630	3444	3182	4591	3535	5500	2749	4042	6567
Other mining & quarrying	756	808	1202	362	704	1075	2063	3281	6272	5254	2840	2092
Total mining contribution to GDP (%)	**9.9**	**11.9**	**13.5**	**8.0**	**9.7**	**9.2**	**11**	**10.0**	**16.1**	**10.7**	**8.5**	**9.5**
Total Primary Industries cont. to GDP (%)	**20.7**	**21.7**	**23.5**	**18.2**	**18.7**	**19.6**	**22.0**	**19.6**	**23.5**	**17.9**	**15.8**	**16.7**
Primary Industries (N$ mil)	**5610**	**6625**	**8337**	**6799**	**7964**	**9049**	**11877**	**12191**	**17151**	**13420**	**12781**	**15139**
Manufacturing (N$ mil)	3169	3553	4227	5149	5339	5737	7791	9775	9404	10142	10581	11034
Electricity & water (N$ mil)	504	585	731	740	900	1091	1012	1562	1590	1850	2077	2509
Construction (N$ mil)	545	915	716	983	1138	1259	1826	2286	2880	2465	2712	3229
Total Secondary Industries cont. to GDP (%)	**15.5**	**16.5**	**16.0**	**18.4**	**17.3**	**17.5**	**19.7**	**21.9**	**19.0**	**19.3**	**18.9**	**18.5**
Secondary Industries (N$ mil)	**4218**	**5053**	**5674**	**6872**	**7377**	**8087**	**10629**	**13623**	**13874**	**14457**	**15370**	**16772**
Wholesale & retail trade, repairs (N$ mil)	2682	3060	3630	4113	4638	5202	5879	6769	7682	8610	9711	10538
Hotels & restaurants (N$ mil)	443	509	585	671	770	829	940	1115	1283	1399	1467	1593
Transport & communication (N$ mil)	1205	1245	1462	1955	2403	2662	2535	2955	3395	3800	4526	4533
Financial intermediation (N$ mil)	964	1084	1269	1691	1686	1823	2201	2534	2849	3648	4262	4717
Real estate & business services (N$ mil)	2413	2752	3006	3433	3921	4219	4478	4990	5415	5986	6363	7165
Community, social & personal services (N$ mil)	1124	1228	1189	1322	1549	1697	1840	1979	2193	2446	2503	2740
Public administration & defence (N$ mil)	2655	2945	3254	3677	3857	4115	4423	5157	6143	7100	8182	9268
Education (N$ mil)	2153	2391	2625	2800	3331	3208	3703	4570	5202	5948	6826	7297
Health (N$ mil)	1411	1490	1554	1691	1806	1579	1647	1859	2229	2437	2721	2853
Private household with employed persons (N$ mil)	231	258	294	322	343	358	384	424	492	559	597	643
Total Tertiary Industries cont. to GDP (%)	**56.3**	**55.5**	**53.3**	**58.1**	**56.9**	**55.6**	**51.9**	**52.1**	**50.7**	**55.9**	**58.1**	**56.5**
Tertiary Industries (N$ mil)	**15281**	**16962**	**18868**	**21675**	**24304**	**25692**	**28030**	**32352**	**36883**	**41933**	**47158**	**51347**
Less: FISIM (N$ mil)	404	455	488	546	469	517	644	750	840	1014	1180	1261
All Industries (N$ mil)	24705	28185	32391	34800	39176	42311	49892	57416	67068	68796	74129	81997
Taxes less subsidies on product (N$ mil)	2421	2353	3039	2506	3502	3864	4133	4666	5877	6275	7007	8846
Gross Domestic Product (GDP N$ mil)	**27126**	**30538**	**35430**	**37306**	**42678**	**46175**	**54025**	**62082**	**72945**	**75071**	**81136**	**90843**

Mining has dominated value added contribution towards GDP within the primary industry for twelve consecutive years since 2000. The average 2000 to 2011 ratios between the mining contribution to GDP and total GDP were approximately 1:9 measured at local current prices and 1:13 measured at constant 2004 prices. In contrast, the average ratios between the agriculture contribution to GDP and the total GDP were significantly smaller at 1:21 and 1:20 respectively, over the same period. This is a clear indication of why the country's economy remains strongly dependent on the mining sector's financial contribution. **Table 4.5** is a summary of the primary industries' contribution to GDP as well as the industry to total GDP ratios.

Table 4-5: Primary industries contribution to GDP and industry to GDP ratios (Namibia Statistics Agency, 2012).

Value Added to GDP (N$m current prices)	**2000-2003**	**2004-2007**	**2008-2011**	**2000-2011**
Agriculture & forestry	7 120	11 432	13 088	31 640
Fishing & fish process on board	6 114	7 774	10 087	23 975
Mining & quarrying	14 137	21 875	35 316	71 328
GDP	130 400	204 960	319 994	655 354
GDP ratios measured at local current prices				
Agriculture : GDP Ratio	**1:18**	**1:18**	**1:24**	**1:21**
Fishing : GDP Ratio	**1:21**	**1:26**	**1:32**	**1:27**
Mining : GDP Ratio	**1:9**	**1:9**	**1:9**	**1:9**
Value Added (N$m constant 2004 prices)				
Agriculture & forestry	7 831	10 092	8 505	26428
Fishing & fish process on board	6 387	5 365	4 254	16 006
Mining & quarrying	10 764	17 306	14 032	42 102
GDP	143 682	182 662	211 716	538 060
GDP ratios measured at constant 2004 prices				
Agriculture : GDP Ratio	**1:18**	**1:18**	**1:25**	**1:20**
Fishing : GDP Ratio	**1:22**	**1:34**	**1:50**	**1:34**
Mining : GDP Ratio	**1:13**	**1:11**	**1:15**	**1:13**

While the revenue generated from the country's diamond industry continued to dominate the economy for several years, in 2008 the non-diamond mining industry made the most significant contribution. It marked for the first time when non-diamond mining contribution to GDP exceeded the contribution by the diamond industry as

indicated in **Figure 4.3**. It also marked the year with the highest percent contribution to GDP within the primary sector since 2000.

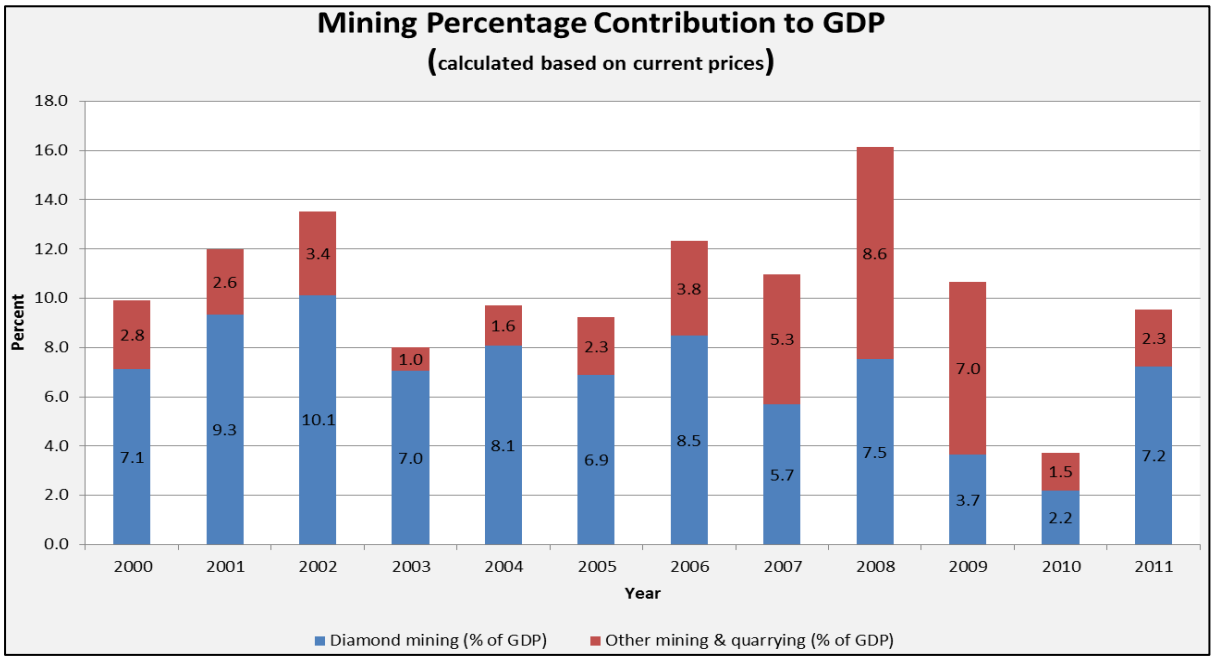

Figure 4-3: Mining value added as a percentage of GDP, (Namibia Statistics Agency, 2012).

While the 2008 year may have been characterized by a bust in the minerals industry due to the fall in mineral commodity prices, it was by no means all doom and gloom. During times of economic upheaval, gold has generally been considered a safe-haven as it is viewed as a store of value. In 2008 gold prices remained firm at an average price of US$800 per ounce, which helped Navachab, Namibia's only gold mine achieve sound financial results. At the same time fluorspar prices were on the increase allowing Okorusu Fluorspar to record its first profit in many years. In its annual review, the CMN reported that the uranium mining industry saw an increase in activity over the same period when the combined production at both Rössing Uranium and newcomer Langer Heinrich pushed uranium oxide output to over 5, 000 tons. This resulted in Namibia gaining fourth place in the ranking of world producers after Canada, Kazakstan, and Australia.

Notwithstanding the fact that the effects of global economic slowdown were extended into Namibia's mining sector, the rate at which this occurred was much slower than what it was made out to be. In fact from 2006 to 2008, the mining sector

as whole contributed on average N$ 4.7 billion per year (constant prices) in value added to GDP before contracting to N$ 2.6 billion in 2009. Some mining operations even reported healthy financial results during 2008 and 2009, which were attributed primarily to prudent cost-cutting measures as well as an increase in production throughput particularly in the uranium industry. While mines made concerted efforts to remain operational as well as profitable, low commodity prices hampered growth in the minerals industry. This is evidenced by the decrease in the Commodity Metal Price Index (CMPI) during 2007 to 2009 as indicated in **Figure 4.4**.

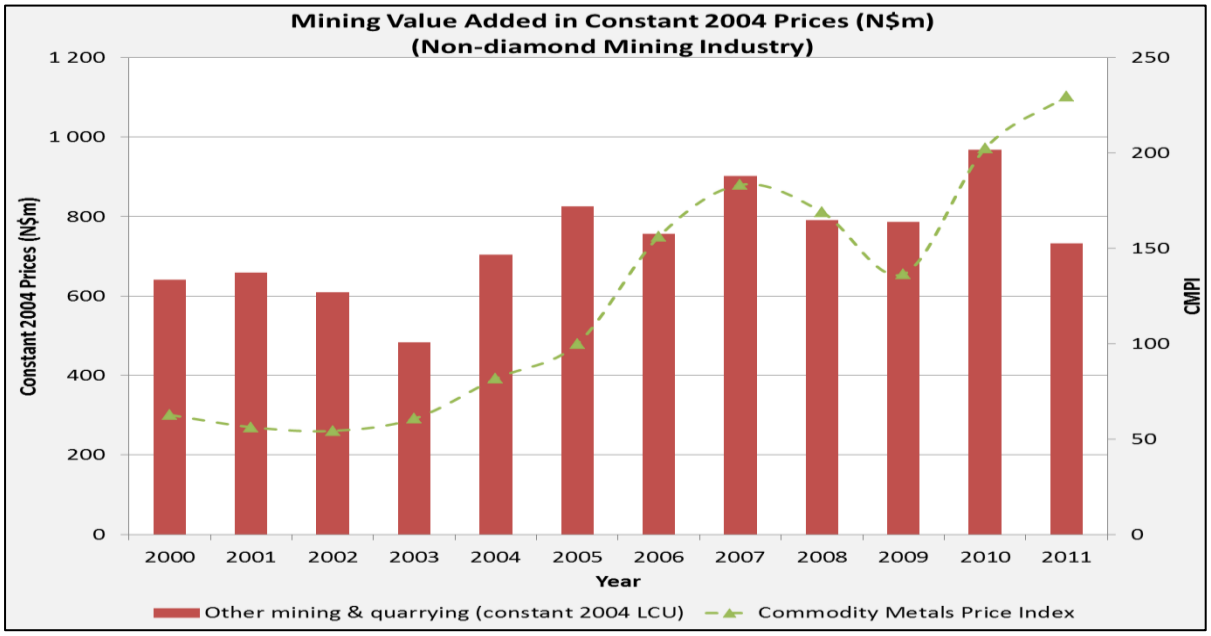

Figure 4-4: Namibia's non-diamond mining industry value added and global commodity metal price index, (Namibia Statistics Agency, 2012 & IMF).

The CMPI is calculated based on copper, iron ore, tin, nickel, zinc, lead, and uranium as well as aluminum price indices. **Figure 4.4** also shows the contribution towards GDP (calculated based on 2004 constant prices) from the non-diamond mining sector. Only the non-diamond mining sector contributions are displayed, this is because the CMPI is calculated based only on the metal commodities which exclude diamonds. There is a fairly good correlation between the mining value added and the CMPI in particular from 2003 to 2010.

Due to falling metal commodity prices mines were forced to either increase their annual production throughput (in particular in the uranium industry), in order to

compensate for revenue loss due to the weak metal prices; or alternatively it meant mines needed to mine more high-grade and less low-grade material (i.e. increase the average cut-off grade). **Table 4.6** is a summary of the mining production outputs by major operating mines from 2007 to 2012. These strategies ensured that mines remained operational during the economic crisis and to some extent even generate notable profit for their stakeholders. In order to support the various strategies deployed by local mining companies to cope with the global economic crisis, the national government put in place special arrangements for those mines that were experiencing financial hardships to apply for deferment or reduction of royalties.

Table 4-6: Namibian production output by major operating mines (Chamber of Mines of Namibia, 2014).

Output by Major Operating Mine	2007	2008	2009	2010	2011	2012
Langer Heinrich (tU)	321	1 052	1 170	1 678	1 694	2 306
Namdeb Diamond Corporation (carats)	1 068 933	1 039 000	329 000	492 000	346 000	559 408
Debmarine Namibia (carats)	1 048 302	1 055 000	600 000	980 000	990 000	1 100 000
Dundee Precious Metals Tsumeb (tonnes of blister copper)	n/a	16 586	21 543	25 019	34 350	27 415
Okorusu Flurospar (wet metric tonnes of Fluorspar)	118 766	118 263	80 857	104 494	90 834	74 157
Rosh Pinah (Zinc concentrate tonnes)	94 855	94 236	94 000	101 040	89 236	94 303
Rosh Pinah Lead concentrate tonnes)	21 876	20 155	20 000	19 202	15 776	17 557
Rossing Uranium (tU)	3 046	4 067	4 150	3 628	2 137	2 699
Ohorongo Cement (tonnes of cement)					389 538	501 385
Skorpion Zinc (tonnes of SHG zinc)	150 080	145 396	150 400	151 688	144 755	145 342
Salt and Chemicals (tonnes of salt)	665 000	642 000	720 000	792 000	738 000	725 000

Figure 4.5 shows uranium oxide, copper, zinc and gold prices from 2003 to 2010. Unlike other mines that remained operational during the economic crisis, Weatherly Mining Namibia decided to place all its mines under care and maintenance. This was in recognition of the fact that with copper prices having halved more than the record 2008 high of US$9,600/ton, its cost of mining made continued production uneconomic. In November 2008, the company commenced a period of retrenchment and sale of some of its assets. During 2009 the company continued to ensure that its closed mines were kept in good order and on expanding and improving the refining operation.



Figure 4-5: Uranium oxide, copper, zinc and gold prices between the periods 2003 and 2010, (Source: infomine)[10].

[10] Graph taken from Infomine website at http://www.infomine.com/; last accessed 22 October 2013.

Figure 4.6 shows mining's main areas of macroeconomic contributions to low and middle income economies. The diagram was taken from a study that was conducted by the ICMM and published in 2012, which looked at the role of mining in national economies. According to the ICMM findings, Namibia is ranked 16 out of 20 countries with the highest minerals export contributions as a percentage of total merchandise exports in 2010. It is therefore not surprising that Namibia's merchandise exports are dominated by mineral exports and these account on average for 30% to 50% of the total value of exports per annum.

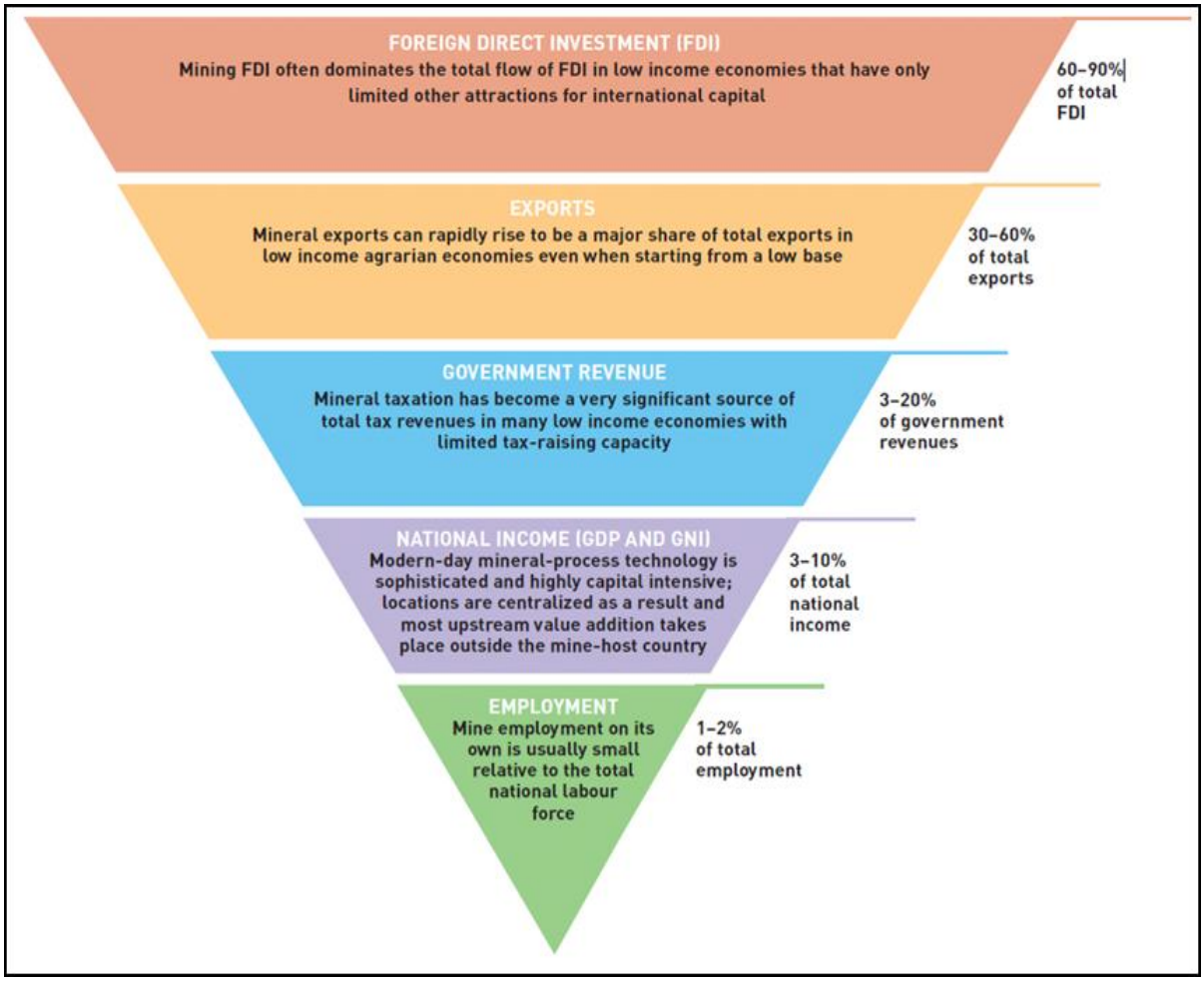

Figure 4-6: Mining macroeconomic contributions to low and middle income economies, (ICMM, 2012).

Figure 4.7 shows Namibia's mining export earnings for various commodities from 1990 to 2013. According to the CMN (2014: 89) mineral products accounted for 51%, 54%, 46%, 54%, 51%, 54% and 53% of the total value of merchandised exports during 2007, 2008, 2009, 2010, 2011, 2012 and 2013 respectively. Manufactured products which included mainly food products such as packaged meat and preserved fish, as well as beverages accounted for the bulk of the difference in terms of the total value of exports. **Table 4.7** is a summary of the value of export goods given in composites of four years starting from 2000. The table also shows the export value to total GDP ratios for both mining and non-mining related export goods. The mining export to GDP ratio is 1:5 and is the same as the ratio between non-mining export goods and total GDP. The findings support the fact that the country's mineral resources remain an important source of revenue.

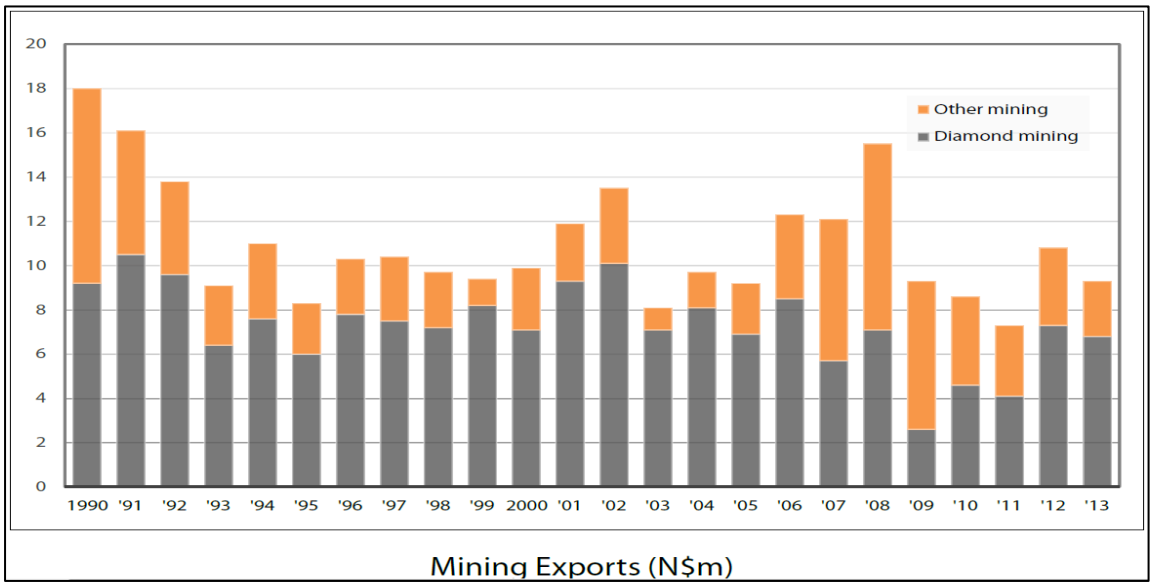

Figure 4-7: Namibia mining exports earnings, (Chamber of Mines of Namibia, 2014).

Table 4-7: Namibia export goods (Chamber of Mines of Namibia, 2014).

Export Value (N$m current prices)	**2000-2003**	**2004-2007**	**2008-2011**	**2000-2011**
Total mining export goods	23 453	41 379	64 880	129 712
Total non-mining export goods	22 685	37 106	61 533	121 324
Total export of goods	46 138	78 485	126 413	251 036
GDP (current LCU)	130 400	204 960	319 994	655 354
Mining exports as % of total export goods	**50.8%**	**52.7%**	**51.3%**	**51.7%**
Export value : GDP ratios				
Mining export : GDP Ratio	**1:6**	**1:5**	**1:5**	**1:5**
Non-mining export : GDP Ratio	**1:6**	**1:6**	**1:5**	**1:5**

Whereas the economy benefits immensely through mining's foreign export earnings and FDI as primary sources of income, other mining macroeconomic contributions are as important to the economy. Income generated from the sale of the country's minerals is subject to tax payment. The total tax revenue is derived from various sources which include mineral or mining royalties, value added tax (VAT), corporate and individual employee taxes. According to the CMN 2007/2008 annual review, it was estimated that tax revenue to the Ministry of Finance amounted to N$821.1 million from diamond mining in 2007/2008. Over the same period tax revenue from other mining companies yielded a total of N$822.8 million. This brought the total direct tax revenue yielded to over N$1.6 billion. In addition to taxes, some mining companies pay dividends to the State. According to the same CMN report, diamond mining royalties were estimated to have yielded N$600.4 million while the revenues from the new minerals royalty tax amounted to N$42.9 million. No dividends were received from Namdeb Diamond Corporation for the year under review but N$8.2 million was received from Rössing Uranium in which the government of Namibia has a 3% holding.

Table 4.8 is a summary of Namibia's tax revenue generated from mining related activities for different years. Total direct tax from mining was lowest for the 2009/2010 financial year. This was attributed to a general poor performance in the non-diamond mining sector, especially the uranium and copper sectors.

Table 4-8: Namibia tax revenue generated from mining (Chamber of Mines of Namibia, 2013).

Tax revenue (N$m)	07/08	08/09	09/10	10/11	11/12
Diamond mining profits tax	220.7	498.8	511.3	354.5	573.5
Other mining profits tax	779.9	730.9	61.2	212.7	263.8
Diamond mining royalties	600.4	451.8	230.8	602.0	350.0
Other mining royalties	42.9	92.8	261.0	280.0	360.0
Namdeb dividends	-	-	-	-	-
Rössing dividends	8.2	8.6	8.5	0.6	5.3
NDTC dividends	-	25.0	100.0	85.0	50.0
Total direct taxation from mining	1 652.0	1 807.9	1 172.8	1 534.7	1 602.6

4.3 MINING SECTOR FIXED ASSETS

Despite the internal and external trade shocks that accompanied the recent global economic crisis, the mining sector spent huge amounts of capital in fixed assets. The graph in **Figure 4.8** shows the amount of capital the mining sector spent on fixed assets in relation to what government spent, from 2000 to 2011. Since 2002 to 2010, the mining sector has spent considerably more money on fixed assets than what government has spent. Acquisition of land; buildings, exploration and drilling equipment; mining machinery; and processing plant accounted for the bulk of the fixed assets within the mining sector.

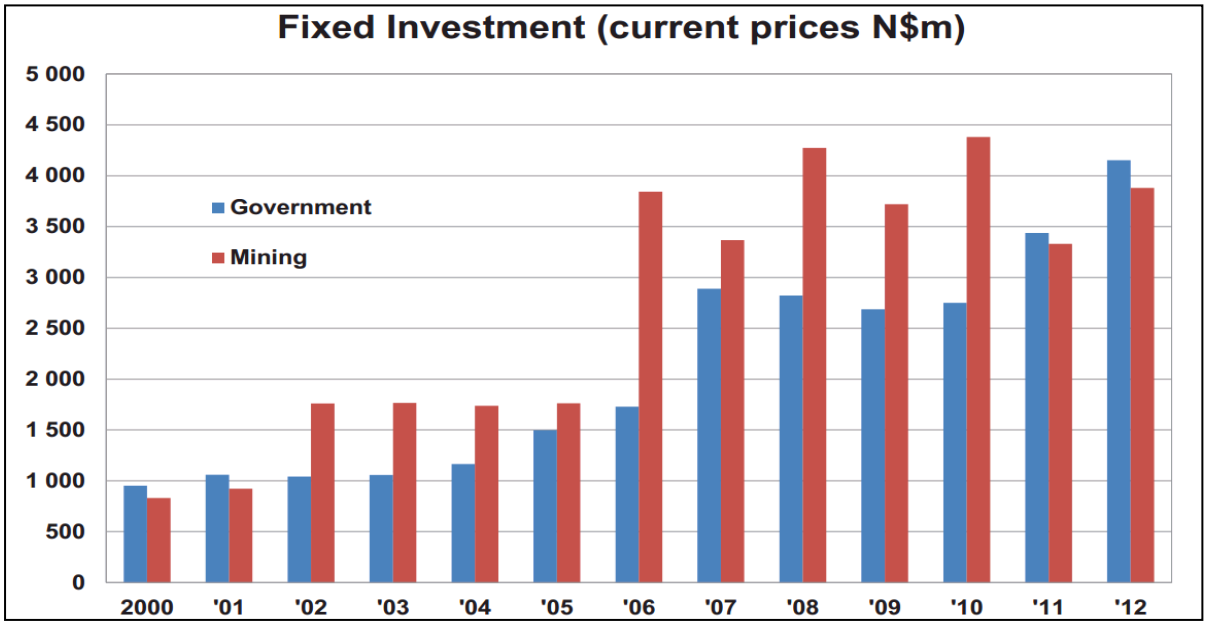

Figure 4-8: Mining sector and government fixed assets, (Chamber of Mines of Namibia, 2013).

4.4 EFFECTS OF MINING ON EMPLOYMENT AND POVERTY REDUCTION

Mining is considered the largest private-sector area of employment in Namibia. This is due to the fact that as a minerals resource-based industry it does not only create direct employment, but also holds the potential to create thousands more indirect jobs. The country's mining sector accounts for a combined total of approximately 80 000 direct and indirect jobs. The majority of those directly employed in the sector are males. The mining industry has for many years been and still remains a male dominated work environment. However, more and more females are slowly finding

employment in the mining sector. This is in part can be attributed to gender sensitive policies aimed at redressing and providing equal opportunities to previously marginalized members of society. In addition to direct and indirect employment by mining companies, mining create many more job opportunities through the investments they make.

Despite the fact that the mining sector is a significant employer, it operates in globally competitive market. As a consequence of this, mining operations are increasingly becoming more automated each year and thus reducing the need for manual labour. It is thus not surprising that although the country's mining sector on average experienced relatively rapid growth rates in terms of revenue, these rates have not necessarily been accompanied by significant growth in employment (**Figure 4.9**).

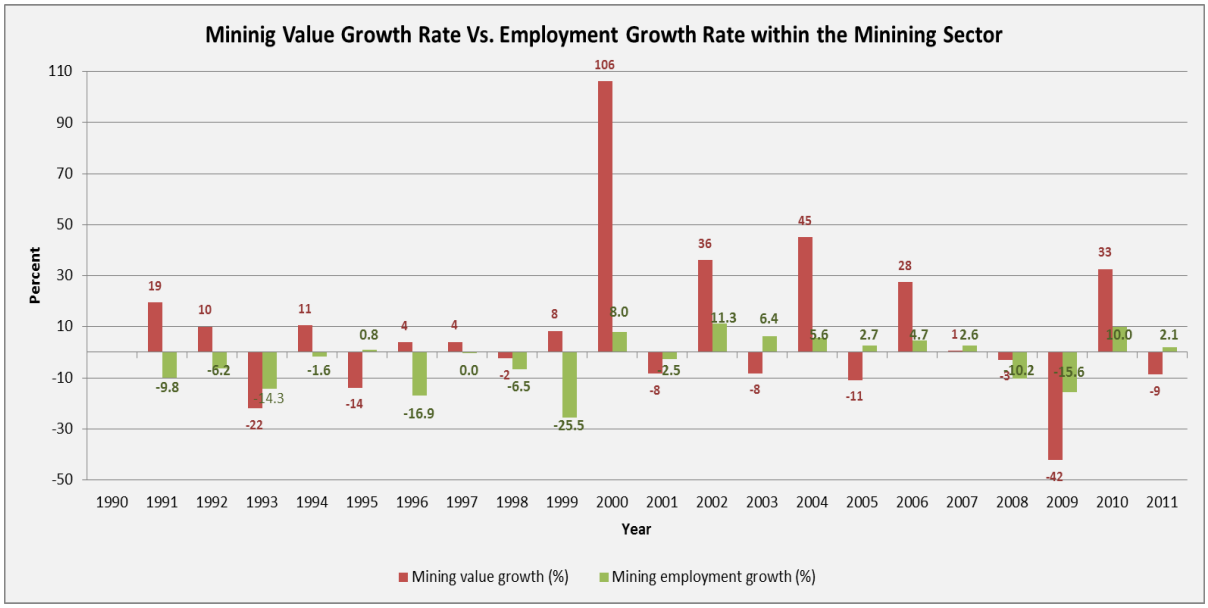

Figure 4-9: GDP, mining value and employment in the mining sector growth rates.

On average, mining value added grew by a rate of 8.8% per annum between 1991 and 2011, while the employment growth rate within the mining sector declined by an average of 2.6% per annum over the same period. The mining value added growth rate peaked in 2000 when the value added to GDP in terms of constant prices more than doubled that of the previous year (N$2499 mil vs. N$1211 mil). Employment growth rate within the sector declined the most in 1999 when it recorded a negative

growth rate of 25.5% relative to the previous year's employment rate. The decline in the rate of employment was in particular attributed to closures of the Tsumeb copper smelter, the copper and copper-lead mining operations at Kusib Springs, Kombat and Otjihase between 1996 and 1998. The closures followed protracted labour strikes and economic difficulties.

The average rate of employment remained relatively low compared to the accelerated growth rate in mining value addition between 2000 and 2007. Rates of unemployment and underemployment increased between 2007 and 2009 possibly having been triggered by the looming 2008 global financial and economic crisis. In 2010 subsequent to the crisis, growth in the sector optimistically started to improve accompanied by growth in employment. On the back of increased foreign direct investment financed by relatively high and stable commodity prices, increased exploration and mining expansion activities, as well as a stable and conducive investment environment supported by sound macroeconomic policies, the mining sector can be said to once again be on the right path to recovery. Overall however, efforts to improve the ratio between the number of jobs created by the mining industry relative to the revenues it generates needs to be geared up significantly. The approximate average ratio currently stands at 1:500 000, that is, one direct job is created for every half a million Namibian dollars that is generated from mining activities (Chamber of Mines of Namibia, 2012: 91).

Considering the significant contribution made by the mining industry to Namibia's social and economic development, mining can greatly contribute to poverty reduction in a number of ways. These can be grouped into two main categories:

- Those that directly contribute to poverty reduction through job creation. It is estimated that mining provides an income through direct employment to approximately 2-3 million workers worldwide - and between 2 and 25 indirect jobs through suppliers, vendors and contractors for every direct employment created in the mines (Weber-Fahr et al., 2001: 4).
- Those that indirectly contribute to poverty reduction by generating "large revenues for governments to use for targeted poverty reductions programmes" (Pegg, 2005: 380); indirectly through investment into local

economic development found in various forms such as the provision of training, social services and infrastructure development to mention a few; and through the creation of opportunities for growth for lateral or downstream businesses; and perhaps through the transfer of technology.

4.4.1 SOURCE OF INCOME

If managed prudently, the wealth generated from the country's natural resources through mining can serve as a meaningful source of income for many locals. It follows that by creating more jobs, more people would have a source of income which in turn impacts positively on poverty reduction. This however is not always as simple and straightforward as it appears. In order to make a meaningful impact on poverty reduction it is not simply enough to create more jobs. It requires that employers pay their employees reasonable wages so as to enable them to have and enjoy decent standards of living. This however should not necessarily be construed as saying that employees in other sectors of the economy are better paid than those in the mining sector. On the contrary, wages within the mining sector are generally higher than those in many other sectors of the economy. Information on gross monthly remuneration of employees in the country's sectors of economy as reported in NLFS 2012 is presented in **Table 4.9**. The information is presented in eight earning intervals for reporting convenience.

Table 4-9: Namibian remuneration by industry (Namibia Statistics Agency, 2013).

Industry	none	<1 000	1 000 - 1 999	2 000 - 3 999	4 000 - 5 999	6 000 - 7 999	8 000 - 9 999	10 000+	Total
Agriculture	0.9	64.5	26.0	5.0	1.2	0.6	1.8	0.0	100.0
Fishing	5.8	3.8	17.3	35.2	16.4	5.8	14.4	1.2	100.0
Mining	1.4	1.7	5.8	19.8	13.8	6.3	45.5	5.7	100.0
Manufacturing	4.5	12.4	25.4	29.0	9.4	5.9	11.4	2.1	100.0
Utilities (electricity, water, etc)	7.9	11.1	23.0	15.9	20.3	1.1	18.7	2.0	100.0
Construction	2.4	19.0	27.4	29.7	10.1	4.6	5.8	1.0	100.0
Trade	3.9	18.5	22.5	25.6	10.8	5.8	11.1	1.8	100.0
Transport & communication	9.2	1.1	4.0	15.6	10.8	6.4	44.6	8.5	100.0
Hotels & restaurants	2.1	37.3	27.4	22.2	3.9	2.2	4.1	0.8	100.0
Financial services	1.1	4.2	6.5	11.3	17.3	10.8	44.7	4.0	100.0
Real estate & business services	2.8	13.9	29.0	22.6	8.2	4.8	17.7	1.1	100.0
Public administration	3.7	2.6	9.4	20.2	22.9	17.9	21.0	2.4	100.0
Education	4.9	4.4	9.2	12.0	7.9	11.8	41.7	8.1	100.0
Health & social services	3.0	4.0	10.7	26.2	14.3	12.0	28.2	1.7	100.0
Other services	3.9	25.4	18.2	22.6	12.0	3.0	13.5	1.3	100.0
Private households	1.4	65.6	22.6	9.0	0.8	0.2	0.5	0.0	100.0
Total	**3.0**	**24.8**	**20.1**	**19.2**	**9.2**	**6.1**	**15.6**	**2.1**	**100.0**

Based on the survey results, 45.5% of persons reported to be in remunerable employment within the mining sector earned between N$ 8000 and N$9999 per month. This was the highest percentage earing for this interval with only three other sectors attaining similar high percentages for the same earning interval. These are the financial services, transports & communication, and education sectors with 44.7%, 44.6% and 41.7% respectively. Only 1.7% employees in the mining sector earned less than N$1000/month in comparison to 64.5% of employees in the agriculture sector. In the agriculture sector no one was reported to earn above N$9999 while in the mining sector 5.7% of the employees earned above N$9999/month.

The fact that the mining sector has and continues to sustain the country's economy is a clear indication of the sector's crucial role in supporting the livelihoods of many locals. Whenever a new mining project comes online, this is often accompanied by a boost in both the local and national economy. New mines will certainly always create new employment opportunities, albeit initially only in the short to medium-term. However if managed properly mining revenues hold huge potential for developing alternative more sustainable sources of revenue for long-term employment. This involves for example the development of more labor-intensive manufacturing or service industries.

4.4.2 REVENUE GENERATION

An important source of government revenue is generated through mining related activities. According to Weber-Fahr *et al*., (2001: 4) when managed properly mining-generated revenue can be used by governments as a source of financing to support social-sector and targeted poverty reduction programmes. Pegg (2005: 380) draws the causal logic between mining and poverty reduction as follows: "*mining → taxes, revenues and royalties for the government → improved financing for targeted poverty alleviation policies → poverty reduction*". While in theory the causal logic may appear simple and straight forward, in practice it is more complicated than this. Extraction of mineral resources is not always accompanied by responsible, just and economically productive resource management. Economic and social policies and

programmes intended to tackle poverty are often poorly managed and underfunded. The development and implementation process of targeted poverty reduction programmes therefore requires a better and in-depth understanding of the interconnectedness among issues of mineral resource management, income inequality and poverty alleviation.

In Namibia where mining is the backbone of the economy, mining undoubtedly generates large revenues for the government. It is therefore an important vehicle for socio-economic transformation. As Weber-Fahr et al., (2001: 13) rightly puts it, "any large-scale mining operation has the potential to significantly and positively increase the capabilities of the poor as a group in the particular region in which the mining operation is located".

According to a comparative study of poverty patterns and trends in the country conducted by NSA using the results of three Namibia Household Income and Expenditure Surveys (NHIES) – 1993/94, 2003/04 and 2009/10 - reported the following findings on poverty trends in the country (NSA, 2012):

- Using household consumption expenditures as a welfare indicator, found that the average monthly "adjusted per capita expenditures" (apce) had increased by at least 56% over a 17 year period between 1993/94 and 2009/10 (**Table 4.10**). The data suggests that the general living standards of citizens had increased over time.
- The report not only found that there has been an improvement of well-being between 1993 and 2010, but that there also has been a reduction in poverty levels as indicated in **Figure 4.10**.

Table 4-10: Average monthly adjusted per capita expenditures in Namibia in N$, in 1993/94, 2003/04 and 2009/10 (Namibia Statistics Agency, 2012).

Wellbeing	1993/1994	2003/2004	2009/2010	% Change in 17 years
Nominal prices (N$)				
Average per Capita Expenditure	187.76	659.32	1151.11	83.7
Average adjusted per Capita Expenditure	214.68	741.52	1288.07	83.3
Constant 2009/2010 prices (N$)				
Average per Capita Expenditure	486.47	949.5	1151.11	57.7
Average adjusted per Capita Expenditure	556.21	1067.88	1288.07	56.8

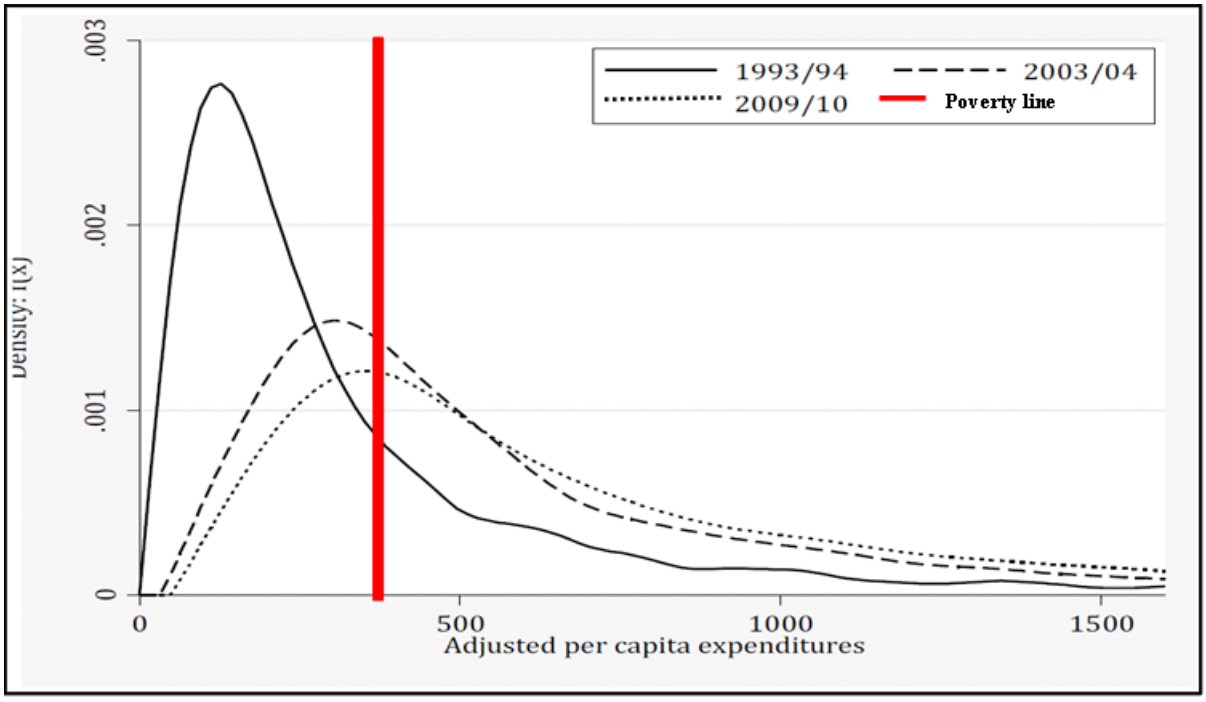

Figure 4-10: Density curves of the adjusted per capita expenditures in Namibia (Namibia Statistics Agency, 2012).

All three curves have positively skewed distributions with the 1993/94 curve having the most skewed distribution. It is characterized by high density values (x-axis) at low apce values (y-axis) and conversely by low density values at high apce values. This means that during 1993/94 a high proportion of population were living below the poverty line and were thus considered to be poor. Notwithstanding the fact that the incidence and inequality has declined over time, a high percentage of the population remains poor despite the country generally stable and thriving mining industry. When the NSA released the findings of its study in 2012, it had found that 15.3% of the population was severely poor.

4.4.3 Economic Growth

Revenue generation and economic growth are closely linked to one another. Fiscal revenue generated through taxes collected by government from mining operations can be used to finance the country's social, economic and environmental development programmes. This however can only be achieved once the government commits itself to efficiently and accountably use the scarce resources at its disposal. That is, by: establishing clear objectives and a sound policy environment for the

mining sector; ensuring that a sound mineral regulation and licensing system is in place; developing robust and transparent structures to manage the implementation, monitoring and evaluation processes; and promoting competitive diversification of resources into non-commodity sectors such as manufacturing and service sectors.

When managed appropriately mining operations can be a catalyst for accelerated economic growth and transformation which in turn can contribute positively to poverty alleviation. However if revenues generated from mining are misappropriated through corruption and economic mismanagement, then the ability of government to address issues of unemployment and poverty becomes compromised. In addition, the positive impacts that are created by mining would fast erode way. A point in case are the countries such as Congo and Zambia where production from the respective copper mines are said to have shown little overall development benefit for the country (Weber-Fahr et al., 2001: 10). Pegg (2005: 280) appears to support a similar view by acknowledging the findings from the World Bank's Operation Evaluation Department (OED) which "found that during 1990-99 there was a negative relationship between extractive industry dependence and economic growth for all World Bank Group (WBG) borrower countries".

In Namibia as elsewhere on the continent, the same question has been raised - is the mining sector really benefiting the country's population to its maximum potential in terms of socio-economic benefits? The answers to this question vary widely. Many mining companies for example argue that they invest huge sums of money into mineral exploration activities and the subsequent development of mining operations. As a result of this there seems to be a perception among mining companies that the country's mineral resources belongs to them, and can therefore control and exploit them as they find fit (Jauch, 2011: 1). The majority of locals however argue that they benefit very little from their natural resources, with majority foreign shareholders and a few local elite shareholders benefiting the most.

While mining companies do invest locally through the procurement of locally manufactured goods and services, and provision of infrastructure development amongst others, there is still room for improvement. This is not only necessary to

support and fast track economic growth, but is a precondition for maintaining a stable environment within which the mines can operate. If mines do not invest locally, poverty levels are likely to increase as a result of scarce financial resources. Inadvertently competition for these resources may lead to instability in and surrounding towns where mining operations take place. Mines may find it difficult to operate under such condition and may eventually be forced to close down. A major challenge facing the mining sector as far as procurement of goods and services is concerned is a lack of suitable suppliers locally. The country's manufacturing sector is relatively still young and does not yet has the capacity to manufacture most of the machinery and equipment required in mining operations. As a result mining companies are forced to import not only the machinery and related equipment, but also the technology that comes with it.

Undermining the potential of mining to support local economic growth is the unwarranted export of unprocessed raw minerals. Virtually all of Namibia's minerals were being exported to other countries in raw form, prior to the country attaining its independence (Jauch, 2011: 1). Many years after independence, the practice still seems to prevail. The present zero-rating of value added tax (VAT) on the export of raw materials is a major contributor to the unjustified practice. In July 2011 the Minister of Finance had proposed that the zero-rating of VAT be abolished and be replaced with a standard 15% VAT rate plus and 5% levy on the export of raw materials. A move hailed by many locals as a move in the right direction. However the proposal was met with stiff resistance from mining companies, many of which instead chose to threaten government with mine closures. Government was eventually forced to backtrack on its proposed measures. The zero-rating of VAT on the export of raw material to this day still remains in place.

With little incentive or firm punitive measure to discourage the export of materials in raw form and instead encourage greater local beneficiation before export, the development of downstream industries will remain just wishful thinking. Even though limited technological and systematic skills transfers may take place during the mining phase, at the downstream phase this knowledge and technology is not developed

locally. Thus the country as a whole stands to gain very little in the way of technological advancement.

4.4.4 RESEARCH AND DEVELOPMENT (R&D)

The fact that virtually all of the country's mineral resources are exported in raw form, coupled with heavy reliance on technologies developed in the west is testimony of the limited amount of resources being invested into local research and technology development. It is therefore not surprising that the pro-west systematic suppression of local manufacturing industries hinders local economic growth, job creation and poverty alleviation. In addition, the over reliance on outside technology also limits the government's ability to maximum the benefits from the country's mineral wealth, which could ultimately be used to overcome the huge levels of socio-economic inequality in the country. Pegg (2005: 381) citing '*Friends of the Earth*' highlights that "even if mining can bring some innovation and technological advancement to a developing country, the more important question for the Bank is whether support for mining is the best way to facilitate the expansion of a national innovative capacity". Pegg (2005: 381) asserts that opportunity costs must be considered particularly in view of other potentially more optimal investment options, such as in the education and training sector, or information communication and technology sector.

Namibia has made significant development in some areas of technological innovations. The country is for example renowned for its technological advancement in the area of offshore diamond exploration, reserve assessment, mining and onboard processing (MME, 2003: 32). While the nation prides itself as the world leader in the technology for offshore diamond mining activites, the unfortunate reality is that most the technology is developed outside the country to be adapted only for use inside the country. Although the Namibian Minerals Development Fund (NMDF) provides financial assistance to viable projects for the developmemt and adaptation of mining technology, such financial assistance is mainly reserved for small-scale mining activities (MME, 2003: 32). If meaningful development is to be achieved in the areas of mining research and development (R&D), this will require that increased funding for R&D is also extended to the R&D in the formal mining sector. If this is not

done, any strategy to develop mining value addition within the country will remain under threat.

In order for a country to move away from a resource-based economy – which is characteristic of many African economies- to a knowledge-based economy, it will require investing substantially into local R&D. A major challenge faced by several developing economies on the continent, including Namibia is the issue of funding for R&D. The major source of funding for R&D is the World Bank (WB) or International Monetary Fund (IMF). However, funding from these institutions is often accompanied by biased terms and conditions, which for the best part favor and protects the interest of foreign countries. There is often a heavy debt burden placed on borrowing countries. The consequence of this is that resource-based economies such as Namibia's can remain trapped in debt for a long time, while it is slowly being robbed of the very lifeline of its economy. Such debt may even persist long after the mineral resources have been depleted. As Jauch (2011: 2) concludes:

> "The time has come to take decisive action as mineral resources cannot be recovered once they are gone. Failure to act now will mean that the missed opportunities will haunt Namibia in years to come".

4.5 EFFECTS OF MINING ON THE ENVIRONMENT

While the importance of mining in the economy needs to be upheld, its impact on the environment cannot be ignored. Mines worldwide exert great pressure on the environment in which mining activities take place, in terms of land degradation, water consumption and erosion of biodiversity to mention but a few. Decades of inappropriately managed mining activities in the country, have in some instances resulted in adverse social and environmental impacts. It is estimated that there are over 200 abandoned mines in the country for which the liability to rehabilitate them rests with the government, as the mines have long been abandoned by the previous owners.

Even under current practices, mining operations in Namibia threaten the integrity and stability of the country's fragile ecosystems and the resources they provide. A

number of the mining operations are concentrated in or close to environmental sensitive areas (ESAs) as well nature and game parks such as the Namib Naukluft and Sperrgebiet. The immediate risk posed by mining activities to these areas is permanent landscape alteration which in turn disturbs the natural ecosystem balance. The outcome is often that the land is no longer able to support vegetation growth, as result other wildlife that depend on plants for food are forced to migrate elsewhere.

In addition, mining operations require vast amounts of water to carry out their activities. Namibia is classified as a semi-arid country and any additional mining operation simply exerts more pressure on this already scarce resource. Coupled with this, mining operations generally rely on chemicals for the product (metal) extraction process. The chemicals are generally toxic and therefore pose a significant threat of soil and water contamination which can further exacerbate the loss of critical habitats for sensitive plants and animal species. The impacts of mining if not managed appropriately can easily lead to conflicts between mining operations and ecotourism operations. According to a 2009 report by the Legal Assistance Centre of Namibia (LAC), “these impacts may result in economic losses at the local and national level as mining activities degrade or destroy existing or potential competing uses of the land, such as agriculture or eco-tourism” (Legal Assistance Centre, 2009: vi).

The central challenge for Namibia is therefore to ensure that the potential competing uses of the land are properly evaluated. This will ensure that the best suites of land uses that will allow for economic development while simultaneously preserving the environment are maintained. The Ministry of Environment and Tourism (MET) is responsible for safeguarding Namibia’s environmental resources. Its mission is to maintain and rehabilitate essential ecological processes as well as life support systems to conserve biological diversity and ensure that the utilization of natural resources is sustainable for the benefit of all Namibians, both present and future. The Directorate of Environmental Affairs within the MET guide and review Environmental Impacts Assessments (EIAs) amongst other tasks. Although development projects are obliged to carry out EIAs, more focus need to be placed on the costs of pollution and environmental impacts and not only on resource inputs and

costs. Since, most mining activities in Namibia are in the prime tourism region in the country and which also contributes significantly to the GDP. A holistic approach need to be considered to ensure that diverse sectors of the economy in the same region receive equal opportunities to thrive. **Figure 4.11** shows Namibia's protected areas (including ESAs) in 'A' whereas the locations of major mines are presented in 'B'.

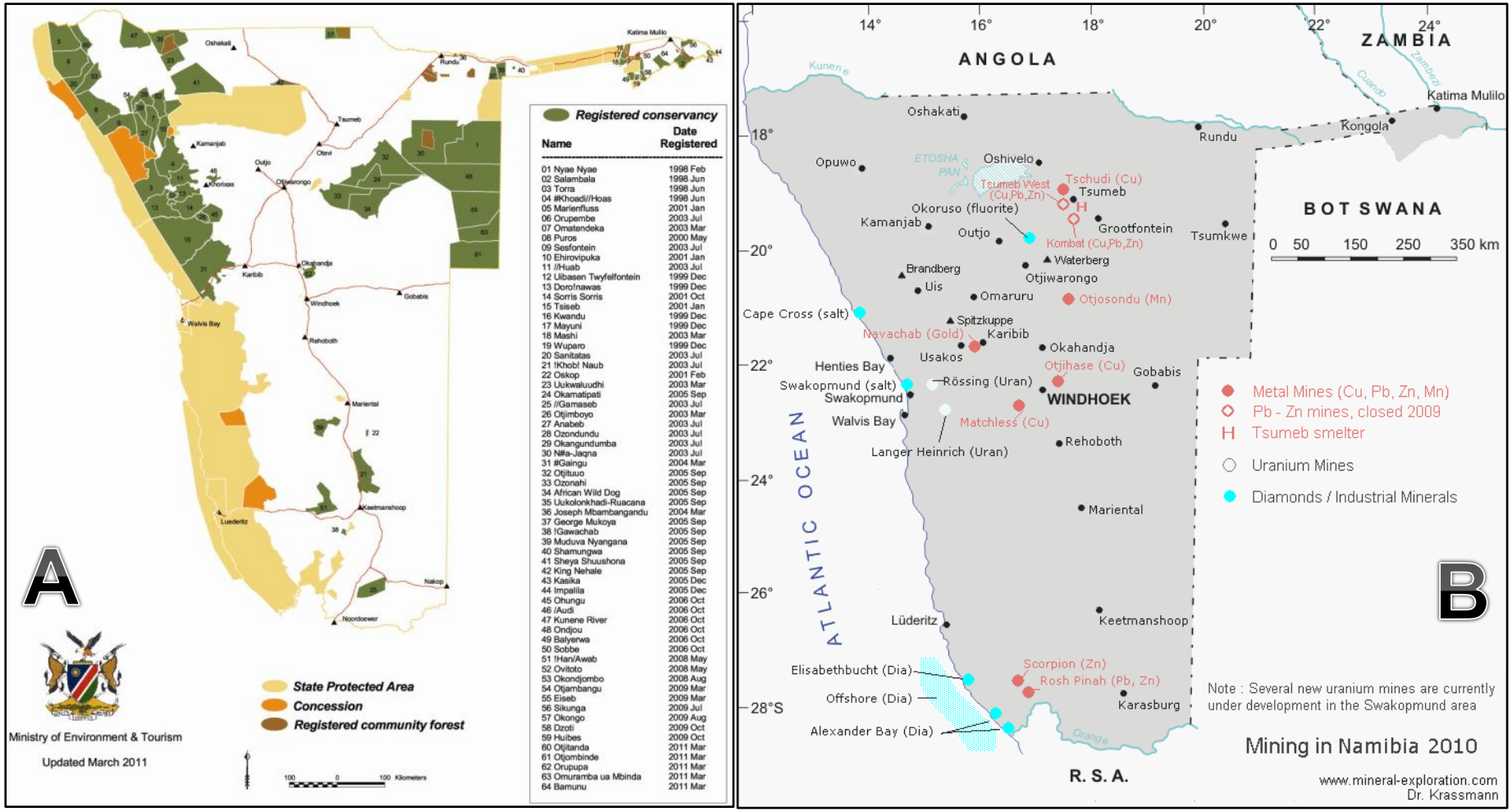

Figure 4-11: Namibia's protected area network in 'A' (Ministry of Environment and Tourism, 2011), whereas the locations of major mines are presented in 'B' (Krassmann, 2010).

The Environmental Management Act (EMA)[11] was passed into law in 2007 following the development of Namibia's Environmental Assessment Policy (EAP) which was approved by cabinet in August 1994. According to the Act, its objective is:

> "to promote the sustainable management of the environment and the use of natural resources by establishing principles for decision making on matters affecting the environment; to establish the Sustainable Development Advisory Council; to provide for the appointment of the Environmental Commissioner and environmental officers; to provide for a process of assessment and control of activities which may have significant effects on the environment; and to provide for incidental matters" (Republic of Namibia, 2007: 2).

In order to mitigate the adverse effects associated with development projects, it is a requirement of the Act that an Environmental Impact Assessment (EIA) is first carried out. The Act defines EIA as the process of identifying, predicting and evaluating the significant effects of activities on the environment, as well as the risks and consequences of activities and their alternatives and options for mitigation with a view to minimize the effects of activities on the environment and to maximize the benefits and to promote compliance with the principles of environmental management[12].

Despite the introduction of the Act in 2007, the MET has not yet finalized the regulations to accompany the EMA. The absence of accompanying regulations has not only resulted in fragmented and often inadequate enforcement, but has also led to many industrial operations, including prospecting and mining operations failing to comply with the mandates of the Act. One of the most persistent problems with a lack of regulations is that none of the parties to the process are necessarily aware of what should be done for effective compliance with the law. As a result of low expectations on the part of one party (government regulators, company, consultants) the overall outcome of the process is likely to be undesirable.

[11] Environmental Management Act, 2007 (Act No. 7 of 2007).
[12] Part I, section 1 of the EMA.

4.6 HAVE NATIONAL POLICIES ACHIEVED DEVELOPMENTAL OBJECTIVES

At the heart of Namibia's development agenda is to the goal to improve the quality of life of its people to a level of their counterparts in the developed world, by the year 2030. The path that leads to this goal is guided by the aspiration of all its citizens and has been in encapsulated in the national long-term development strategy document, "Vision 2030". The 35 year development strategy which started in 1995 and will run until 2030 is expected to have transformed Namibia into a prosperous industrialized nation by then. To support the long-term strategy, medium and short-term development plans have been put in place, and it is against these plans that the overall success of national development is measured.

There is little doubt that the various national policies and laws have gone a long way in transforming the political, social and economic landscape of Namibia. While the nation may not exactly be where it had aspired to be at the moment, there are certainly positive indications that it is moving in the right direction. At the national level, key macroeconomic indicators have shown that since independence in 1990, the country has experienced several years of moderate economic growth, owing to prudent macroeconomic policies and strong performance in the mining sector. At least until 2008, prior to the global economic crisis, Namibia had experienced steady GDP growth, steady export earnings, moderate inflation and limited public debt. Prospects for medium term growth remain favourable, with GDP growth having rebounded back from the 2008/2009 low; growth is estimated at 4.6 in 2013 and projected at 6.1% in 2014 (NPC, 2013: 20).

Notwithstanding the fact that economic growth has been growing steadily, which in itself is commendable, economic growth is by no means an end in itself. But rather a means to achieve other national goals such as increased employment creation, poverty reduction, increased income equality and industrialization. In fact, economic growth is futile if it is unable to address those other goals. Namibia is ranked as an upper-middle income country with an estimated annual US$ 5,785 per capita GDP[13]. The target for Vision 2030 is to become a high-income country by 2030, by which

[13] The estimated annual per capita figure has been taken from the World Bank, Country Brief Namibia at http://data.worldbank.org/country/namibia; last accessed 21 October 2013.

time the annual per capita income is expected to be US$ 12,000 or more (NPC, 2013). Despite the country's current high per capita figure, several human development indicators indicate that Namibia has not effectively succeeded in addressing problems of high unemployment, widespread poverty and an ever increasing income gap between the rich and poor. This shows that despite the many and some well-articulated national policies and development programmes, including amongst others the: Minerals Policy which has been adopted as the development framework of the minerals industry; Transformation Economic and Social Empowerment Framework (TESEF); New Equitable Economic Empowerment Framework (NEEEF); as well as Targeted Intervention Programme for Employment and Economic Growth (TIPEEG) all have not effectively been able to address the day-to-day socio-economic challenges faced by ordinary Namibians.

Namibia is characterised by a high rate of unemployment, 27.4% of the total labour of force (868 268) is unemployed. Of those unemployed, a majority are the youth in between the age group 15 to 29 years. While the nation marvels in the aspiration of becoming an industrialized nation, a lot more needs to be done in order to accelerate development in the secondary and tertiary sectors of the economy. Specific subsectors within the two sectors, which have been identified as having the potential for accelerated growth and job creation, namely manufacturing, construction, telecommunications, tourism and transport/logistics have not particularly received the attention they deserve. These sectors are thought to also have significant multiplier effects on the economy and as such can be expected to stimulate growth and job creation in other sectors as well. The anticipated shift from excessive reliance on the primary industries for national revenue to secondary and tertiary industries come on the back of declining mineral resources, in particular the depletion of on-shore diamond deposits. Coupled with declining mineral deposits, Namibia's mining sector is highly susceptible to exogenous factors for which it has little control, such as volatile commodity prices and exchange rate.

Extreme poverty which is linked to unemployment is another socio-economic problem that continues to haunt the country. The country's Poverty Reduction Strategy (PRS) – National Poverty Reduction Action Programme (NPRAP) was

developed and approved by the government in 1998. The strategy identified three key areas of concern[14], it examined:

- How to foster more equitable and efficient delivery of public resources for effective poverty reduction across the country;
- How to accelerate equitable agricultural expansion and improved crop production for food security; and
- Options for non-agricultural economic empowerment, including an emphasis on informal and self-employment.

PRS is centres around themes considered priorities for the reduction of poverty in the country. Despite some of the poverty intervention programmes adopted by the government being in place for decades, the country continues to be characterised by poverty in the midst of plenty resources. The extreme levels of poverty among citizens have in the past been attributed to the colonial and apartheid policies. However after many years of independence the blame has shifted to a lack of political will and capacity on the part of the ruling party in particular and the government in general. There is a general perception from the public that government policies aimed at addressing issues of poverty serve no purpose other than to score the ruling party political points. The policies and programmes are held to generally lack resources and mechanisms for effective implementation, monitoring and evaluation, as well as reporting.

4.7 CONCLUSION

Although the overall policy and institutional environment in the country has been satisfactory and supportive of economic development, several challenges still remain. All of which need urgent attention in order to be able to fully realise the country's growth potential. Importantly, there are underlying problems associated with the country's general lack of infrastructure development including roads, power, water and telecommunications; unproductive education system; lack of human resource development and skills shortage; lack of research and development; and

[14] Republic of Namibia. National Poverty Reduction Action Programme 2001 – 2005. Cabinet Decision 34th /01.12.98/002.

the nation's failing health programmes characterised by increasing new cases of HIV infections and other communicable diseases amongst others. All of which continue to hamper current policy efforts and which require urgent attention.

5 CHAPTER FIVE: CONCLUSION AND RECOMMENDATION

5.1 MACROECONOMIC DEVELOPMENT POLICIES

There are positive indications that the country's mining and fiscal policies are paying dividends, at least in terms of attracting foreign investments and revenue gains. National policies, legal and regulatory frameworks that emphasise security of tenure, transparent licencing and effective taxation practices have appealed to many global mining and exploration companies. While many of these national policies are considered to have facilitated in attracting foreign direct investment, they have been strongly criticised for being too pro-foreign investment and less pro-local development. It has been argued that such policies have been framed with a narrow interest, one that is aimed more at attracting foreign investment and less at fostering local development. The current policies have produced questionable welfare gains and developmental outcomes in areas such as employment creation, poverty reduction, income distribution, access to health and education, provision of housing, skills development, research and technological innovation.

Criticism has also been levelled against these policies for failing to take into account environmental impacts as well as social and cultural disturbances associated with mining. Disregard for views and aspirations of local communities by the government has created not only mistrust between community members and their elected leaders, but also tense partnership arrangements between mining companies and local authorities. It is argued that mining does very little in its role of creating meaningful and alleviating poverty.

Undoubtedly mining is the cornerstone of Namibia's economy and there is abundant evidence that the sector will remain essential to the country's development goals. The country's vision for development is articulated in its 'Vision 2030 – Policy Framework for Long-Term National Development' document. At the heart of Vision 2030 is the goal to make Namibia an industrialized state by 2030. In order to achieve its goals the government adopted a development strategy consisting of seven 5-year term development plans, beginning with National Development Plan (NDP1) for the period 1995/1996 – 2000/2001; and ending with NDP7 in 2030. Mining being an

important sector of the national economy is expected to play a pivotal role in spearheading the journey's to Namibia's industrialization.

In order to articulate how mining is to contribute to the country's socio-economic development, the government through the Ministry of Mines and Energy developed the "Minerals Policy of Namibia". Namibia is one of only four[15] member States of the SADC with fully articulated policies (Mtegha et al., 2006: 61). The policy aims to ensure the continued development of the mining sector by creating and promoting an environment conducive to both local and foreign investment in mining. It also aims to ensure that opportunities for the Namibian people to benefit from their country's mineral resources in line with the government's policy on socio-economic upliftment are created.

Despite Namibia having a fully articulated minerals policy, it seems to have achieved very little in the way of improving the overall quality of the populous through its mineral wealth. This is demonstrated by the fact that while the country is classified as a middle-income country, it still remains characterized by high levels of unequal income distribution, a high rate of unemployment and widespread poverty. The deficiencies in attaining the developmental objectives of the minerals policy are arguably attributed to:

Weak governance particularly in the area of policy formulation as characterized by a narrow minded minerals policy, which is geared more towards attracting and promoting foreign investment and less towards building and strengthening local development;

Narrow or one dimensional policy formulation which fails to highlight and place emphasis on building strong mining linkages into the local, regional and national economies;

[15] South Africa, Namibia, Malawi and Tanzania.

Lack of well-formulated mining regulations that strengthen mineral policy development objectives, in particular those aimed at enhancing employment creation and poverty reduction. The Minerals (Prospecting and Mining) Act[16] which is the main regulatory instrument of the law is said to be pro large-scale multinational corporations. This has created an intrinsic perception amongst mining companies of their right to control and exploit the country's mineral resource as they find fit. All of which is done in disregard of important stakeholders in the wider community and at the grass roots;

Lack of effective and appropriate institutions and human resources, coupled with general reluctance on the part of government to effectively implement, monitor and evaluate the minerals policy objectives;

Lack of clear government initiatives on how to promote and ensure greater local participation in the mining sector; and

Lack of transparency and accountability in public finance management systems, as Prime Minister Hage Geingob highlighted in a local newspaper article[17]:

> "Public finance management performance affects the performance of all sectors, such as macro-economic environment, private sector opportunities and service delivery in [mining], agriculture, health, education, transport, energy and public safety. When it works, all other sectors have a chance to succeed; but when public finance management fails, all other sectors fail too" (Geingob, 2013).

It is recommended that in order to overcome the current challenges facing the country's macroeconomic development policies and in particular those directly linked to mining, the following will require prompt consideration:

[16] No. 33 of 1992.
[17] The Villager newspaper. 7th September 20133, p. 2. Prime Minister Dr Hage Geingob speaking at a Ministry of Public Finance Management Workshop held in Windhoek on the 30th of September 2013.

Government should formulate and implement policies and law reforms with clear objectives for the mining sector. This must enhance development through a holistic approach. That is, mining policy objectives must be effective, consistent, transparent, sound and practical. They must be representative of the divergent views and interests so as to appropriately meet stakeholder expectations;

Government must formulate robust development and intervention strategies that offer greater positive impacts on economic opportunities for the poor such as in terms of substantial additional employment opportunities, investments in basic public infrastructure including schools and institutes of higher learning, health care facilities, roads, provision of water and electricity, etc.;

Government must develop and strengthen its human resource and institutional capacities in order to support and ensure proper governance of the mining sector;

Government through the minerals policy should make it mandatory for mining companies to participate in local skills development, capacity-building programmes, research and development initiatives, as well as impose minimum levels of mineral beneficiation;

Government must ensure effective and appropriate regional harmonization of mining policies, standards, legislation and regulatory frameworks. This is important not only to ensure proper regional integration but also maintain Namibia's global competiveness;

Mining companies must formulate and adopt new social contracts that are more equitable in mineral revenue sharing and that maximize positive local impacts;

Mining companies must adopt new social contracts for mining that could result in integrated sustainable development, with diverse economic linkages and increased political stability, social and environmental well-being; and

Mining companies must adopt contractual arrangements that have the potential to foster mutually more beneficial private public partnership arrangements;

At the regional level, SADC member states are advised to establish broad-based mineral boards to act as advisor and watchdog in minerals administration (ECA, 2004: 32). They are advised further to limit the initial term for issuing exploration licences in order to evaluate the progress achieved during exploration, and make it mandatory for licence holders to regularly submit geological information in a standardized format for all mining-related projects.

5.2 THE ROLE OF MINING

The long tradition of mining in Namibia has fuelled growth of wealth in the country's economy. This undoubtedly has been and continues to be the single most important role mining plays in economic development of the country. Mining contributes to the national economy in several ways:

Contribution to GDP - Mining contributes on average 11% to the GDP, making it one of the largest sectors of the economy. The contribution is expected to increase in the foreseeable future as new mining projects come online and existing ones continue to expand. Some of the new major projects include the Tschuadi copper mine project in Tsumeb owned by Weatherly Mining Namibia; the Otjikoto gold project located near Otavi, owned by B2Gold Corp a Vancouver based gold producer; and the Husab uranium project near Swakopmund belonging to Swakop Uranium, which is the 3rd largest uranium deposit globally.

Diamond production continues to be a significant source for external revenue albeit escalating input costs and declining ore grades, both on land and at sea. Focus is now shifting to marine diamonds as Debmarine continues to record high diamond production as a result of massive capital in the new mining vessel, the MV Mafuta. The diamond industry is certainly set to carry the economy for some time still. The CMN reported that Namibia's mining industry generated N$20.93 billion in revenue during 2013, a 13% increase from N$18.51 billion generated in 2012 (CMN, 2014: 80).

Contribution to Export Earnings - Namibia's merchandise exports are dominated by mineral exports and these accounted on average for 50% of the total value of exports since 2007. In recent years (2012 to 2013), the average share of mineral exports to total exports has decreased slightly to 45.1% and 47.2% respectively, according to a 2013 Bank of Namibia (BON) report.

Contribution to Tax Revenue – According the Minerals Policy of Namibia: "Direct tax revenue from the mining sector remains of considerable importance to the income of central government. Since independence, corporate taxes from mining companies have contributed between 30% and 50% of all receipts. These values are increased when direct taxes on diamond exports are taken into account" (MME, 2003: 7). In 2012/2013 total tax revenue received from mining amounted to N$2.38 billion down by 13.6% from the 2011/2012 financial year (CMN, 2014: 80).

Contribution to Employment and Poverty Reduction – Notwithstanding the fact that mining with its huge economic footprint employs less than 2% of the total labor force according to 2012 NLFS figures, it still remains the largest private sector employer. Indirectly, mining is estimated to provide an income to just over 70 000 people through its multiplier effect. This is a relatively significant figure considering that country's total population is estimated to be only 2.09 million (NLFS, 2012).

There are notably, however, problems of skills shortages that impede government efforts to ensure greater participation in mining through employment. Mining companies are now also beginning to realize that in order to better address problems of unemployment and poverty they need to strengthen linkages between mining and communities in which their activities take place. This can be achieved by promoting down-stream linkages such as value addition, up-stream linkages such as local input of goods and services and side-stream linkages such as research and technology development.

Contribution to Socio-economic Development – In the broader sense, mining contributes greatly to national socio-economic development goals. It includes building human resource capacities, skills transfer and education. Infrastructure development including roads, ports, railway lines, health care facilities, schools, provision of housing, telecommunications, water and electricity, research and development.

It is evident that mining is indeed important to Namibia's economy and its developmental objectives. However despite its current significance, the mining sector has the potential to do more in terms of broad-based growth and development. At the moment, the sector remains poorly diversified. There is greater focus on attracting foreign investment and promoting export than there is on promoting and strengthening local development. There is an urgent need to promote linkages and also direct capital investment generated from mineral resources into other sectors, such as manufacturing, telecommunications, research and development.

5.3 MINING CONTRIBUTION TO THE ECONOMY POST-2008 CRISIS

The third objective of this research paper was to determine to what extent mining has contributed to Namibia's economic development post the 2008 economic crisis. Based on the analysis of various macroeconomic indicators from several sources, it is evident that the mining sector has contributed and continues to contribute significantly towards the country's economic development. This is despite the fact that the country's economy remained vulnerable to external shocks such as the

effect of the global crisis of 2008. This is evidenced from the revenues that were generated through mining and mining related activities. The receptiveness of revenue growth to the adverse effects of the external economic environment was apparent, with such growth declining as a percentage of GDP after 2008. This in part explains why several of the NDP3 targets were not met at the end of its five year cycle. The NDP3 cycle coincided with the onset of the 2008 global financial and economic crisis, hence its relevance to this study.

According to the National Planning Commission (2013), export growth in real terms averaged just 1% per year, against a target of 7% over the NDP3 period. Private investment including FDI, achieved an actual investment of N$43.7 billion against a target of N$50.3 billion during the same review period (NPC, 2013: 16). Foreign export earnings and FDI are two important sources of revenue to the national economy in as far as the mining sector is involved. However, due to the fact that the country has an open economy, external factors that generally affect the mining sector have had serious implication on the economy pre and post 2008. The volatile commodity prices that prevailed during the global economic crisis have resulted in the country experiencing low levels of economic growth and high levels of unemployment. In addition, levels of income inequality grew together with a high rate of poverty, as more employees were being retrenched owing to inadequate and volatile economic growth.

In 2007/8 when NDP3 came into effect, the number of goals to be reached had increased in comparison to those from previous NDPs (NDP1 & NDP2), the following four goals remained central to all three NDPs: enhanced income equality; high economic growth; increased employment; and the eradication of poverty. Despite these bold goals, other structural challenges have however hampered the effective realization of these goals. If the country is to succeed in addressing these goals and put it on a sustainable development trajectory, the following structural weaknesses need to be addressed: underdeveloped institutional capacity; lack of adequate and effective development strategies needed to execute, monitor and evaluate development; inadequate and less effective regulation to support development strategies; under-developed capital markets; low participation by Namibians in the

economy; shortage of relevant skills; and corruption and lack of accountability amongst others.

In 2009 Namibia was classified as an upper-middle-income country due to the fact that its GDP had increased at a higher rate than the population had increased (NPC, 2013: 20). The reclassification occurred despite the fact that the country's Human Development Index (HDI) remained virtually stagnant over the past three NDP periods. According to the NPC (2013: ix), in 2011 Namibia's HDI of 0.625 was below the world's HDI average of 0.682, and the country was ranked 120 out of 187. Furthermore the economy has not expanded at a rapid enough and sustainable rate to keep abreast with growing social challenges. This has been reflected in the country's overall high rate of unemployment which peaked at over 50% during NDP 3; as well as through the low Gini coefficient of 0.58 which depicts the unacceptable level of income inequality. Notwithstanding the challenges facing the Namibian economy, the country has realized significant achievements towards development. In contrast to other emerging economies on the continent, Namibia boasts of strong institutions, including a stable political environment, good governance and respect for the rule of law which are all needed to support a stable macroeconomic environment.

The outlook for the country's development looks promising. However, in order to genuinely transform the country into a prosperous and industrialized nation will require greater diversification of its narrow, predominantly resource-based economy. There needs to be renewed and concerted effort in the way of developing the manufacturing and service sectors of the economy. These sectors of production do not only hold the potential to create more employment opportunities, but also to sustain economic growth by counteracting the risk of resource over-exploitation. As Krugmann (2001: 4) concludes:

> "If and only if, Namibia's precious renewable resource capital is maintained in quantity and quality through sound management can economic growth be sustained and [sustainable development] SD be attained. To maintain renewable resource capital and counteract the risk of resource over-

exploitation, there is a need to pursue mechanisms to encourage consumptive resource users to re-invest in the natural resource base and to decouple economic growth from natural resource use, by increasing the value of economic output per unit natural resource input".

5.4 WHO REALLY BENEFITS FROM NAMIBIA'S MINERAL RESOURCES

It is evident that mining generates huge amounts of revenue for the national economy however, what is not often clear is whether the vast majority of Namibians really do benefit from the country's mineral resources. It is generally held that only a selected, small percentage of the citizens have and continue to benefit from the country's abundant mineral resources in terms of wealth distribution. It is thought that the bulk of mineral revenues get taken up by foreign multinational corporations as reward for their substantial upfront capital investments. It is thus not surprising that negative sentiments that the mining industry makes huge profits for foreign shareholders and leaves very little for locals are widely held. This has led to growing discontent and tension regarding how the nation's wealth is being distributed amongst the citizens. However, an online report by Deloitte (undated) appeared to indicate that only a small residual share of the inherent value of the mining opportunity finds its way to original shareholders as in **Figure 5.1**.

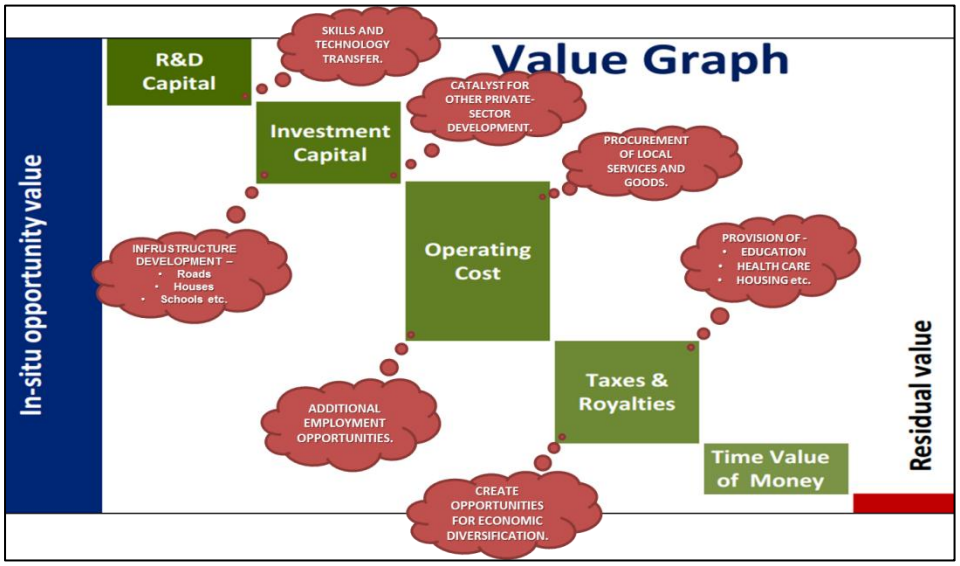

Figure 5-1: Investment opportunity value graph, (modified after an undated report by Deloitte).

The graph attempts to portray the broad spectrum along the value chain, through which re-distribution of wealth can take place. The financial benefits generated from mineral resources by mining operations are only part of the picture. The benefits extend beyond mining simply providing a source of revenue to the state in the form of taxes. When considered as a whole, the benefits that accrue from the extractive and minerals industry are not only substantial, but possibly more widespread than they generally are thought to be. Key benefits include: “substantial additional employment opportunities; and investments in basic public infrastructure, goods, and services with universal access, for example, transport, water and power” (Weber-Fahr et al., 2001: 9).

The irony of Namibia’s mineral wealth on the one hand, and the pervasive poverty of its people on the other, remains grim reminders of the country’s socio-economic imbalances. Arguably, Namibia like many African countries has failed to not only obtain commensurate compensation from exploitation of its mineral resources, but also achieve equitable wealth sharing amongst its people. Key lessons learnt from past experiences dictate that in order to achieve better mineral resources revenue allocation and redistribution of wealth benefits, the following actions are recommended:

- Improve the governance and management of revenue flows originating from mining by reinforcing governance systems, organizational and institutional capacity, and through decentralization of decision-making and resource allocation. This will ensure not only that government obtains an adequate share of mineral revenues, but also ensure efficient use thereof.

- Unbundle the mining sector through strategies that promote greater diversification from minerals such as by optimizing linkages between mining and other sectors of the economy, and maximizing business multipliers. Such strategies will ensure greater enhancement in retained mining value.

- Empower communities in mining regions to be able to make informed decisions and to forge more meaningful and last partnerships with other stakeholders.
- Encourage local mineral beneficiation and value addition through increased output of manufactured goods and services.

- Encourage local procurement of goods and services in order to support local development strategies.

Notwithstanding the fact that there will always be differing interests, the best way forward remains one that is able to transform the country's mineral wealth into opportunities that create alternative sources of income and thereby diversify the local and national economy. It is highly improbable that the revenue generated from the extraction and sale of the country's mineral resources alone can ever be enough, such that the benefits reach all the citizens. Equally important to consider is the fact that if corruption and macro-economic mismanagement are allowed to thrive in an economy, they risk destroying economic development opportunities that are associated with mineral resources.

5.5 MINING AND THE ENVIRONMENT

Wherever mining activities are involved, there will generally always be conflicting interests between: those that advocate for economic development through the exploitation of mineral resources on the one side, and those that advocate for the preservation of the environment on the other. In dealing with such issues there is the need to maintain objectivity and avoid bias. It is essential that all advantages and disadvantages that may accrue from each project are carefully assessed. As long as these competing interests persist, the challenge will always remain to find the right balance between socio-economic and environmental objectives. The optimal outcome is one that best integrates both socio-economic and environmental goals.

The government having recognized the adverse impacts that developmental projects cause to the environment, enacted the EMA which "enshrine important

environmental management principles and mechanisms, including EIAs, prevention and mitigation methods and procedures in law" (Krugmann, 2001: 6). In order to mitigate the adverse effects associated with development projects, it is a requirement of the Act that an EIA is first conducted. EIAs provide a useful tool through which potential adverse environmental impacts, such as water and air pollution, as well as land contamination and degradation can be assessed. EIAs also provide valuable information on what measures to put in place in order to eliminate, or the very least minimize the negative impacts associated with development projects.

5.6 CONCLUDING REFLECTIONS ON THE RESEARCH

The report does not in any manner suggest to being an exhaustive account of the role of mining in economic development in Namibia. It does however focus on the important role mining plays in the social and economic development of the country. It was designed to explore and build an understanding of Namibia's macroeconomic policies and development strategies with regards to mining. The significance of the research is centered on the country's four major, and closely intertwined development objectives: achieving sustained economic growth; creating meaningful employment; eradicating poverty; and increasing income equality. The imperatives of studying are that it provides the latest and substantial evidence on the significance of the mining sector in national development.

Namibia is endowed with abundant mineral resources which have helped the country maintain steady economic growth. Despite this fact, the country still has amongst the highest levels of unemployment, unequal income distribution and extreme poverty in the world. There is evidence that despite several years of moderate economic growth coupled with the government's policy intervention strategy, the government has still been unable to effectively address the majority of the national socio-economic challenges. The current legislative and policy framework in place has failed to adequately address the socio-economic challenges owing to a general lack of enforcement, monitoring, evaluation and reporting mechanisms. In the absence of well-designed mechanisms it is not only difficult to ensure transparency and

accountability of the process, but also overall socio-economic development efficiency. It is also imperative that Namibia's development strategies focus on creating new opportunities to develop diversified industries which consequently decrease the dependence on mineral resources.

It has been established that current levels of economic growth did not necessarily translate into broad-based sustainable growth or real socio-economic development. Lack of resource diversification has been identified as a major obstacle in the way of gainful economic transformation. In particular weak linkages between mining and other sectors of the economy have limited local business opportunities and impeded industrial development. There is therefore an urgent need to create a conducive environment for development of down-stream, up-stream and side-stream linkages, as well as intensify investment of capital generated through mineral resources into other sectors of the economy. There is equally an urgent need to develop enforcement strategies that will help strengthen mining linkages into the economy.

Despite its impressive mineral wealth Namibia continues to grapple with social challenges. Amongst these challenges are the country's high levels of poverty and unemployment. This state of affair has left many locals feeling that they are not fully benefiting from their natural resources. Mineral revenue mismanagement and biased revenue sharing amongst stakeholders has put strain on partnership arrangements between mining companies, government, local communities and civil society at large. The effective management of mineral revenues in long-term socio-economic development marks the prudent transformation of finite mineral wealth into other forms of long-term wealth needed to ensure inter-generation equity.

5.7 FURTHER FUTURE RESEARCH

The current study looked at the positive role mining plays overall, in enhancing Namibia's economy. Due to the interconnected nature of inputs and outputs in the economy, it is recommended that an in-depth study of optimization of mining linkages with other sectors of the economy is carried out. It is also recommended that an in-depth study to determine whether the accelerated development of more

labour intensive manufacturing or services industries is not a better investment option for Namibia, in the medium to long term.

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