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IMPLEMENTING A SOUND MINERALS POLICY IN NAMIBIA:

KEY CHALLENGES AND OPPORTUNITIES

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

Johannesburg, 2017

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 for any degree or examination at any other University.

…….

(Signature of Candidate)

……day of…….……... (month)…….. (year)

ABSTRACT

Mining makes a major contribution to Namibia's economy as an employer and generator of foreign exchange. Despite the country's mineral wealth, mineral exports are still largely of the unprocessed/low value-added types, which generate relatively low returns. In 2003, the Namibian government unveiled its Minerals Policy, aimed at boosting the potential of the mining industry. However, the implementation of the Minerals Policy has been slow and its envisaged economic benefits have not yet materialised.

This research report explores the factors impeding the effective implementation of Namibia's Minerals Policy, a topic that has received little formal attention. The researcher followed the grounded theory approach, analysing a range of existing materials and acquiring first-hand input from various stakeholders in or connected to the minerals sector.

The lack of an implementation plan and a supporting legal and regulatory framework for the Minerals Policy emerged as the main causes of the Policy not gaining traction in the country. These problems, in turn, were largely due to skills and capacity limitations within government and, to a lesser extent, some factors originating in the external environment. The research report concludes with a number of recommendations aimed at clearing the obstacles to the full implementation of the Minerals Policy, which will enable Namibia to take better advantage of the opportunities presented by the minerals sector, particularly from an export perspective.

DEDICATION

I dedicate this work to my grandmother, Mrs Maria Shaanika (Nakambale), for her role in my upbringing and for taking care of everything for me during my school days.

She has been a continuous source of inspiration to me in my journey through life and I owe her a great deal. Without her wisdom I would not be the person I am today.

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LIST OF ACRONYMS

AMV	Africa Mining Vision
ASM	Artisanal and Small-Scale Mining
AU	African Union
CEDEFOP	European Centre for the Development of Vocational Training
CSF	Critical Success Factor
EIA	Environmental Impact Assessment
EMIS	Education Management Information System
EMP	Environmental Management Programme
EPZ	Export Processing Zone
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
ICMM	International Council on Mining & Metals
ICT	Information and Communication Technology
JVAC	Joint Valuation Addition Committee
MET	Namibian Ministry of Environment and Tourism
MME	Ministry of Mines and Energy
MTI	Ministry of Trade and Industry
NDP	National Development Plan
NHRP	National Human Resources Plan
NEEEF	New Equitable Economic Empowerment Framework
NIPAM	Namibian Institute for Public Administration and Management
NODSOM	Namibia's Occupational Demand and Supply Outlook Model
NTA	Namibia Training Authority
NUST	Namibia University of Science and Technology
OECD	Organisation for Economic Co-Operation and Development
R&D	Research and Development
RPL	Recognition of Prior Learning
SADC	Southern African Development Community
SADC-EU EPA	SADC-EU Economic Partnership Agreement

SEA	Strategic Environmental Assessment
SIA	Social Impact Assessment
SME	Small and Medium-sized Enterprise
SSP	Sector Skills Plan
TVET	Technical and Vocational Education and Training
UNECA	United Nations Economic Commission for Africa
UNAM	University of Namibia
VET	Vocational Education and Training

CHAPTER 1: INTRODUCTION

1.1 Background

Namibia is situated on the south-western seaboard of Africa (Figure 1.1). Its neighbours are Angola to the north, Botswana and Zimbabwe to the east and South Africa to the south. The country is bordered on the west by the Atlantic Ocean.



Figure 1.1: Map of Namibia with neighbouring countries (Google Maps, 2016)

Namibia operates under a system of multi-party democracy, with checks and balances exercised through the state organs of the executive, legislative and judiciary. It is a constitutional requirement that presidential elections take place every five years, while regional and local government elections take place every six years (Republic of Namibia, 1990).

Namibia is classified as a middle-income country, and is regarded as having good physical infrastructure and a fairly strong public administration record. It is also well-endowed with non-renewable natural resources (African Development Bank, 2009).

Namibia is renowned as a producer of quality diamonds, uranium, zinc and fluorspar, as well as gold bullion, copper, lead concentrate and salt (Ericsson, 2014). The Namibian economy relies heavily on the export of extracted and processed minerals. Diamonds are the most important product category from the minerals sector, constituting 70% of the country's total mineral exports (African Development Bank, 2009).

The country's mineral rights are vested in the State and the mining sector — considered to be one of the pillars of the economy — is primarily regulated by the Minerals (Prospecting and Mining) Act No. 33 of 1992. In 2003, nearly 12 years after the promulgation of the Act, the government adopted a Minerals Policy with the intention of enhancing the development of the minerals sector and creating an environment that would attract both foreign and local investors.

While the introduction of a Minerals Policy was an important and necessary step for Namibia, the practical implementation thereof has been sub-optimal. Although there has been a significant improvement in terms of the minerals sector's contribution to GDP, this is largely attributable to greater political stability in the country coupled with China's high demand for metals during the boom period (from 2004 to 2014). However, the researcher believes that the growth of the minerals sector — particularly as a source of more diverse, beneficiated products that have higher export value — could be accelerated if the Minerals Policy were properly implemented. For this to happen, an achievable implementation plan, with clear and measurable milestones, is required. This should be accompanied by a sturdy and coherent legal framework which ensures that the different components of the Policy can be acted upon via effective regulations and well-resourced and accountable institutions. Regulations need to guide the actions of mining companies and other entities in the minerals supply chain, and should dovetail with other national policies — from fiscal and monetary policy to trade

policy. To date, progress in erecting such a legal framework has been slow and, moreover, there is no evidence of a serious implementation plan for the Minerals Policy. These shortcomings—which are largely attributable to skills and capacity deficiencies within government—have impeded the minerals sector's potential to deliver wide-ranging benefits to the national economy.

For Namibia's minerals sector to deliver true economic value, skilled and committed people within government are needed to drive the policy implementation process. All too often, particularly in developing countries, policies are enthusiastically formulated but poorly implemented because of a lack of strategic vision and management skills, and/or a reluctance to assume accountability for the performance of a sector that is impacted by so many different forces. The researcher is of the opinion that while there have been several studies conducted on the skills shortage in Namibia, none of the identified studies has looked at how skills and capacity shortcomings within government go to the core of the minerals sector's regulatory and operational deficiencies which, in turn, have made it difficult for the Minerals Policy to gain proper traction.

This research report seeks to put Namibia's Minerals Policy under the spotlight, analysing the factors (both structural and human capital-related) contributing to its implementation problems to date and proposing ways in which the Namibian government can address current weaknesses so that the potential of the minerals sector can be realised.

1.2 Research Problem Statement

"The major challenge faced by the government is to ensure the sustainable contribution of minerals to the socio-economic development of Namibia" (MME, 2003: 9). The Namibian government has long recognised the important role that the minerals sector plays in the country's economy, and developed a Minerals Policy in 2003 geared towards the sustainable development of the sector. The Minerals Policy, which was formulated under the direction of a team of external consultants and has enjoyed consistent support from the government, reflects the collective views of all relevant stakeholders in the country.

Arriving at the right policy mix is widely viewed as a major step towards attaining national goals. However, a very good policy on paper does not, on its own, guarantee that the desired goals will be reached; committed action is also required. In this regard, the implementation of Namibia's Minerals Policy has unfortunately been weighed down by a number of challenges not anticipated at the planning and formulation stage.

Two key economic imperatives that form part of the Minerals Policy's objectives are: to bring about higher levels of minerals beneficiation for export purposes, and to develop the human resources base so as to meet the manpower requirements of the minerals sector. For this to become a reality, those within government who are tasked with managing the process of implementing the country's Minerals Policy need proper training and support so that they have the skills and capacity to execute their responsibilities. This has important implications for the growth and diversification of the minerals sector as a whole.

Given the strategic significance and vulnerability of Namibia's minerals sector, the researcher sees this area of research as being of great interest both to those in the academic field as well as to policymakers in government who are guiding economic thinking in the country. Specifically, the research is aimed at identifying those factors supporting and/or impeding the implementation of Namibia's Minerals Policy, and then mapping out what steps need to be taken to improve the implementation process so that the ground is prepared for a more dynamic, export-focused minerals sector.

1.3 Importance Of The Study

The Minerals Policy of Namibia is a strategic document that aims to provide guiding principles and direction to those operating directly and indirectly in the minerals sector. The country is heavily reliant on its minerals sector from an economic growth point of view. However, the true potential of Namibia's minerals sector lies in producing more beneficiated products which attract higher prices in foreign markets. Adding value is the route to achieving higher export revenues and more sustainable development patterns in the minerals sector and

economy as a whole. Achieving this involves, inter alia, harnessing strengths and clearing obstacles.

Against the above backdrop the importance of having a clear, purposeful and realistic plan for implementing the Minerals Policy cannot be overstated. Yet, this has been sadly lacking in Namibia. Without a clear 'route map' and measurable targets (including accountability areas), it has been practically impossible to gauge the value and relevance of the various elements of the Policy, which is particularly important given the inevitable passage of time and changing internal and external environments. Where attempts have been made in certain quarters to adhere to certain aspects of the Policy, these have been piecemeal and poorly coordinated.

This study is important for two reasons. Firstly, it identifies and analyses the 'status quo' with regard to Namibia's Minerals Policy and its implementation challenges (an area that has received little formal attention). Secondly, it recommends how the implementation process can be systematised and generally enhanced. This will enable the various players in the minerals sector to find new direction and take advantage of the myriad commercial opportunities on offer, particularly at an international level.

1.4 Research Objectives

The main objective of the research is to identify and understand the obstacles impeding the full implementation (including ongoing monitoring) of Namibia's Minerals Policy.

Drilling down into this main objective, two subsidiary research objectives emerge:

- Firstly, to analyse whether the Namibian government has devised an appropriate statutory/regulatory framework which supports the achievement of the objectives of the Minerals Policy and, by implication, the economic imperatives of stronger and more diversified economic growth and export development; and

- Secondly, to assess the skills and capacity levels within government with a view to identifying what is constraining the proper implementation of the Minerals Policy.

To provide the necessary context, the Minerals (Prospecting and Mining) Act No. 33 of 1992 will be briefly reviewed, with two of the Policy's key objectives providing important reference points:

- "Promote and encourage maximum local beneficiation of mineral products to ensure that as many of the economic benefits as possible are retained in Namibia for the benefit of all its citizens; and
- Ensure the establishment of appropriate educational and training facilities for human resources development to meet the manpower requirements of the minerals industry" (MME, 2003).

Another key objective of the research is to offer, based on the above analysis, recommendations to government on how the implementation of Namibia's Minerals Policy can be streamlined and fast-tracked so that its intended outcomes and benefits can be experienced, not only in the minerals sector but also throughout the economy as a whole.

1.5 Research Hypothesis

The following **null research hypothesis** has been formulated in respect of the research objectives of this study:

HN1: Insufficient skills and capacity within government in Namibia have resulted in the government's failure to take the necessary legal and practical steps to ensure the effective implementation of the country's Minerals Policy.

1.6 Research Methodology

A grounded theoretical research methodology (comprising a survey approach and gap analysis) was used in the study. Such an approach is generally used to obtain

data from industry-based and other relevant reports for the purpose of trend analysis. This research methodology was chosen because of limitations in being able to gather quantitative data. In addition, there is a general lack of similar studies to this one having been undertaken in Namibia; thus, there is a dearth of empirical data revealing attitudes and strategies adopted by relevant organisations in relation to the theoretical concerns of the study.

In this study, consultations and discussions were held with all categories of stakeholders concerned with the minerals sector in Namibia, including officials from the Ministry of Mines and Energy, the Chamber of Mines, local academics and professionals from the mining industry. Consultations and discussions were favoured over formal interviews as it was felt that these would lead to a more in-depth understanding of the emergent themes.

To gauge the impact of relevant skills needed for the implementation of the Minerals Policy in Namibia, the researcher referred to ministerial speeches, annual reports and the 2012-2017 Strategic Plan of the Ministry of Mines and Energy, as well as various information-sharing workshop materials. He also drew extensively on his own personal experience from the Minerals Policy and Investment Course conducted by the University of the Witwatersrand in South Africa.

In terms of the literature review, the researcher focused on minerals policy implementation experiences and associated skills challenges in selected jurisdictions, which were presented in hard copy or online by journals and university libraries in the form of scholarly articles, books and other academic writings, as well as web-based opinion pieces. In particular, the minerals policy documents of Tanzania, South Africa, Malawi and Zimbabwe were consulted to acquire a practical understanding of how these countries go about planning, implementing and monitoring their respective minerals policies.

1.7 Limitations of the Study

There were three main limitations of the study. The first was the absence of questionnaire-based feedback. While questionnaires, because of the standardised approach used, can facilitate an orderly comparison of responses, the researcher ascertained that (due to resource limitations) it was not possible to approach a sufficiently representative sample to deliver meaningful results. The second limitation was the likelihood of a lack of objectivity in the responses of certain stakeholders who participated in the study. Different stakeholders in the minerals sector have their own vested interests, and this might have contributed to somewhat biased responses. A final limitation of the study was the lack of prior research (and thus available literature, data and information) on the implementation of Namibia's Minerals Policy, which would have helped to give a stronger context to the analysis.

1.8 Summary Of Chapters

Chapter 1 introduces the study, setting out the background to the investigation, the research problem statement, why the study is significant, the research objectives, the research hypothesis, a brief overview of the research methodology, limitations of the study, and a breakdown of the remaining chapters in the research report.

Chapter 2 provides a literature review covering the role and strategic importance of a country's minerals policy in general, as well as the history of and rationale for Namibia's Minerals Policy in particular. The chapter concludes with an overview of the main points raised.

Chapter 3 discusses the broad tenets of policy implementation and why it can be difficult to achieve — particularly within government. The chapter also briefly analyses the Minerals (Prospecting and Mining) Act No. 33 of 1992 and its link to Namibia's Minerals Policy. It concludes with an overview of the importance and

challenges of human capital development, and how Namibia has fared in this regard.

Chapter 4 outlines the research methodology used and offers an integrated analysis and the major findings from the research. In this regard, it focuses on the technical, structural and environmental constraints, skills, and capacity shortcomings that have hampered the implementation of Namibia's Minerals Policy. It also summarises the main findings in a 'report card', using the Minerals Policy's 12 objectives as points of reference.

Chapter 5 offers the main conclusions in the context of the problem statement and research objectives, as well as recommendations on how the government can improve the Minerals Policy implementation process. Finally, it offers some suggestions for possible future research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter provides an overview of previous research conducted on the role of a minerals policy in a country's policy mix. The discussion presented in the chapter is divided into two sections. The first section offers broad definitions of policy and minerals policy respectively, examines the goal of a minerals policy and its environmental and social impacts on mining activities, and also considers the various dimensions of policy implementation. The second section provides an overview of Namibia's Minerals Policy, its key aspirations and concerns, and the factors that will ultimately determine its success (or otherwise).

2.2 Minerals Policy Overview And Background

According to Panday (2007: 240), "a policy is a broad guideline of actions designed to achieve some objective(s) of goal(s)". He pointed out that a policy can be translated into a number of different programmes or projects which, when executed, ensure that the broader objectives envisaged in the policy are realised. Leonard and Thomas (1995, cited in Mtegha et al., 2006: 232) defined a policy as a vision, aspirational statement of intent or strategic plan "that provides a basis of ensuring predictable decisions and actions".

A policy is said to be 'public' when it is concerned with matters of public interest and formulated under the auspices of the government's legal machinery (Panday, 2007). Overall, a policy is the result of a process in which public problems are identified and various government policy statements are proposed and prescribed courses of action agreed with a view to resolving such problems. "The goal of a mineral policy is to achieve good governance and transparency in the management of natural resources, in order to enhance their contribution to national and regional economic developments" (De Sa, n.d.: 493). The Department of Energy, Mines and Resources (DEMR) in Canada (1974, cited in Mtegha, 2014: 7) defined a minerals policy as "the sum of government decisions and actions that influence

the mineral system, and the ways in which the system itself affects the economy and society in general".

Otto and Cordes (2002) suggested that a well-considered and realistic national policy framework should reflect a clear understanding of a country's overall and minerals sector-specific objectives and how mineral production can contribute to the realisation of such objectives. It is generally accepted that an effective minerals policy provides for the State to regulate and facilitate minerals development but not to become an owner and operator of mining ventures (De Sa, n.d.). However, the governments in SADC (Southern African Development Community) member countries (e.g. Namibia and South Africa) not only regulate and facilitate minerals development; they are also involved in mining ventures, which is contrary to the best practice advocated by De Sa (n.d.).

De Sa (n.d.) believed that a country's mineral potential, political stability and infrastructural quality determine the exploitability of any given mineral deposit. Matshediso (2004) echoed De Sa's sentiments, i.e. a country's ability to attract exploration investment is dependent on good mineral potential, a stable government, a sound fiscal regime, a favourable climate for foreign investors, a well-developed legal system and sound infrastructure.

Investors prefer a minerals policy that is certain and consistent, and brings predictability to the issue of return on investment. However, Campbell (n.d.) advised that standardised legal and fiscal frameworks that create a favourable environment for investment but do so at the expense of a country's development challenges and priorities, are neither viable nor in the interests of the stakeholders involved.

Dougherty (2011) was of the opinion that well-established policy regimes have specific mining laws that are geared towards attracting investment as part of a larger development agenda. Mtegha et al. (2006) made a particularly bold contribution to the literature, saying that a minerals policy should aim to attract private investment from foreign sources so that public taxes can be allocated to social and economic development initiatives. The idea behind the policy should be

to benefit the host country by pursuing a development agenda, which includes using available resources to improve the livelihoods of the country's citizens.

The ICMM (International Council on Mining & Metals) and Commonwealth Secretariat (2009, cited in Shimutwikeni, n.d.) indicated that developing countries are intent on attracting foreign investment that is geared towards developing their minerals sectors. According to Shimutwikeni (n.d.), the ability of developing countries to attract foreign investment is in fact key to their political and macroeconomic stability. However, investment in a country's minerals sector could bring geological risks, which should not be overlooked as they could negatively impact the sector's competitiveness.

In work done by Mtegha et al. (2006), it was acknowledged that local communities are primarily preoccupied with social issues; thus, a minerals policy should aim to cater to local communities' needs through an appropriate blend of physical and administrative benefits. Lupalezwi (2014) concurred with this, indicating that in the case of Namibia, investment in the minerals sector has benefited the masses in the form of job creation and the transfer of knowledge to various segments of the mining industry.

However, Lupalezwi (2014) was quick to point out in her findings that although Namibia has been enjoying positive economic growth and prudent macroeconomic policies, unemployment continues to be a huge challenge in the country. While new job opportunities in the mining sector alone would probably not eliminate the unemployment problem completely in Namibia, they could nevertheless be a catalyst for economic growth.

Although mining makes a significant contribution to many countries' economic growth, De Sa (n.d.) said that mining operations have huge (irreversible) economic, environmental and social consequences for those areas in which they are located. Poor management of the impacts of mining can negatively influence the economic and social character of a particular region or even the whole country. He further emphasised that the impacts of mining can, in the worst case scenario, seriously limit the ability of surrounding communities to make a living,

especially in areas where the population relies on their natural environment for their livelihood.

Mtegha (2005) suggested that a minerals policy framework should be revised periodically to assess the impact of policy statements, to determine which initiatives have been successes or failures (and why), and to propose courses of action for the future. This recommendation is in line with the observation of Buck and Elver (1970, cited in Mtegha, 2014: 33) that "policy should evolve to reflect domestic and international circumstances as they relate to national objectives, and that the application of policy to specific areas is a highly dynamic process". Of course, an effective minerals policy needs to be accompanied by an implementation plan that allows national objectives to be met (Mtegha et al., 2006).

In a democratic State, policies are articulated in legislation. Most companies favour minerals-related legislation that gives due regard to economic, social, environmental and governance considerations. Policies are implemented, in turn, through various media and mechanisms, including guiding principles, policy statements, Acts and regulations (Rossouw and Wiseman, 2004).

Mtegha (2014) believed that for a minerals policy to gain traction, the government must provide conditions that guarantee tenure, stability of investment and competitive fiscal frameworks. Once the government has created an enabling environment, it can proceed to extract appropriate taxes (including those derived from export activities) so that it can attend to its economic and social responsibility commitments.

The successful implementation of a minerals policy requires civil servants tasked with overseeing the process to receive proper training and support so that they have the necessary skills and capacity to perform their duties. Mtegha (2005) contended that the proper implementation of a minerals policy is largely dependent on the skills and effectiveness of the minerals sector administrators whose job it is to manage the process, which includes continuously monitoring how well the sector's objectives are being met at a national level.

According to Fernandes (2014: 43), the success of a minerals policy is dependent on the development of a clear and realistic implementation strategy that is in line with the country's industrialisation objectives. These objectives, in turn, should consider the country's unique comparative advantages (including resources endowment) and its priorities in terms of socio-economic upliftment and environmental preservation. Jourdan (2014: 4), in turn, urged countries to take advantage of high mineral prices (where these are prevalent) as this will help them to deliver on their economic growth and development commitments even in the face of finite minerals endowments.

A comprehensive minerals policy needs to be translated into a workable legislative framework to address national challenges. Mtegha et al. (2006) stated that the policy implementation process relies on policy instruments, such as mineral laws, subsidiary legislation and other structures, and appropriate skills and capacity to ensure that such policy instruments are understood and adhered to. Sabatier and Mazmanian (1980) explained that implementation generally relates to the carrying out of a basic policy decision via a statute. They went on to say that "ideally, that decision identifies the problem(s) to be addressed, stipulates the objective(s) to be pursued, and in a variety of ways, 'structures' the implementation process" (Sabatier and Mazmanian, 1980: 540).

Tiess (2010) suggested that the implementation of any policy requires a strategic rollout plan with a sound legal foundation. In many cases, too, there is a need for the implementation process to involve the formulation of specific regulations that allow societal objectives to be pursued and realised.

2.3 Overview of the Minerals Policy of Namibia

The Namibian government adopted a Minerals Policy for the country in 2003. The rationale for this move was to further develop Namibia's minerals sector, not only by inducing more sustainable mining practices in an increasingly free market environment but also to create a more conducive environment for both foreign and local investors. This would make a positive contribution to the country's socio-economic development (Ministry of Mines and Energy, 2003).

The Policy takes cognisance of the need to protect the environment, as is stipulated in the Namibian Constitution article 95(l). The Constitution states that the government is committed to ensuring Namibia's well-being by introducing policies designed to protect the country's ecosystems and biological diversity, while also using the country's natural resources in a responsible and sustainable manner for the benefit of all Namibians, both now and in the future. The government also undertakes to strongly resist attempts by any entities to dump or recycle foreign nuclear or toxic waste within the borders of Namibia (Republic of Namibia, 1990: 38). The responsible development of the mining industry is clearly a central concern of Namibia's Minerals Policy (Mtegha, 2014).

Namibia's Minerals Policy has the following vision: "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 the socio-economic development of the country. It also seeks to further attract investment and enable the private sector to take the lead in exploration, mining, mineral beneficiation and marketing" (Ministry of Mines and Energy, 2003: 5).

The Minerals Policy's mission, in turn, is: "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" (Ministry of Mines and Energy, 2003: 5).

The written policy in Namibia's case was adopted after the mining legislation — Minerals (Prospecting and Mining) Act No. 33 of 1992 — was enacted. It is understood that prior to Namibia's independence there was no specific minerals policy or any other policy relating to minerals, except the Mines, Works and Minerals Ordinance 20 of 1968. The Mines, Works and Minerals Ordinance is a statute largely concerned with safe mineral exploitation. If there had been a policy relating to the minerals sector prior to independence, its provisions could have been incorporated into the current mining legislation, i.e. the Minerals Act No. 33 of 1992.

With the Act having preceded the Minerals Policy by several years, it is evident that the various policy instruments linked to the Minerals Policy have not been incorporated into the current regulatory framework for the minerals sector, which is shaped by the Act. Inevitably, given the lack of alignment between the Act and the Minerals Policy, there is little incentive for the Minerals Policy to be implemented since a policy needs an appropriate legal and regulatory framework to be enforceable. For instance, there is no satisfactory means of enforcing beneficiation, with the result that private companies are still selling raw materials to foreign markets — with little regard for the environmental and broader societal consequences of such actions. Clearly, the various statutory instruments do not support the dictates of the Minerals Policy. This implies that the intended benefits of the Minerals Policy are not being felt by society as a whole.

2.3.1 The objectives and underlying themes of Namibia's Minerals Policy

The overarching objective of Namibia's Minerals Policy is that the minerals sector should make a sustainable contribution to the socio-economic development of Namibia. It comprises the following 12 sub-objectives (Ministry of Mines and Energy, 2003: 9):

1. "*Promote and stimulate investment* in exploration and mining so as to discover new ore deposits that will lead to the development of new mines and also to maintain the existing ones";
2. "*Promote a conducive environment* for the minerals sector that encourages and facilitates the active participation of all stakeholders";
3. "*Promote and encourage local participation* in exploration and mining";
4. "*Promote and encourage maximum local beneficiation* of mineral products to ensure that as many of the economic benefits as possible are retained in Namibia for the benefit of all its citizens";
5. "*Regularise and improve artisanal and small-scale mining* so that it becomes part of the formal mining sector";
6. "*Promote research and development* for improving technology in exploration, mining and mineral processing operations";

7. "*Ensure the establishment of appropriate educational and training facilities* for human resources development to meet the manpower requirements of the minerals industry";
8. "*Promote and facilitate marketing arrangements* to increase the economic benefits of the sector";
9. "*Ensure the adherence of the principle of socio-economic upliftment through* appropriate measures";
10. "*Ensure compliance with national environmental policy and other relevant policies* to develop a sustainable mining industry";
11. "*Review on a regular basis the legal, economic, social and political aspects of the Minerals Policy*, to ensure that it remains internationally competitive, that it adequately addresses the mining industry's volatility and that it serves the common good of Namibians"; and
12. "*Ensure mining operations are conducted* with regard to the safety and health of all concerned".

Namibia's Minerals Policy incorporates eight key themes, as shown in Table 2.1.

Table 2.1 Namibia's Minerals Policy themes

Theme	**Focus area/s**
The Mining Industry	This deals with "the promotion and growth of three mining sectors, namely marine mining, ASM (artisanal and small-scale mining), and medium- to large-scale mining".
Value Addition	This deals with "the further processing of minerals products".
Marketing and Investment Promotion	This deals with "attracting investment capital".
Mining Industry and the Environment	This deals with "the protection of the environment and minimising the impact of mining on the environment".
Human Resources	This deals with "the human resource requirements of

	the industry and related social issues".
Research, Development and Technology	This deals with "the human resource requirements of the industry and related social issues".
Governance	This deals with "the management of the mining sector".
Regional Integration	This deals with "engagement with SADC".

Source: Ministry of Mines and Energy (2003)

According to Mtegha (2014: 112), Namibia's Minerals Policy strongly advocates the importance of creating an environment that is attractive to private investors. However, he emphasised that Namibian citizens should be the main beneficiaries of the more diversified and technologically enhanced minerals sector, while active steps should also be taken to minimise the harmful effects of mining development and expansion on the environment.

The objectives and themes of Namibia's Minerals Policy are well aligned with the assertions made by Mtegha and several other authors in the literature and also strongly reflect Namibia's developmental priorities. However, given Namibia's current economic development and fiscal challenges and generally low skills levels, and the limited trade that takes place at the regional level, the various provisions in the Minerals Policy are highly ambitious. They also do not suggest any proposed attainment dates which, in the absence of an implementation plan and identified responsible parties, leave them aspirational at best.

2.3.2 Namibia's mining industry: implications for the Minerals Policy

General trends

The mining industry forms the core of the economy of Namibia. In 2014, mining contributed on average 13% to GDP, a slight increase from 12.6% in 2013. It is predicted that mining's contribution to GDP will increase to 17% by 2017/2018 (Chamber of Mines, 2015). The mining industry is also the leading contributor to the income of central government. The rights to Namibia's mineral resources are

vested in the State and are subject to the regulations provided for under the Minerals (Prospecting and Mining) Act No. 33 of 1992.

Although there has been a clear escalation in the mining industry's contribution to Namibia's GDP, data from the World Bank (2015) indicated that economic growth has not generated the jobs needed to overcome the inequitable distribution of income and assets in the country. Minerals — and predominantly diamonds — dominate the country's merchandise exports. This lack of diversity constrains the country's economic potential and has adverse spill-over effects.

The government of Namibia has expressed the view that the private sector is best placed to further exploit the country's mineral wealth. However, on 8 July 2008, the government registered Epangelo Mining Company as a State entity that would get involved in exploration and mining. The company's objective is "to ensure participation in the mineral resources development, mining, beneficiation and creation of mining-related employment opportunities for Namibians" (Epangelo Mining, 2015). This move runs contrary to the popular belief that the government should be promoting private sector investment in the interests of achieving competitive exploration and mining, while also aiding the process with the creation of an effective competition policy and a sound regulatory framework (Ministry of Mines and Energy, 2003).

The mining industry has seen some massive investments in recent years, helped by a favourable regulatory framework that governs the industry (Chamber of Mines, 2016). It has been widely reported that Namibia's favourable regulatory framework has entrenched the country's status as an attractive destination for investment in the mining sector, which is a leading factor in the Namibian mining industry's highly competitive position vis-à-vis other developing countries. However, some words of caution are necessary at this stage. Namibia's regulatory framework has largely been geared towards raw material extraction and not beneficiation (see 'Value addition' below). The Minerals Policy strongly advocates beneficiation in the minerals sector as it would lead to more inclusive socio-economic development. In addition, the Chamber of Mines has said that a

couple of policy developments that occurred towards the end of 2015 are negatively impacting investor sentiment towards Namibia's mining industry (Chamber of Mines, 2016). These developments are:

- The introduction of the **New Equitable Economic Empowerment Framework (NEEEF) policy** — The Namibian government approved the New Equitable Economic Empowerment Framework (NEEEF) policy in November 2015, and a process of turning it into law is currently underway. Broadly, the policy aims to recalibrate the economic power base in the country by requiring that at least 25% of all existing and new businesses must be owned by previously disadvantaged Namibians, while at least 50% of board and management positions must similarly be filled by previously disadvantaged Namibians. In a further provision, an additional 0.5% of gross wages paid by companies must be channelled towards skills training and human resources development (over and above the existing mandatory national training levy of 1% of payroll costs).

  The NEEEF policy has become controversial because, among other things, it creates uncertainty which is very off-putting to foreign investors. Namibia has faced serious budget deficits for some time and, given its huge developmental and job creation challenges, it desperately needs foreign investment. Clearly, the way in which the NEEEF is operationalised will be a leading factor in how Namibia's economic future plays out.

- The announcement of a **new marine phosphate mining project** — The Namibian government declared a moratorium on marine phosphate mining on 17 September 2013 but this was lifted after about 18 months. In a recent announcement by the Namibian Ministry of Environment and Tourism (MET), the world's first sea bed phosphate mining project will shortly commence as part of a joint venture between an Omani mining company and a local Namibian concern. Although the project (the location of which is approximately 120 km into the Atlantic Ocean, off the coast of Walvis Bay) has been approved on the basis that due consideration has been given to the

environmental impact, fishing and environmental groups (and their investment arms) have reacted with alarm saying that it poses a threat to the country's fishing industry and would upset an already delicate marine ecosystem.

Value addition

Many of the minerals mined in Namibia are exported in raw and semi-processed form (Ministry of Mines and Energy, 2003), as well as in the intermediate phase of refinement as concentrates or oxides (Namibia Training Authority, 2014). This shows that the raw materials being mined in Namibia are not yet undergoing sufficient transformation (through beneficiation and processing) as to become value-added, final mineral products — as envisaged in the Minerals Policy objectives.

Beneficiation can bring many benefits to a country, including contributing to its development agenda and thereby improving the quality of life of its citizens using available local resources. Mineral beneficiation, in particular, has the potential to expand the national economic footprint and boost State revenue (Ministry of Mines and Energy, 2003). In fact, the adding of value to mineral products is critical if forward and backward linkages with other sectors of the economy are to be realised. It is a worrying reality that minerals are a finite resource, and so it is important that mineral value addition is realised while the resources are still in existence (Jourdan, 2014).

Despite the potential of mineral resources to deliver stronger economic performance, a disappointing trend in most mineral-rich Sub-Saharan African countries is that economic growth and living standards remain stubbornly below par (Mtegha, 2011). This suggests a combination of factors: from mediocre prices for commodities in international markets and the lack of wherewithal to generate more value from mineral deposits, to insufficient integration at the regional level and an inability to tap into potential value chain opportunities. Infrastructural weaknesses, which impede trade, and generally poor governance often exacerbate the problem.

Namibia's Minerals Policy recognises that value addition has the potential to create a more diversified minerals export sector and reduce the need for imports, stimulate new learning opportunities in the minerals sector and widen the employment base. The processing of minerals would fundamentally transform the mining industry from one that is largely resource based to one that is heavily knowledge based (Department of Mineral Resources, 2011). Thus, the need to explore the opportunities and benefits associated with mineral beneficiation is becoming increasingly urgent.

There are four stages of mineral beneficiation, which are as follows (Leeuw, 2012, cited in Fernandes, 2014: 48):

- "The primary stage involves the actual mining, recovery, reduction and smelting processes, characterised by the conversion of mineral ore to mineral concentrates";
- "The secondary stage is a transitional stage between the mining process and the industrial (manufacturing) process, characterised by the conversion of mineral concentrates into intermediate products";
- "The tertiary stage involves the refinement of intermediate products into high-value intermediate products"; and
- "The final stage involves the manufacturing of final products".

Namibia's Minerals Policy stipulates that the production of final consumer goods is generally regarded as being part of manufacturing and not part of mining. Thus, the Ministry of Trade and Industry (MTI) is responsible for regulating mineral beneficiation and processing. The MTI's promotion of development in the resources arena falls under the Export Processing Zones Act No. 9 of 1995, which offers various incentives to boost manufacturing activities in Namibia's minerals sector.

Export Processing Zones (EPZs) play an important role in Namibia's industrialisation and export development drive. EPZs have the following objectives (Export Processing Zones Act 9 of 1995):

"(a) To attract, promote or increase the manufacture of export goods;

(b) To create or increase industrial employment;

(c) To create or expand export earnings;

(d) To create or expand industrial investment, including foreign investment; and

(e) To encourage technology transfer and the development of management and labour skills."

Although the Export Processing Zones Act No. 9 of 1995 aims to attract investment for and promote or increase the manufacturing of export goods, the Act does not address how mineral beneficiation and processing should be achieved in Namibia. This stands in contrast to South Africa's Mineral and Petroleum Resources Development Act No. 28 of 2002, which (in Section 26) articulates the role of mineral beneficiation in that country and how it is achieved.

To encourage much higher levels of value addition and/or beneficiation in Namibia, the optimal strategy would be to provide targeted incentives and, furthermore, to induce lower costs for running business (notably manufacturing) concerns in the country. This is largely the domain of government, e.g. ensuring sound and stable infrastructure, introducing coherent policies, being efficient in the delivery of public services, reducing regulatory red tape, and so on. Businesses face innumerable challenges — from high water and electricity costs, and difficult regulatory compliance issues, to high technical skills requirements and a limited local market. Namibian producers, assuming the right conditions are in place, therefore need to engage more actively with regional and global value chains, which favour specialisation and are therefore not necessarily out of the reach of smaller business entities.

According to the Ministry of Mines and Energy (2003), various trade restrictions are proving to be an obstacle to value-adding activities in Namibia. For example, while antimonial lead used in storage batteries and zinc-based fireproofing chemicals can be produced from minerals available in Namibia, the prevalence of

tariff and non-tariff barriers has resulted in Namibia failing to make meaningful inroads into industrialised markets with its processed minerals — particularly assemblies and sub-assemblies (Ministry of Mines and Energy, 2003).

As mentioned earlier, Namibia's Minerals Policy warns that the country's mineral resources are finite and their contribution to the economy will at some stage decline once the known deposits are exhausted. This calls for the deepening of the minerals sector through downstream linkages. Of course, the various challenges standing in the way of Namibia's beneficiation goals are not unique to the country; other mineral-producing countries (notably in Africa) experience them to varying degrees.

In 2009, the African Union (AU) heads of state adopted the 'Africa Mining Vision' (AMV), which contains important strategies for maximising the impact of mineral resources on countries' growth and development. This Vision (African Union, 2009; African Union, 2011) aims to achieve a "knowledge-driven African mining sector that catalyses and contributes to the broad-based growth and development of, and is fully integrated into, a single African market". It will realise this through the forging of the following linkages:

- "Downstream linkages to mineral beneficiation and manufacturing processes";
- "Upstream linkages to capital goods, consumables and relevant services";
- "Side-stream linkages to infrastructure development (including power, water, logistics and communications), human resources development and R&D";
- "Mutually rewarding partnerships between the state, the private sector, civil society, local communities and other stakeholders".

An in-depth knowledge of the country's mineral endowment is also one of the cornerstones of the above process.

Clearly, the African Union (2011) strongly advocated the development of economic linkages in the African minerals sector, adding that member States need to have the right policies, strategies and practical measures in place to capitalise on those minerals that contribute significantly to national and/or regional

integration and industrial development. To this end, the Africa Mining Vision (AMV) emphasised the importance of increased local beneficiation and value addition as a way of creating opportunities for more inclusive participation in the Namibian economy, particularly in the provision of manufactured goods as well as services (African Union, 2009).

Also in a regional context, the Industrial Development Policy Framework of SADC (of which Namibia is a member) focuses on promoting industrial linkages as well as the leveraging of regional resources through greater value addition (SADC, 2014). The Framework points out that a critical skills shortage is a major impediment to manufacturing in the SADC region. In fact, skills and capacity challenges are named as significant stumbling blocks to economic development as a whole throughout SADC.

For Namibia to overcome this challenge, specific skills deficiencies need to be identified and then seriously addressed. While skills shortcomings in private sector (mining companies) can often be very significant, the government's policymaking and policy implementation capabilities (including skills in negotiating beneficial trade preferences with regional and global partners) effectively 'sets the scene' for the success — or otherwise — of Namibia's efforts to exploit its mineral resources in a responsible and sustainable manner.

Marketing and investment promotion

To give the economy greater momentum, Namibia needs to attract more foreign and local investors to the minerals sector, focusing specifically on exploration projects for new deposits and on mine development (Ministry of Mines and Energy, 2003). Namibia's Minerals Policy notes that to attract foreign investment, the country needs: to provide various incentives; to improve environmental, health and safety practices; to enact new mining legislation; and to institute investor-friendly regimes. Moreover, before investing, mining companies want to evaluate all factors influencing the economics of mining and subsequent processing.

Issues such as "political stability, the local investment climate, the royalty and tax regime, local mining and labour laws, the quality of labour and the availability of good infrastructure" play a major role in investment promotion (Ministry of Mines and Energy, 2003:24). In this regard, the government "commits to promote and encourage investment in the minerals sector through effective global marketing of this sector" (Ministry of Mines and Energy, 2003: 28). Namibia's Constitution and the Minerals (Prospecting and Mining) Act No. 33 of 1992 are regarded as providing an important legal foundation for securing investment in the sector.

According to the Behre Dolbear (2015) report, 'Where to invest in mining', Namibia was ranked as the most attractive destination in Africa for investment in mining, and seventh out of 25 countries surveyed globally. The 2014 Fraser Institute survey of mining companies revealed that Namibia was the most attractive destination for mining and exploration in Africa, and was ranked 25th out of 122 jurisdictions surveyed globally (Chamber of Mines, 2015). Such high rankings were possible because of (as stated earlier) positive perceptions among investors about the regulatory framework governing the Namibian mining sector (Chamber of Mines, 2016).

However, the 2015 Fraser Institute survey of mining companies showed that Namibia had dropped from its number one ranking in 2014 to fourth place in 2015. This was largely attributed to a number of policy proposals made by the government towards the end of 2015, including the NEEEF. The 2015 ranking (which also reflects the country's level of stability and how it is dealing with corruption and social issues) has had a somewhat negative impact on investor sentiment towards Namibia's minerals sector (Chamber of Mines, 2016).

The mining industry and the environment

The Minerals Policy recognises that mining activities play a very important role in the Namibian economy but at the same time, they contribute to environmental degradation (Ministry of Mines and Energy, 2003). The Policy indicates that countries in the surrounding region, which are all members of SADC, have started

to pay attention to environmental concerns relating to mining. Developed economies have put in place strong environmental policies and regulations for their mining sectors (Ministry of Mines and Energy, 2003). However, the literature has shown that countries with poor environmental practices (largely in the developing country category) receive comparatively little investment. This reinforces the importance of upholding acceptable environmental standards.

Work by Fernandes (2014) indicated that Namibia's Minerals Policy recognises the existence of the country's 'Protected Areas', including national parks and game reserves, as well as other relevant legislation such as the Minerals (Prospecting and Mining) Act, which together "aim to regulate and protect the environment against degradation caused as a result of prospecting and mining activities". The tourism sector is a major contributor to the country's GDP and for this reason the government is paying closer attention to protecting those environmental assets that, if compromised, could deter visitors.

There are in excess of 240 abandoned mines in Namibia that have not been rehabilitated (Ministry of Mines and Energy, 2003; Chiomba, 2015). Several authors have recommended that these mines be rehabilitated to restore the ecosystem and reverse the disruptive effects on the natural habitats of several animals and plants. Fernandes (2014) cited the country's Vision 2030 policy framework, which states that of the abandoned and un-rehabilitated mines in the country, 40% are in natural reserves. These not only have a potentially harmful effect on the tourism sector but pose health risks to the surrounding communities.

The Minerals Policy acknowledges the impact of mining on the environment and the need for regulation of mining activities through appropriate legislation (Fernandes, 2014). The Ministry of Environment and Tourism passed the Environmental Management Act No. 7 of 2007, and introduced the relevant regulatory framework, to address this concern. The legislation aims "to protect fragile ecosystems, manage mining operations and ensure that all commercial development projects eliminate or, at the very least, mitigate adverse impacts on the environment, people and wildlife" (Odendaal, 2012:31). It is understood that

the Ministry of Environment and Tourism is busy with the draft amendment of the Environmental Management Act and Regulations, which will in due course be made available to stakeholders.

The Minerals Policy indicates that environmental preservation remains a challenge because of a lack of public awareness, capacity weaknesses in government and insufficient education programmes (Ministry of Mines and Energy, 2003). Odendaal (2012:32) was of the opinion that "Namibia has reasonably good environmental legislation but the existing framework does not adequately protect the environment from abuse by some mining companies". Mining activities are often viewed in a negative light because of the general perception that they inflict harm on the environment.

The Minerals Policy calls for "clear funding mechanisms for environmental rehabilitation, management and control" (Ministry of Mines and Energy, 2003:27). However, at present, the government lacks a specific environmental budget. Funding mechanisms could be effective developmental tools if they were entrenched in environmental legislation. The establishment of environmental trust funds is also a possibility (Ministry of Mines and Energy, 2003). The flow of funds could be enhanced by increasing public awareness of environmental concerns and by introducing more educational opportunities in the areas of environmental care and management. The 'polluter pays' principle should also be enforced to deter companies from inflicting harm on the environment during and/or after mining operations (Ministry of Mines and Energy, 2003).

Lupalezwi (2014) suggested that when investors enter into agreements with the government, such agreements should always include an environmental clause that obligates investors to compensate the government of Namibia should the provisions of the environmental clause not be adhered to and should the mining operations in question cause extensive damage to the environment. It is essential that all investors implement environmental management plans and corporate responsibility programmes to ensure both a high degree of environmental awareness and consistent best practice.

Chiomba (2015) found that Namibia's Minerals Policy does not address Social Impact Assessment (SIA) issues and recommended that Namibia consider adding this element to the Policy. Currently, when mineral reserves are exhausted in a particular location, a mining company simply shuts down its operations. This could have a very detrimental effect on surrounding communities whose livelihoods have been tied to the mine's operation. This is something that the government cannot ignore.

However, undertaking an Environmental Impact Assessment (EIA) is an essential condition for securing a licence under the work programme that must be submitted to the Ministry of Mines and Energy (Minerals Act (Prospecting and Mining) 1992, cited in Bennett and Rogers, 1999; Environmental Management Act No. 7 of 2007). This initiative is designed to ensure that the environmental impact management system specifies that the land be returned to its original or some other predetermined state, or that it is put to some other use in keeping with accepted precepts of sustainable development.

Human resources development

The Minerals Policy acknowledges the prevalence of a skills shortage in the minerals sector. This was evident as early as 1996 in the results of a survey conducted confirming a critical skills shortage in both the public and the private sectors (UNECA, 1996, cited in Ministry of Mines and Energy, 2003). Skills shortages and mismatches between the supply of and demand for skilled workers have over the years been key factors hindering economic and employment growth in the country (National Planning Commission, 2012b).

The Namibia Training Authority (NTA) compiled the Sector Skills Plan (SSP) for the mining and quarrying industry in 2014 with a view to guiding and informing skills development initiatives in the minerals sector. The SSP states that "there is consensus that skills shortages in the designated industries in Namibia abound; the disparity between skills imparted by education institutions and skills demanded by industry leads to skills mismatches; and these industries can only meet their full potential if they have a skilled workforce with a high level of productivity"

(Namibia Training Authority, 2014: 10). An ongoing challenge in many societies is ensuring that different industry sectors effectively communicate their expectations regarding needed skills to learning institutions tasked with preparing candidates for the workplace.

The Minerals Policy states that skills shortages in Namibia's mining sector are most evident among professionals and technical personnel across the sector. Fernandes (2014) maintained that capacity building and skills development are the key developmental priorities for the country. He does, though, acknowledge the efforts of many mining companies, which continuously invest in the education and training of students as a way of developing, attracting and retaining skills in the mining industry.

In comparison with certain other countries in the SADC region, such as Zimbabwe and Zambia, which have a long history of mining and an experienced talent pool built up over many years, Namibia has a comparatively young and still-evolving mining industry. Thus, most personnel brought in to fill specialised positions have been expatriates from other SADC countries.

Fernandes (2014) attributed the slowness in addressing much-needed human resources development to a generally weak education system and the lack of capacity at the country's training institutions. Skills shortages do not only impact productivity in the mining sector; they produce ripple effects throughout the economy and suppress Namibia's global competitiveness. Competitiveness is vital as it boosts productivity and makes sustainable development an attainable goal (National Planning Commission, 2015). For example, a country that is competitive attracts investors that come with new knowledge and technology, which are among the keys to greater productivity. Competitiveness is also an important determinant of how well a country will fare in an international trade context.

Several initiatives have been considered by the government to address the skills deficit in the country in general and in the mining sector in particular (Ministry of Mines and Energy, 2003). One of these initiatives involved the passing of the

Vocational Education and Training Act (Act 1 of 2008) to activate a levy of 1.5% of payroll costs on all employers with an annual payroll of N$ 350 000 or more. The Namibia Training Authority (NTA) oversees the management and implementation of the Vocational Education and Training Act (VET), with employers and related stakeholders acting as agents to raise the levy (National Planning Commission, 2012b).

According to the Vocational Education and Training Act (Republic of Namibia, 2008: 2), the purpose of the levy is to:

(1) "Provide financial and technical assistance to employers, vocational education and training providers, employees, learners and other persons or bodies to promote vocational education and training;
(2) Fund vocational education, training programmes and projects;
(3) Facilitate and encourage vocational education and training to address skills shortages."

Overall, a system of VET has been introduced to address skills shortages in the country, particularly technical skills at the artisanal level. The Sector Skills Plan (SSP) for the mining and quarrying industry says that more effort needs to go into explaining the role of the training levy and the advantage to employers of developing their employees' skills. The SSP further suggests bringing world-class expertise to Namibia to address the endemic skills shortages. Acknowledging that Namibia is not producing enough young people with relevant skills, the SSP called for universities of good standing to ensure that the skills they impart to their students are aligned to industry needs (Namibia Training Authority, 2014).

According to the Global Competitiveness Report 2014-2015 (cited in National Planning Commission, 2015: 15), "the quality of mathematics and science education, management of schools, secondary and tertiary education enrolment, and internet access in schools should be given high priority". Particular interventions could be to investigate how education-focused investment is allocated in practice and to identify cost-effective ways of steering a proportion of the revenue generated by the mining industry directly towards skills development.

Some initiatives that have been taken by the government to enhance the skills base in the minerals sector include the setting up of a Geology Department at the University of Namibia (UNAM), the establishment of the Engineering School, which offers mining-related courses at the UNAM northern Ongwediva campus, the establishment of the Namibian Institute of Mining and Technology with satellite operations around the country, and the establishment of the Engineering Department at the Namibia University of Science and Technology (NUST). The Namibian government has also sent students to universities in other SADC countries (with South Africa being a popular destination) to acquire relevant skills, especially in the field of mining and related disciplines.

In terms of public sector skills development, the government established the Namibian Institute for Public Administration and Management (NIPAM) to address the need for enhanced knowledge and efficiency among civil servants, which can potentially improve the quality of public service provision.

It is therefore acknowledged that the Namibian government has put in quite a lot of effort to address the skills shortage in the country.

Although the Namibian government has launched several initiatives to tackle the national skills shortage, Fernandes (2014) suggested that the government should make it mandatory for mining companies to contribute to skills development and capacity building. In this regard, private companies in Namibia are already contributing to skills development through the Vocational Education and Training (VET) levy, which is compulsory. The onus also rests with the Namibia Training Authority (NTA) to carry out its mandate and allocate funding in critical areas that need it the most, so that the country develops a more capable human resources base (both in the private and public sectors).

However, if the skills shortage is not tackled more aggressively in Namibia, the situation will continue to hamper growth and development. At a government level, insufficient skills and capacity negatively impact policy implementation, such as Namibia's Minerals Policy, and delay the realisation of Namibia's Vision 2030, which sees the country becoming a prosperous and industrialised nation.

For this reason, the African Union (2011) has recommended that legislative measures to empower citizens be introduced and that more investment needs to go into building knowledge and human capital, particularly in the area of technical skills, which are so urgently required by the mining industry.

An important initiative of the Namibian government designed to address human resources and skills development needs in the country was the formulation of the National Human Resources Plan (NHRP) 2010–2025, which sets out to tackle the structural mismatch between skills and available jobs in Namibia (National Planning Commission, 2012b). It is based on Namibia's Occupational Demand and Supply Outlook Model (NODSOM), which "provides information for employers, employees, employment agencies and policymakers, thus facilitating a labour market balance while reducing adjustment costs and enhancing capacity for productivity and competitiveness" (National Planning Commission, 2012b: 32).

How effective the NHRP will be will largely depend on its implementation strategy, monitoring mechanisms and milestones, and evaluation strategies.

Research, development and technology

For societies to become sustainable, scientific knowledge needs to be regularly tapped. Knowing about resources and being able to find and utilise them constitute the basis of a good standard of living for all (Ministry of Mines and Energy, 2003). A competitive mining industry, for example, depends on technical capacity to be able to use new and more efficient technologies.

It is against this background that the Minerals Policy recommends a co-operative partnership between the Ministries of Mines and Energy and Higher Education, on the one hand, and the mining industry, on the other, to explore and throw their collective weight behind support programmes that will fast-track initiatives in research and development, exploration, value addition and skills training.

Governance

The minerals sector is governed by several ministries and agencies. Overall, the Ministry of Mines and Energy is responsible for coordinating the governance of the sector (Ministry of Mines and Energy, 2003).

Namibia's minerals sector is regulated by the Minerals (Prospecting and Mining) Act, 1992; the Diamond Act, 1999; and the Minerals Development Fund of Namibia Act, 1996. The petroleum sector, in turn, 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; and the Petroleum Products and Energy Amendment Act, 2000.

The Minerals Policy emphasises the need for the government to introduce laws that stamp out corruption among government officials entrusted with the interpretation and legislative components of the Minerals Act. Compared with other African countries, corruption in Namibia's minerals sector is manageable. Political stability is considered to be an important anchor for investment flows into the mining sector. This has prompted the government to "continuously strive to maintain a stable political environment through a democratic system" (Ministry of Mines and Energy, 2003: 37).

Regional integration

The Southern African Development Community (SADC) came into being with the signing of a treaty in Windhoek in 1992. Namibia is one of the member States (Ministry of Mines and Energy, 2003). Among the professed benefits of SADC membership are: the opportunity to develop economic ties with more developed countries in the region; the potential to exchange information, skills and technology; being part of a united grouping with a single voice; and having access to regional finance facilities for development projects. Adopting a coordinated SADC approach also clears the way for the utilisation of joint infrastructure,

which benefits regional mining activities (Ministry of Mines and Energy, 2003: 39).

The SADC member states have agreed, among other things, to adopt common approaches to formulating and executing policies, strategies and programmes through close co-operation and integration. Among the major SADC-wide strategies that are being developed are those relating to harmonisation, skills training and development, the utilisation of existing institutions, small-scale mining, regional funding initiatives, strategies and programmes to encourage value addition, a regional information drive to promote investment, and the rationalisation of R&D facilities (Ministry of Mines and Energy, 2003).

Work done by Jourdan (2014) indicated that SADC has a combined GDP of over US$1 trillion, which represents a substantial regional market for beneficiated products (forward linkages), mining and mineral processing inputs (backward linkages), and minerals sector skills and skills formation (knowledge linkages). Given the competitive nature of manufactured goods globally and the world market, Jourdan (2014) believed that regional economic integration is probably the only viable means of breaking free of the present vertical integration arrangement with the developed world. However, regional economic integration has proved to be challenging. Relatively low levels of intra-regional trade (due to, for example, infrastructural bottlenecks and a lack of harmonisation in trade rules and procedures) and institutional weaknesses (including corruption) among the different authorities in the majority of SADC countries have put a damper on integration efforts. As a result, mineral producers remain heavily reliant on more developed markets much further afield, which makes cost containment difficult.

Table 2.2 offers a synthesis of the various issues covered in section 2.3.2 by listing the Minerals Policy themes with corresponding actions that need to be taken by government and/or other stakeholders.

Table 2.2 Namibia's Minerals Policy themes and corresponding actions

Themes	Actions required by government and/or other stakeholders
The Mining Industry	• Promote and facilitate investment in existing mining activities as well as new mine exploration; • Provide incentives to stimulate exploration and active mining in remote areas; • Ensure the competitiveness of the mining industry so that all Namibians can derive economic and social benefits, e.g. from higher mining revenues to stronger economic and export growth; • Provide the necessary infrastructure to support socio-economic development in the country, and look at ways to improve and extend the capacity of mining-related infrastructure; • Provide security of tenure in mining investments through efficient legislation; • Formulate efficient and cost-effective legislation for small-scale mining companies; • Provide loans to viable small-scale mining projects through existing and proposed new financial structures; • Provide technological information and technical assistance to small-scale mining companies, and support the establishment of cooperatives to help these mining companies to take their output to market; • Build people's skills and capacity to enhance the output and sustainability of the mining industry.
Value Addition	• Encourage and facilitate local manufacturing using the concept of 'mined and manufactured in Namibia'; • Investigate and address the mining industry's reported constraints to value addition;

	• Identify skills deficiencies — in both industry and government — that hinder the value addition process, and take remedial action; • Provide incentives to encourage higher levels of value addition (e.g. beneficiation) and lower operational costs to realise greater competitiveness; • Engage with the regional and/or global value chain phenomenon through the production and promotion of value-added goods as well as services; • Use relevant regional forums to promote stronger industrial linkages; • Leverage regional alliances and agreements (e.g. AU and SADC) to advance a more integrated and knowledge-driven African minerals sector.
Marketing and Investment Promotion	• Continuously look for opportunities to promote the expansion of existing mining activities and new mine exploration, with a particular emphasis on value addition (e.g. beneficiation); • Communicate the existence of incentives, investment protection measures, financial assistance (for small-scale mining companies) and other inducements when promoting inward investment in the minerals sector.
The Mining Industry and the Environment	• Create an investment climate that is attractive to (particularly foreign) investors, while also taking into account socio-economic imperatives (e.g. job creation and inclusive growth) and environmental considerations (e.g. the careful treatment of the country's renewable and non-renewable resources); • Implement effective systems in compliance with environmental management programmes (EMPs) which encourage value addition in line with international best practice;

	• Ensure, through regular monitoring, that mining companies adhere to environmental, health (including waste management) and safety standards — particularly in protected areas that have strong tourism potential; • Rehabilitate abandoned mines in the interests of restoring the ecosystem and returning the natural habitat to affected animals and plants; • Develop a Social Impact Assessment (SIA) system for Namibia's mining projects, and take remedial action where required; • Conduct public awareness programmes on the value of mining to the Namibian economy but also the need to preserve the integrity of the environment, which should in turn open up opportunities for funding of environmental protection and/or rehabilitation/aftercare, training and capacity building; • Ensure that industry players implement environmental management plans and corporate responsibility programmes aimed at minimising damage to the country's natural assets, while also involving communities in environmental protection and sustainability projects.
Human Resources Development	• Identify the critical skills needed for the minerals sector (both private and public sector employees) and where and why there are knowledge, skills and capacity gaps; • Fill critical vacancies with skilled personnel (from local or regional talent pools) in the short term, while embarking on more long-term human resources development planning; • Reform the education and skills development policy landscape and reassess the roles of various state education and training authorities with a view to creating more (and more lasting) job opportunities for the people of Namibia

	— in professional, technical and public administration fields; • Use the mandatory national training levy to prioritise and widely promote vocational training in critical areas, such as maths, science and (Internet-driven) technologies; • Capacitate institutes of learning (e.g. universities and institutes of technology) to deliver courses that are well-aligned to the needs of the mining industry, including management and strategic planning; • Encourage the minerals sector to promote and support careers in mining, environmental science and management, supply chain management, etc. through bursaries, apprenticeships and in-house training schemes.
Research, Development and Technology	• Promote a culture of innovation in Namibia, underpinned by focused research and development activities, and access to the latest technologies via foreign investors, affordable Internet links, etc.; • Use R&D and technology to improve productivity in mining operations, thereby creating a springboard for mining companies to participate in regional and global value chains; • Promote collaboration between public and private sector bodies and stakeholders with a view to arriving at a common agenda for developing the minerals sector as a source of knowledge, expertise, employment and export potential; • Promote the idea that the ongoing development of knowledge, expertise, and realistic strategies and action plans is one of the cornerstones of Namibia's social and economic well-being.
Governance	• Communicate a zero-tolerance attitude towards corruption in all its forms in relevant government policies,

	legislation, sector regulations and public pronouncements; • Cooperate with Namibia's law-enforcement agencies and judiciary in uncovering and rooting out corrupt practices in private and public sector entities; • Strive to maintain a climate of political stability in the country in a bid to entice and retain investors in mining operations; • Update the sector's legislative framework at intervals to ensure relevance and alignment with global best practice; • Ensure that the various ministries overseeing the country's minerals and related sectors exercise strong oversight and display unwavering accountability.
Regional Integration	• Actively promote the benefits of stronger integration in the SADC region — from expanded market opportunities for mining exports and access to regional expertise, to being part of a 'collective' with a harmonised regional identity and political voice, and compatible rules and regulations; • Leverage traditional and more recent agreements (SADC Trade Protocol, SADC Mining Protocol, SADC-EU EPA (Economic Partnership Agreement)) to acquire a larger regional footprint and take advantage of actual or latent regional value chain opportunities; • Commit to implementing the provisions of the regional agreements/protocols to which Namibia is a signatory in the interests of a stronger regional brand/identity, higher volumes of incoming FDI and stronger trade flows.

Source: Adapted from Ministry of Mines and Energy (2003)

2.4 Summary Of Chapter

Mining is widely regarded as the backbone of the Namibian economy, with the country's export revenues being heavily dependent on the extraction and processing of minerals. In recognition of this, the Namibian government adopted a Minerals Policy in 2003 to capitalise on the potential of the Namibian mining industry as a source of economic and export growth, and employment.

A number of important considerations stand out from the detailed review of the literature in this chapter.

First and foremost, it is emphasised that a country's success in attracting mining-related investment depends on the current availability of significant mineral reserves and future potential, a stable government, a well-managed fiscal regime, a favourable investment climate, a well-developed legal system and good national infrastructure.

Second, a very good policy on paper does not, on its own, guarantee that the desired goals and objectives will be reached. Goals and objectives need to be translated into practical initiatives that are realistic and measurable, and responsibility and accountability areas must be delineated from the outset. Such initiatives also need to be supported by a strong legal framework, transparent and efficient regulations and procedures, and clear action plans with achievable targets (including optimal timeframes). In the absence of these elements, the prospects of Namibia's Minerals Policy having a practical impact are significantly weakened.

Third, it is evident that Namibia faces severe skills shortages in several economic sectors, including the minerals sector. There is a noticeable disparity between the skills imparted by education and training institutions in the country and the skills demanded by industry. This leads to skills mismatches and shortfalls, and relatively low productivity. If the human capital and skills development challenge is not adequately addressed, the country will continue to see lacklustre industrial output and economic growth. This in turn will delay the realisation of Namibia's

Vision 2030 to become a prosperous and industrialised nation and will keep large swathes of the population in poverty.

Fourth, value addition should be a focal point among decision-makers in the minerals sector since it has the potential to boost export revenues and bring down the import bill, improve skills levels and widen the employment base. Mineral beneficiation should play a key role in this regard, while upstream, downstream and side-stream linkages should be continuously identified and activated.

Fifth, mining has a potentially harmful effect on the environment and people of Namibia. While Namibia's national environmental legislation is quite advanced and Environmental Impact Assessments (EIAs) are mandatory, the Minerals Policy does not make provision for Social Impact Assessments (SIAs), which means that the impact of mine closures on surrounding communities is often overlooked.

The researcher is of the view that while Namibia's Minerals Policy has clearly articulated objectives and themes that resonate with many of the views found in the literature, the policy implementation process has encountered a series of obstacles (pointing to structural weaknesses as well as less controllable, environmental influences), which have prevented the country from capitalising on the many opportunities presented by its mineral wealth. The absence of a well-crafted implementation plan, with ongoing efforts to build knowledge and capacity, is one of the most glaring omissions. So, too, is a nominated champion or set of champions who will be rigorous in seeing to it that the different phases of the plan are executed and – through ongoing monitoring and evaluation (M&E) – remain relevant and attainable.

While it is tempting to simply point fingers at government (which, after all, is the custodian of the Minerals Policy in Nambia), it is important to analyse the policy implementation process in a systematic fashion before arriving at any final conclusions. This will be the focus of Chapters 3 and 4.

CHAPTER 3: POLICY IMPLEMENTATION CHALLENGES

3.1 Introduction

Policies that are not properly implemented — due to insufficient planning, skills, strategic support or political will — will inevitably deliver weak results. This chapter contextualises the policy implementation process. It starts by defining what policy implementation involves and discusses some of the key factors contributing to implementation failure. A conceptual framework for the statutory implementation process and some of the main features of the Minerals (Prospecting and Mining) Act No. 33 of 1992 are also covered. Finally, some broad insights into the process of human capital development are provided, with references to Namibia where skills deficiencies are hampering the advancement of its minerals and other sectors.

However, before examining the various elements of the policy implementation process, it must again be reiterated that in the absence of a practical implementation plan (which, as has been established earlier, is the case with Namibia's Minerals Policy), most attempts to introduce the policy are likely to be stillborn. An implementation plan should ideally incorporate key objectives, institutional structures, desired statutory outcomes, associated assumptions and action steps, progressive time frames, required resources, responsible parties, measurement and evaluation arrangements, and contingency measures. It constitutes a detailed 'road map' for reaching a particular destination and answers the questions, 'Where are we going?' and 'How are we going to get there?'

The creation of a well-informed implementation plan for Namibia's Minerals Policy is, therefore, a strategic priority for the government and other relevant stakeholders in the minerals sector. Although Namibia's regulatory environment has facilitated much incoming investment into the minerals sector, it draws on old legislation which makes little provision for more contemporary challenges, such as uncertain commodity prices, heightened competition in international and regional markets, shrinking demand for commodities in countries like China and

India, a surge in value chain-linked trade, and so on. The legislation therefore needs to be refreshed and brought into line with the tenets of the Minerals Policy and other national plans and initiatives.

Whether the implementation plan should precede the erection of a suitable regulatory framework, or whether the regulatory framework is first necessary to give birth to the plan, is a moot point. Indeed, in many ways the one informs and influences the other. The scope of this study does not extend to an examination of the policymaking process or how or when to create complementary legal/regulatory structures and processes. For the purpose of this study, it can simply be assumed that the policy implementation plan should be the 'bridge' between the policy formulation process (a high-level activity among key stakeholders) and the design and rollout of appropriate legal structures and regulatory processes. Whereas the policy focuses on intended outcomes, the legal and regulatory structures and machinery provide the means through which such outcomes can be attained.

3.2 Policy Implementation Process

McLaughlin (1985, cited in Panday, 2007: 240) defined implementation as "the process whereby programmes or policies are carried out; it denotes the translation of plans into practice". Sabatier and Mazmanian (1980), in turn, described implementation as the carrying out of a basic policy decision, usually via a statute. Ideally, a policy decision should identify the problem(s) to be addressed, stipulate the objective(s) to be pursued and, in various ways, 'structure' the implementation process.

Once a policy is formulated and legitimised at the appropriate strategic level of an organisation, it is handed over to the administrative sections for execution or implementation (Barrett, 2004). Barrett suggested that the policy needs to be progressively refined and translated into operating instructions as it moves down the hierarchy to operatives at the 'bottom of the pyramid'.

According to Meter and Horn (1975, cited in Panday, 2007: 240), "policy implementation encompasses those actions by public and private individuals (or groups) that are directed at the achievement of objectives set forth in prior policy decisions". This includes both once-off actions to operationalise policy decisions, as well as continuing efforts to realise short and longer term objectives.

The policy formulation and execution process is generally seen as the main route that government follows to achieve its goals, but the process is frequently hampered at the implementation stage. A number of factors can contribute to implementation failure. Barrett (2004) cited the following main problems:

1) A lack of clear policy objectives (even if an implementation plan exists), which leaves room for differences in interpretation and allows too much discretion in how a policy should be converted into legislation and accompanying regulations;
2) A multiplicity of actors and agencies involved in the implementation process, which causes communication and co-ordination problems between the various 'links in the chain';
3) Different values, perspectives and priorities among the actors in an inter- and intra-organisational context, which affects how policies are interpreted and how vigorously (and for what reasons) implementation is pursued; and
4) Relative autonomy among those responsible for implementation, which limits administrative control over the process.

Thus, a very good policy on paper is not on its own a guarantee that the desired goals will be attained. For this reason, Barrett (2004) suggested that implementation should be regarded as an integral and continuous part of the policymaking process rather than an administrative follow-on. It should be seen as a policy-action dialectic involving negotiation and bargaining between those seeking to put policies into effect and those upon whom action depends.

The execution of formal policies, evidenced in statutes or administrative regulations, requires someone to do something (or refrain from doing something) and such action has to have the desired effect (Montjoy and O'Toole, 1979).

Panday (2007) suggested that the implementation of public policy involves government performing a number of planned activities with a view to achieving a set of goals and objectives, as set out in authorised policy statements. Matland (1995, cited in Barbosa et al., 2016) complemented this idea by asserting that a policy's success can be measured in terms of how well it translates into a prescribed statutory mandate. However, Matland was quick to point out that some polices can be quite broad, with vague goals and objectives, making proper implementation difficult.

Furthermore, if a policy cannot be quantified, e.g. it does not have any indicators to measure whether or not implementation has taken place, then it will be difficult to determine its success (Barbosa et al., 2016). Another challenge, highlighted by Paudel (2009, cited in Barbosa et al., 2016), is that policy implementation is not a quick or simple process as it is influenced by a complex set of socio-cultural, political and economic factors. It is therefore recommended that before formulating any policies, government should first interrogate whether it has the capacity to implement the policies or whether it needs to develop more capacity, possibly even having a dedicated programme under whose auspices the implementation process is carried out.

Montjoy and O'Toole (1979: 2) summed up the implementation challenge as follows: "If a well-implemented highway programme should fail to alleviate traffic problems, the fault would lie in our knowledge of the connection between the highways and traffic, and not in our inability to construct highways". In other words, it is not the substance of a policy that determines its success or failure; rather, it is how well the underlying problem (including the needs of various interest groups) has been understood and how carefully the implementation plan has been designed, activated, monitored and periodically revised. As mentioned earlier, Namibia's Minerals Policy has been lauded for its noble intentions, but the lack of an implementation plan (which would incorporate key milestones and monitoring mechanisms) has eroded its potential impact. As a result, minerals beneficiation has not taken off, new competitive advantages and revenue streams

have not been explored, and the country remains dependent on a narrow and comparatively low-value minerals export basket.

A country's minerals sector — particularly when it plays a critical role in the economy, as it does in Namibia — requires many different kinds of inputs (technical, financial, environmental, legal) and strong management to keep all the pieces together. As the government is the custodian of Namibia's Minerals Policy, it should have within its ranks experienced staff who are not only able to handle the specialised work and complex relationships associated with the policy implementation process, but can also see the big economic picture in the country. To make a difference, government has to have 'capacity'. Capacity is sometimes confused with skills; yet, strictly speaking, they are not the same. Capacity comes from a combination of adequate physical and technological resources, functional expertise (acquired through education, skills and time on the job), managerial talent, and enduring motivation and commitment.

3.2.1 A conceptual framework for the implementation process

The primary focus of this research is to investigate the factors impeding the full implementation of Namibia's Minerals Policy. The conceptual framework developed by Sabatier and Mazmanian in 1980 is a useful reference in this regard as it focused on obstacles to the implementation process. The conceptual framework therefore offers valuable theoretical insights from which lessons can be gleaned for Namibia.

The above-mentioned conceptual framework is premised on the understanding that voluntary actions without an enforced means to measure the outcomes (of, say, particular statutes) are not as effective as they should be.

Sabatier and Mazmanian (1980) asserted that a statute constitutes the fundamental policy decision being implemented in that it reveals the problems being addressed and stipulates the objectives to be pursued. The authors emphasised that a statute 'structures' the entire implementation process by: selecting the implementing institutions; by providing legal and financial resources to those institutions; by

determining the probable policy orientations of implementation agency officials; and by regulating the opportunities for participation by non-agency actors in the implementation process.

The authors further stated that a carefully drafted statute can substantially improve the chances of its underlying objectives being attained. Such a statute would have the following features:

1) It incorporates a valid causal theory linking behavioural change to desired impacts;

2) Its objectives are precise and clearly ranked;

3) It provides for adequate funds to be allocated to implementation agencies;

4) It makes provision for implementation agencies to be integrated in a hierarchical fashion, thereby promoting a more coordinated and cohesive effort;

5) It ensures that the decision-making rules to be followed by the implementation agencies are geared towards the achievement of statutory objectives;

6) It ensures that implementation responsibilities are assigned to agencies that support the statute's objectives and attach a high priority to the programmes in question; and

7) It encourages outsider input/participation in order to advance the process of achieving statutory objectives.

The above features are succinctly unpacked below to drive home their importance to the policy implementation process.

Validity of the causal theory underlying a statute

'Implementation effectiveness' concerns the ability of implementation agencies to produce the requisite behavioural changes in target groups (e.g. mining companies), preferably with minimal adverse side effects (Sabatier and

Mazmanian, 1980). This suggests a causal relationship. The concept of 'technical validity' also produces a causal relationship. Technical validity refers to a clear link between target group behaviour and the attainment of statutory objectives. The authors emphasised that these relationships must be in place if statutory objectives are to be met.

Precision in and clear ranking of statutory objectives

Statutory objectives that are precise and clearly ranked in importance serve as an indispensable tool in the evaluation of a programme or other policy initiative, as they constitute unambiguous directives to implementing officials. They are also a valuable resource to other supporters of the objectives, including actors within and external to the implementation agencies, who would otherwise not become aware of discrepancies between agency outputs and original policy intentions (Sabatier and Mazmanian, 1980).

Financial resources provided to implementation agencies

Sabatier and Mazmanian (1980) indicate that funding is required to hire and develop staff at implementation agencies, to carry out technical analyses, to formulate the relevant regulations, to administer permit and other registration systems, and to monitor compliance on a continuous basis. The authors further submitted that a minimum funding threshold is necessary if the statutory objectives stand a chance of being achieved, with any available funding above this threshold improving (by a proportional amount) the probability that the stated objectives will be met.

Hierarchical integration within and among implementation agencies

Numerous studies on the implementation of statutes have shown that one of the principal obstacles is the difficulty in achieving coordination, both within a given agency and among the numerous semi-autonomous agencies involved in the implementation process (Sabatier and Mazmanian, 1980). The most important attribute of any statute is the extent to which it hierarchically integrates the implementation agency (or agencies). If agencies are loosely integrated, there will

be considerable variation in behavioural compliance between implementing officials and target groups.

Decision-making rules in implementation agencies aligned to statutory objectives

Sabatier and Mazmanian (1980) explained that in addition to providing clear and consistent objectives and adequate incentives to encourage compliance, a statute can further bias the implementation process by formally stipulating the decision-making rules of the implementation agencies. For example, where the burden of proof in permit/licensing cases is placed on the applicant, the decisions of implementation agencies are more likely to be consistent with statutory objectives.

In addition, a statute can assign authority for final decision-making to those officials in implementation agencies who are most likely to support statutory objectives (Sabatier and Mazmanian, 1980). The authors also stated that in the case of regulatory agencies, which operate primarily by granting permits or licences, rules regarding the granting of a permit/licence that are based on substantial consensus (e.g. a two-thirds majority) lend themselves well to stringent regulations.

Commitment of implementation agencies/officials to statutory objectives

No matter how well a statute shapes the formal decision-making process, the attainment of statutory objectives that aim to significantly modify target group behaviour is unlikely unless officials in the implementation agencies are strongly committed to the achievement of those objectives (Sabatier and Mazmanian, 1980). Officials need to adopt a neutral attitude and periodically develop and enforce new regulations and standard operating procedures, even in the face of resistance from target groups and others who are reluctant to make the mandated changes.

Inputs encouraged from actors outside the implementation agencies to assist in the attainment of statutory objectives

It is said that a statute can, depending on its design and the stance adopted by the implementation agencies, bias the implementation process. A statute can also affect the participation of two groups of actors external to the implementation agencies, i.e. potential target groups/beneficiaries of a particular programme, on the one hand, and those with more tenuous links to the statute and implementation agencies, on the other hand.

Sabatier and Mazmanian (1980) suggested that target groups such as investors and manufacturers do not lack the legal or financial wherewithal to take a matter to court if they are unhappy with a piece of legislation or the way it was enforced. In contrast, the more remote beneficiaries of most consumer and environmental protection legislation do not have a sufficiently direct or salient interest in the effects of a contested piece of legislation that they would want to take it up at the judicial level.

The authors recommended the formulation of statutes that call for liberal inputs into agency proceedings from external parties so that the chances of implementation success are improved.

The conceptual framework discussed in this section offers some useful guidelines and lessons, but it is not intended to replace the implementation plan.

3.2.2 The Minerals (Prospecting and Mining) Act No. 33 of 1992

Article 100 of the Namibian Constitution addresses 'Sovereign Ownership of Natural Resources'. The article stipulates 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" (Republic of Namibia, 1990: 40).

Pre-independence, the owner of land was the owner of all the minerals on the land. It is against that background that the Minerals Act was first formulated. The founding principles guiding the drafting of the Minerals Act No. 33 of 1992 are:

- To repeal old legislation inherited from the colonial regime;
- To conduct effective exploration and mining activities in Namibia and ensure security of tenure; and
- To ensure that custodianship of the mineral resources is vested in the state on behalf of the Namibian people, in line with Article 100 of the Namibian Constitution.

Pursuant to determining whether the government has devised the right statutory/regulatory framework for delivering on the Minerals Policy's objectives, including ensuring proper implementation, the researcher analysed the Minerals Act and any discernible links to the Minerals Policy in detail. The findings are worrying.

Namibia's Minerals Act focuses mainly on issues pertaining to mineral rights and how these are administered. However, how the different facets of the Minerals Policy should be implemented and who should be accountable are not given attention in the Act. In this respect, the Act could be considered to be quite weak. Furthermore, the Minerals Policy has not been incorporated into the Act — even though it has been many years since the Policy was first unveiled.

Mtegha et al. (2006) suggested that the implementation of a minerals policy must be accompanied by the articulation of policy instruments into mineral laws, subsidiary legislation and other structures, backed up by appropriate skills and capacity to ensure the effective administration of policy outcomes.

When the Minerals Policy was adopted in 2003, a process of reviewing the Minerals Act was underway. This represented the ideal time to incorporate relevant policy provisions into the Act (Ministry of Mines and Energy, 2003) and would have cemented the policy implementation process. Unfortunately, this did not happen, and 14 years later, the Minerals Policy remains detached from the

Act. Although it is a competent document that covers many of the pertinent issues relating to the minerals sector, the Minerals Policy effectively lacks teeth. This has compromised the design of a supportive legislative framework that takes all the policy concerns into account, and compounded the problem of slow policy implementation.

Frequent references have already been made in this research report to the absence of a clear implementation methodology for Namibia's Minerals Policy. Equally worrying, though, is that the legislative framework for the minerals sector does not pay direct attention to the concerns raised in the Minerals Policy document. Rather, the Minerals Policy is a derivative of the Minerals Act No. 33 of 1992, which is much older and gives less attention to current pressing socio-economic priorities in the country. It goes without saying that a conducive regulatory framework (which is more technically orientated) and a workable implementation plan (which is more people orientated) must go together. Of course, an essential ingredient in both cases is political will.

It is understood that the Ministry of Mines and Energy is busy drafting a new Minerals Bill which, when enacted, will replace the Minerals Act No. 33 of 1992. The Chamber of Mines has indicated that assistance has been obtained from the Commonwealth Secretariat, which is currently assessing the draft Bill for coherence with the Minerals Policy and other pieces of legislation. Further information about the Minerals Bill is not known at this stage as when this report was finalised, official details had not emerged from government. It is hoped that the draft Minerals Bill is taking cognisance of the need to erect the necessary structures to ensure both technical compliance among target groups (e.g. mining companies) and greater certainty among those in government tasked with promoting and managing the different provisions of the country's Minerals Policy.

Although industry does not always like the aspect of control (which is the purpose of regulation), they need (and welcome) certainty. Certainty has many technical elements to it (e.g. specific laws must be adhered to, according to prescribed rules

and procedures), but it is also heavily influenced by how well aligned those in government are in terms of their understanding of particular situations, their value systems, their personal agendas and their political aspirations.

Skills and capacity constraints within government are common laments in Africa and sound the death knell for so many fine proposals and plans. While the private sector is not immune to skills and capacity shortcomings, where policy implementation is concerned, the government of necessity plays a central role. Ongoing inertia and/or uncertainty have negative spill-over effects for the economy, especially where investors are concerned — who are currently the lifeblood of Namibia's minerals sector and the hope for a more value-added future.

The next section examines the importance of human capital development in general, outlining various skills-related challenges and introducing possible strategies to address these. The section lends weight to the argument that the successful implementation of Namibia's Minerals Policy is as dependent (if not more so) on human capabilities as it is on structural and procedural integrity.

3.3 Human Capital Development

According to the OECD (1996a, cited in Azizan, 2011: 39), human capital is the accumulated knowledge, skills, competences and other attributes that individuals call upon when engaging in various economic activities. In economic terms, Azizan (2011) said that human capital theory looks at the rate of return on investment in human endeavours, job mobility, wages and expenditure on human assets. Azizan further asserted that countries with a comparatively large supply of human capital will be the leaders in the global economy. Recent trends and reports have pointed to the fact that the availability of talent is a key component in the long-term competitiveness of companies and nations.

Studies on human capital invariably delve into theories about education, showing the linkages between education, knowledge creation and skills development, and explaining how education levels determine the type of skills that are typically

acquired. Highly educated people, for example, bring a high level of cognitive skill to a task, which increases economic returns (Azizan, 2011). According to Schultz (1961, cited in Azizan, 2011), education contributes to human capital growth in four different ways:

1) It develops research capabilities;

2) It enhances skills;

3) It builds the capability to adjust to workplace changes; and

4) It improves the teaching process.

Rasool and Botha (2011) believed that sectors that use skilled people contribute relatively more to economic growth.

In general, the word skill is defined as the ability to perform tasks; it denotes the quality aspect of human capital. Teixeira (2002, cited in Azizan, 2011: 45), in turn, defined skill as "the ability to perform given tasks or master various techniques, or, more broadly, it can refer to the range of behavioural attributes such as reliability, ability to work without supervision, and stability of employment". In simple terms, skills are linked to how well equipped people are to learn and, in the process, acquire competencies in a practical sense.

Nzimande (2009, cited in Rasool and Botha, 2011) was of the view that education and training by themselves cannot address skills challenges. When referring to skills gaps, for example, some people use training and skills interchangeably. Bloom et al. (2004) distinguished between skills and training as follows: skills imply what an individual possesses/acquires, while training refers to courses or other interventions that, if successful, impart skills to an individual. When considering skills challenges, it is of the utmost importance that skills shortages, skills gaps, and latent skills gaps be differentiated from one another.

3.3.1 Skills challenges

According to Skills Insight Annual Skills Review (2001, cited in Bloom et al., 2004: 11), "skills shortages refer to a shortage of suitably skilled people available

in the labour market". Rasool and Botha (2011) attributed skills shortages to one or more of the following: insufficient numbers of workers in a particular occupation, the demand for labour exceeding the availability of skills in a particular sector, and/or people lacking appropriate qualifications to perform certain types of work" (2011: 6). It can happen that vacancies remain unfilled if salary levels are not sufficiently attractive to lure good candidates who, instead, take up positions in other areas.

However, Bloom et al. (2004) cautioned against the tendency to confuse skills shortages with the problem of filling vacancies, which might not be related to skills at all but rather to factors such as remuneration, working conditions, and perceptions about a particular industry or profession (Bloom et al., 2004: 12). One of the key factors contributing to the dire shortage of skills in developing countries is dysfunctional educational systems. A major concern is that tertiary institutions are not producing enough graduates with the relevant qualifications to keep up with demand (Richardson, 2007, cited in Rasool and Botha, 2011). The author indicated that this situation arises when there is a mismatch between supply from tertiary institutions and demand from the labour market.

Campbell et al. (2001, cited in Bloom et al., 2004: 12) said that skills gaps arise when firms have employees who are not skilled enough to meet organisational objectives. This tends to occur when the current skills mix is no longer appropriate. It is generally believed that skills gaps are a bigger problem for employers than skills shortages.

Bloom et al. (2004) also referred to latent skills gaps. These are unrecognised skills gaps which, while present, organisations have simply adapted to. However, in the process, such organisations have become caught in a low-skill vice. Latent skills gaps can be measured against three main elements which are gauged when an organisation tries to improve its position in terms of growth or market position. The first two elements cover those skills that are needed for an organisation to achieve 'best practice' and those that will resolve further perceived skills deficiencies once best practice has been achieved. The third element covers a collection of skills required to move from the existing situation to a high-

performance position, i.e. ‘transitional’ skills requirements (Campbell, 2001: 187, cited in Bloom, 2004: 12).

An individual possesses two types of skills: general skills and specific skills (Becker, 1964, cited in Azizan, 2011). The knowledge gained from schools or other formal institutions is categorised as general since it is not directed at building specific expertise.

Conversely, specific skills are acquired in the workplace and are usually the result of experience and on-the-job training. These would include people’s knowledge of the work setting, familiarity with their co-workers, and know-how about a particular production process that is unique to the firm (Bloom et al., 2004). However, it should be noted that different job specifications require different types of skills.

For employees to understand the tasks given to them, they should possess both hard and soft skills (Robles, 2012; Azizan, 2011). Hard skills relate to the technical knowledge and expertise needed to do a job. Such skills can be acquired from teachable knowledge or practical training. Random House Dictionary defines hard skills as “the ability, coming from one’s knowledge, practice, aptitude, to do something well … a craft, trade, or job requiring manual dexterity or special training in which a person has competence and experience” (http://dictionary.reference.com/browse/skills).

Soft skills relate to personal attributes and interpersonal qualities. The Collins English Dictionary defines soft skills as “desirable qualities for certain forms of employment that do not depend on acquired knowledge: they include common sense, the ability to deal with people, and a positive, flexible attitude” (http://dictionary. Reference.com/browse/skills). These types of skills can be acquired in a variety of contexts — at home, in the community, at school and at work. Lifelong learning is a component of soft skills, encompassing the development of general and applied skills and knowledge, and social values (National Planning Commission, 2012b).

Soft skills are critical for productive performance in today's workplace, with the ability to analyse situations and exercise good judgement being among the skills most employers look for in an applicant when recruiting (Bloom et al., 2004). Soft skills are also typically equated with effective leaders (Robles, 2012). One of the greatest features of soft skills is that they are not limited to any particular profession.

Having both hard and soft skills enables people to learn and adapt quickly to the changes brought on by new technologies. Employees with a well-rounded skill set not only excel academically; they also have wide-ranging cognitive abilities that translate into practical competencies (Azizan, 2011).

Coates et al. (2009) claimed that in today's increasingly knowledge-based economy, human capital is high on the policy agenda of national governments and internationally focused organisations. In this regard, high-quality university education, research activities and skills training — which can be benchmarked against those of competitors — are important contributors to human capital development (Azizan, 2011).

Partnerships between institutions of learning and industry are fundamental in ensuring the relevance of education and training, which need to be aligned to the needs of the workforce (Jagannathan, 2013). A study by Azizan (2011) suggested that an educated or trained workforce has the potential to increase productivity as they draw on useful knowledge and skills. Azizan further emphasised that over time, employers prefer to employ new workers with better educational qualifications since better educated workers are easier to train.

Coates et al. (2009) added that conducting quantitative studies on the relationship between skill sets and organisational performance helps an organisation to determine the value of its employee base. Yet finding a means of quantifying a person's skills is a significant challenge, and there is no universal formula to score the value of skills and competencies. Skills are difficult to observe and measure, especially as they relate to inherent abilities that are only observable as the residual between inputs and outputs (Infometrics Ltd, 2006). However, Coates et

al. (2009) advised that one way of quantifying skills and competencies involves using questionnaires and conducting interviews with workers, focusing on aspects such as practical experience, theoretical knowledge, previous performance, completed training and qualifications acquired.

In addition to this, Borland (2000, cited in Infometrics Ltd, 2006: 5) mentioned three practical methods that have been used to measure skills:

1) Identifying observable qualities, such as education, qualifications, occupation and experience;
2) Defining people's skills levels by using objective measures of personal attributes and/or job suitability, e.g. cognitive abilities, motor skills and interpersonal skills; and
3) Defining people's skills levels according to the wages that they earn, e.g. higher wages reflect a significant opportunity cost, which is an indication of people's productivity and the relative scarcity of the skills that they possess.

3.3.2 Human capital development strategy

Careful planning needs to go into human capital development if a country hopes to improve its competitiveness. Haslinda (2009a, cited in Azizan, 2011: 52) defined human capital management as a process of acquiring, developing, deploying and consolidating employees' collective knowledge, skills and abilities by introducing internal systems that match employee attributes with the organisation's overall goals.

With reference to the work of Liebowitz (2004b, cited in Azizan, 2011), there are four interrelated factors that provide a basic foundation for an organisation's human capital development strategy. These factors are:

1) Management competency: This is significant as it determines an organisation's direction and progress;

2) Performance management: This involves observing and monitoring how employees are performing against agreed targets or operational standards, and providing rewards to deserving individuals;
3) Change management: This is geared towards preparing an organisation to face and adapt to changes caused by the introduction of new technologies; and
4) Knowledge management: This goes to the heart of human capital development and is fundamental to the creation of a knowledge culture, a more innovative workplace and a sense of belonging.

Adopting an appropriate human capital development strategy makes it possible for organisations and indeed entire countries to address diverse aspects of the human condition, particularly in the context of building competitive advantages (Azizan, 2011).

From the findings of the Hays Global Skills Index 2015, three recommendations have been proposed as practical solutions to the global skills deficit:

1) Enable more and easier skilled migration, thereby permitting businesses access to workers with critical skills.

   In this regard, governments should make it possible for businesses to source skilled individuals from other countries if the local talent pool is wanting. Placing restrictions on acquiring necessary skills from elsewhere, and thus stunting companies' growth, is very short-sighted (Hays plc, 2015).

2) Ensure better training for employees and closer collaboration with schools, universities and technical colleges so as to deliver more worthy candidates into the skills pipeline of the future.

   Sound education and training systems form the bedrock of a progressive and inclusive economy, and should be accessible to both young graduates/apprentices and older workers alike. When countries have structured initiatives in place to enhance the standard and relevance of education and

training, their pool of 'home-grown' talent grows and this has a positive impact on local productivity and social stability (Hays plc, 2015: 3).

3) Encourage businesses to embrace technology and maximise the skills and latent talent at their disposal.

In an age when technology-driven innovation is becoming a key ingredient for global success, businesses need to invest more heavily in productivity-enhancing technologies and also prepare their workforces for the fast-changing commercial environment through appropriate development programmes.

The new paradigm of working smartly is shaping many business operations today and workers' innate aptitudes and talents need to be nurtured if businesses are to deliver cost-effective outputs (Hays plc, 2015:3). Just as manufacturing and other processes need to be planned, so too does human resources development. Where the latter is neglected, skills mismatches can result and businesses will not be able to realise their potential (Azizan, 2011: 54).

According to a report produced by the European Centre for the Development of Vocational Training (Cedefop, 2010, cited in Azizan, 2011), some of the factors contributing to skills mismatches are: over-educating but under-skilling, skills shortages, skill gaps and skills obsolescence (see Table 3.1). Cedefop further indicated that mismatches mostly result from inefficient accumulation and utilisation of human capital.

Another factor contributing to the imbalance between the skills needed and the skills on offer is that tertiary institutions in the country are not producing graduates with the qualifications, skills or competencies required by industry. The situation in Namibia is complex and not properly understood. There is a tendency, for example, for employers in Namibia to show a preference for South African tertiary qualifications as opposed to equivalent local qualifications. However, the researcher is of the opinion that most graduates of Namibia's tertiary institutions do possess the kind of foundational knowledge and competencies that would make them eligible to succeed in different industry sectors. The researcher also

believes that most graduates possess the physical and mental stamina required to embark on skills development programmes aimed at keeping them continuously prepared for the world of work.

Table 3.1 Types of skills mismatches

Types of skills mismatches	Description
Over-education	• A situation in which an individual is more highly educated than the current job requires; • Over-education results from the asymmetric nature of worker aspirations vis-à-vis the realities of the market.
Under-skilling	• A situation in which an individual fails to attain the competencies required to perform the current job to an acceptable standard.
Skills shortage	• A situation in which the demand for people displaying a particular set of skills exceeds the supply of available people with such skills; • Skills shortages are typically the result of under-investment in appropriate training.
Skills gap	• A situation in which the skills level of those currently employed is lower than that required to perform the job adequately. Alternatively, the types of skills available do not match the requirements of the job.
Skills obsolescence	• A situation in which skills previously demanded by a particular job are no longer required or have diminished in importance; • Skills obsolescence can arise in two ways: first, as a result of the diffusion of new technology which can erode the need for more traditional skills; and secondly, as a result of experienced workers — who have accumulated significant amounts of knowledge

	and practical experience in relation to old technology — delivering weaker performance when they switch to a new task (Weinberg, 2007).

Source: Information compiled from Cedefop (2010, cited in Azizan, 2011: 54)

It is difficult to arrive at a simple consensus as to what skills are required for a particular economic sector to function optimally. While industry appears to want individuals equipped with practical skills, most university graduates mainly possess theoretical knowledge. Thus, the knowledge gained at university may be simply a basic requirement for entering the job market. Theoretical knowledge has to be accompanied by training as well as practical experience gained in the workplace. In other words, talented human capital is the result of knowledge and skills gained from both formal and non-formal education and/or training.

3.3.3 Policies underpinning effective skills development systems

This section provides some examples of policy lessons gleaned from advanced economies such as Australia, Germany, the Republic of Korea and Singapore. The first learning point is that advanced economies systematically align their education and employment policies with economic and industrial policies (Jagannathan, 2013). According to Jagannathan (2013), these governments set out to establish an effective skills development system by first strengthening technical and vocational education and training (TVET) – which has proven particularly valuable for these countries' industrialisation drives. They also followed a strategy of promoting the importance and prestige of technical education. Furthermore, they remained flexible and responsive to the evolving needs of industry, making adjustments where necessary and not being hindered by the finer details of various planning documents.

With reference to work done by Jagannathan (2013), below are concise descriptions of the skills development systems in Singapore, the Republic of Korea, Australia and Germany, which provide some interesting learning points for other countries intent on implementing skills development turnaround strategies.

From being an underperforming economy up to the 1970s, Singapore (under the enlightened leadership of its longstanding Prime Minister, Lee Kuan Yew) became an example of what is possible when focused attention is given to education, good governance and discipline across the socio-economic spectrum. France, Germany and Japan provided Singapore with technical assistance to establish institutes of technology in the1970s and 1980s, and the government continued to invest heavily in various forms of education and training, including TVET. Singapore has long enjoyed a reputation for having a very progressive approach to skills development, which is particularly evident in the successes it has clocked up in the fields of electronics, chemicals, precision engineering and biomedical technology (Jagannathan, 2013: 3). To ensure that the government of Singapore was equipped to run the country, Lee Kuan Yew introduced a policy of reserving top ministerial posts in government for individuals who had run sizeable corporations and therefore, had strong commercial experience.

The government of the Republic of Korea, in turn, adopted a strategy of encouraging widespread skills development through the provision of incentives — mainly in the form of tax exemptions awarded to companies in return for training of their workforces. The government, as part of its general economic planning, also engages in economic and industrial forecasting and corresponding labour force planning. For example, forecasts of future demand in specific sectors are linked to education subsectors (including primary and secondary education), and investment is then sought and allocated to those areas that need overhauling or expansion.

In the late 1980s and during much of the 1990s, Australia's education and training system underwent a series of reforms in the wake of growing popularity for competency-based training and the decision to harmonise individual state systems under a single national system. Competencies are defined in Australia as those skills required in the workplace, as opposed to mere academically oriented knowledge. The skills development process in Australia focuses on preparing people for the labour market and advocates a strong foundation of education embedded within the TVET system as well as broad, rather than narrow or

specialised, vocational schools. Like a number of other countries (e.g. New Zealand and South Africa) that adopted the complex competency-based or outcomes-based approach to skills development (which created excessive amounts of administrative red tape at the expense of the transfer of knowledge and skills), Australia has had to moderate its training methodologies in recent years.

Unlike other countries where TVET systems have been poorly implemented and/or gained insufficient traction, Germany's TVET system has had widespread appeal over the years and has regularly delivered cohorts of accomplished graduates in a variety of specialisations. One of the strengths of the system is that it is largely company-driven, with companies contributing 75% to the cost of training and the remaining 25% coming from the government. This allows trainees and apprentices to be paid a salary which increases from year to year for the duration of the training period. Another unique feature of the German system is that there is cooperation and task sharing among public institutions, industry chambers, companies and TVET schools. Germany's prowess in terms of technical training and the country's well-entrenched apprenticeship system have been among the keys to Germany's industrial strength.

Table 3.2 provides examples of specific actions that (particularly developing country) governments can take to address skills deficiencies (Jagannathan, 2013). The table presents innovative approaches which should inform skills development policies and help to reinforce the need to create a repertoire of practical solutions to skills-related challenges.

Table 3.2 Skills development in developing countries — adjusting the approach to varying circumstances

Issues and areas for action	How?
Developing the necessary skills to stimulate economic growth and to move the country from low to middle income level or from middle to high income level	• Focus skills development in those sectors that are identified as pivotal to the country's competitiveness, and align skills development policies with economic and industrial policies.

Strengthening the base of higher-order skills demanded in the workplace	• Invest in science, technology, engineering and mathematics at secondary and post-secondary education levels. Also provide for skills training at the post-secondary and tertiary levels to be linked to qualifications that are attractive and meaningful to employers.
Enhancing private sector participation and partnerships to scale up training provision and increase job placements	• Award skills vouchers to encourage the financing of training of target groups by private sector providers. • Enter into training contracts with private providers that involve placement-based payments. • Develop skills assessment systems that incorporate various industry requirements.
Increasing opportunities for training for the disadvantaged and promoting TVET for inclusive growth	• Practise appropriate affirmative action to improve access to training for students and workers from poor and disadvantaged backgrounds. • Support the training of workers in the informal sector so that they can make a greater contribution to the economy. • Expand training opportunities for the rural youth in high-growth sectors.
Strengthening soft skills, language skills, and information and communication technology (ICT) skills, along with technical skills to improve job readiness	• Incorporate (where appropriate) soft skills, language skills and ICT skills into secondary and tertiary level education and training curricula, together with effective assessment mechanisms.
Creating skills development pathways that facilitate training in	• Introduce (and, where appropriate, fund) modular training programmes for

various fields and the continuous updating of qualifications	continuous updating and upgrading of skills. • Put in place recognition of prior learning (RPL) criteria and procedures, and clarify articulation pathways between formal and informal learning and institutional and workplace-based training. • Introduce qualifications that reflect competencies required by industry.
Improving employment services and the manner in which job placements are carried out	• Reform employment legislation to give (especially private sector) employers more discretion when it comes to the appointment of staff. • Focus on ancillary services that link training with actual job placement.

Source: Adapted from Jagannathan (2013)

3.3.4 Brief overview of education and skills challenges in Namibia

Employee skills and competencies are widely acknowledged to be an organisation's most valuable asset and a source of competitive advantage. They are also a driving force behind a country's economic development. Recent trends and studies indicate that the effective use of talent is a key component of the long-term competitiveness of firms and nations (Jagannathan, 2013). Thus, investment in education and skills development are crucial.

The Namibian Constitution, 1990 (Act No. 1 of 1990) and the Education Act, 2001 (Act No. 16 of 2001) regulate Namibia's education system (National Planning Commission, 2012b). Various reports and budget speeches indicate that since the country's independence, education has received the lion's share (nearly 20%) of the National Budget. Clearly, the government has been investing heavily in the country's education efforts, with the stated aim of improving the education and skills development architecture and the quality of teaching at all levels,

extending training (including vocational) opportunities to more target groups, and building adequate capacity among those responsible for implementation within government (Fernandes, 2014).

Furthermore, one of the objectives of Namibia's Vision 2030 is to: "develop diversified, competent and highly productive human resources and institutions, fully utilising human potential, and achieving efficient and effective delivery of customer-focused services which are competitive not only nationally but also regionally and internationally" (National Planning Commission, 2004: 41). A well-educated and appropriately skilled workforce is critically important for innovation and competitiveness, especially in the minerals sector (Chiomba, 2015).

Despite these lofty ideals, it is evident from the National Development Plan (NDP4), which runs from 2012 to March 2017, that education and training in Namibia are very weak by global standards. This is notwithstanding the fact that access to primary and secondary education is free, and a significant proportion of the national budget is channelled into vocational and tertiary institutions. Key challenges identified in the NDP4 are quality deficiencies in the country's education system across all layers and sectors (which negatively impact students' perseverance and chances of success), and a mismatch between the type of skills required and the type of skills on offer in the country. As a result, some sectors of the economy are unable to fill vacancies as the necessary talent is unavailable, with some firms having to get by with insufficient levels of expertise. This is partially attributable to the fact that a new, sectoral skills approach was not adopted at the time of Namibia's independence 26 years ago — and the problem has simply escalated as time has gone by.

The NDP4 recommends that education should be afforded much more attention if the country is to improve its competitiveness rating. It further recommends that those with the immense responsibility of educating the nation, and of ensuring that skills are efficiently transferred, are in fact equipped to do so (National Planning Commission, 2012a).

The matter of government policymaking is very complex, as the skills required to formulate effective policies and legislative frameworks, and create the right enabling environment so that aspirational policies can be translated into realistic programmes of action, transcend those that are typically acquired via traditional education and training programmes. They are more likely to be built up over time, under the mentorship of others, and should be of both the 'hard' and 'soft' skill variety. In addition (with reference to Lee Kuan Yew's philosophy), the policy implementation process is likely to be quicker and more effective if those tasked with implementation have a practical appreciation of the daily challenges faced by businesses operating at the coalface. This would be aided by government officials having had some private sector experience.

3.3.5 Namibia's competitiveness in the world

The World Economic Forum (2015: 4) defined competitiveness as: "the set of institutions, policies, and factors that determine the level of productivity of an economy". These then determine the level of prosperity that a country can realistically attain. The World Economic Forum combines 114 indicators into an index reflecting concepts that contribute to productivity. These indicators are grouped into 12 pillars (see Figure 3.1): institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labour market efficiency, financial market development, technological readiness, market size, business sophistication, and innovation (World Economic Forum, 2015).

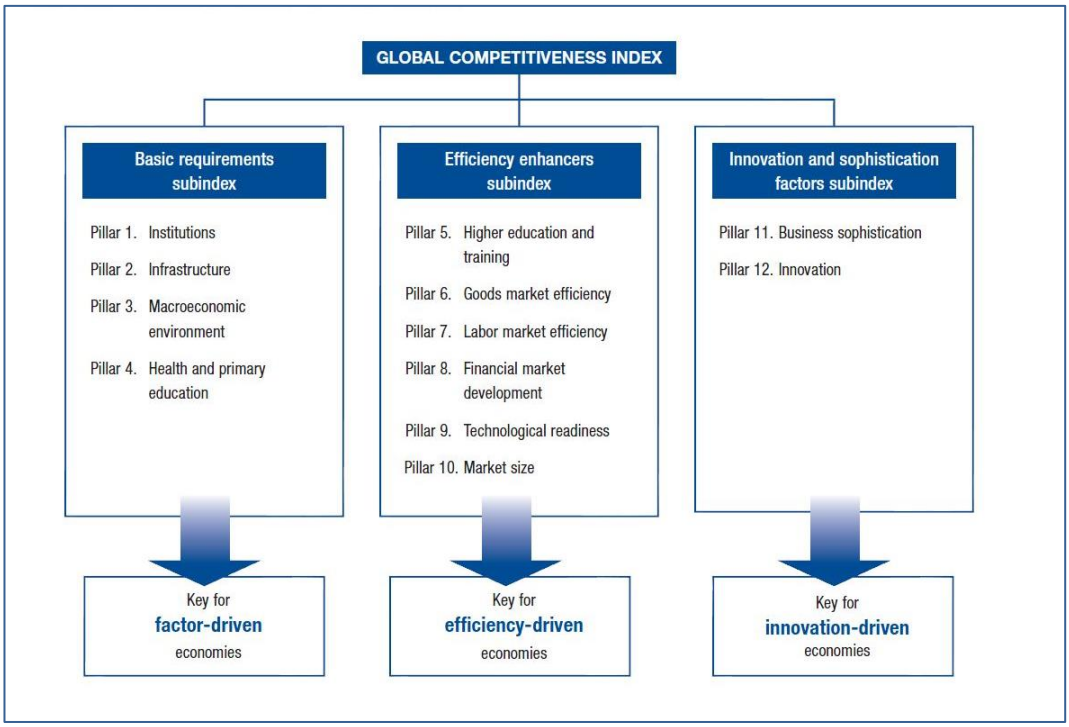


Figure 3.1 The Global Competitiveness Index framework. Source: World Economic Forum (2015)

The Global Competitiveness Report 2015/2016 indicated that Namibia was ranked 85th out of 140 countries (see Figure 3.2). One of the main reasons for the country's poor overall standing in the international rankings was a weak higher education and training system. The data used in the Global Competitiveness Report tied in with previous reports and assumptions that the education and training system in Namibia is not providing people with the necessary skills to engage in productive activities, with the result that skills challenges are being experienced in a number of sectors (African Development Bank, 2009).

The hardest hit sectors are typically those run by the government. Consequently, the implementation of the Minerals Policy and other policies are likely to be adversely affected. Namibia is known to have generally good policies but falls short when it comes to implementation.

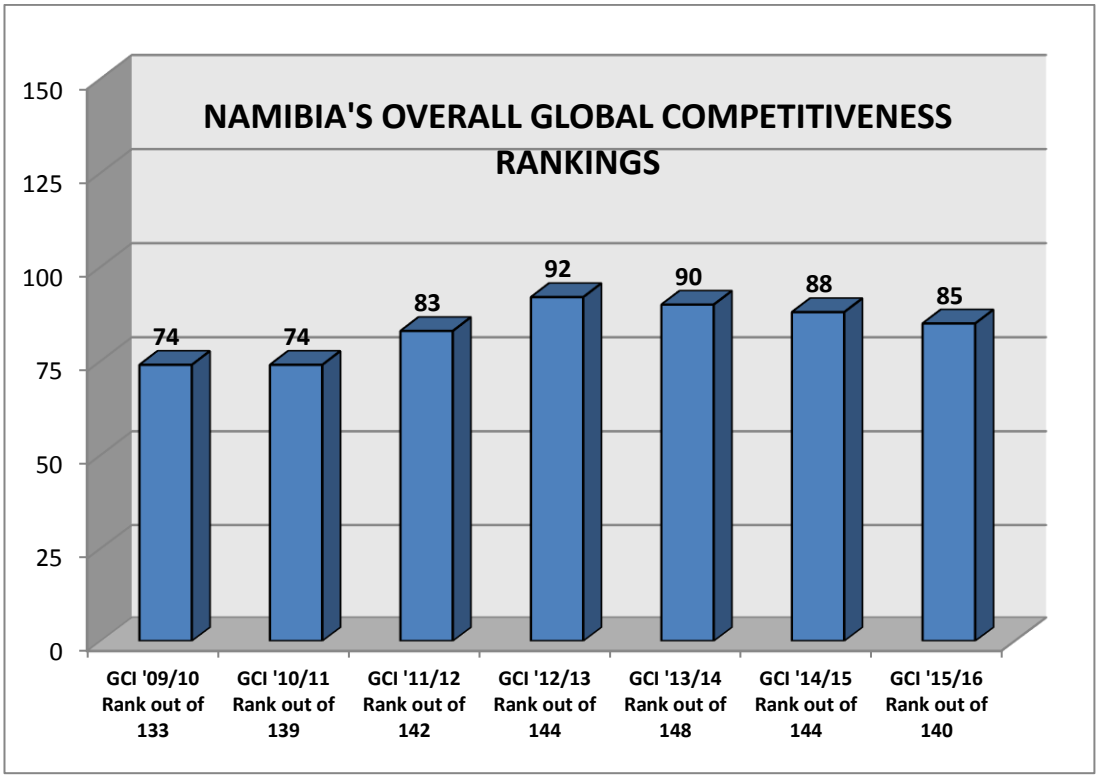


Figure 3.2 Namibia's overall global competitiveness rankings (2009/10–2015/16). Source: Compiled from World Economic Forum Reports (2009–2015)

There was a slight improvement in Namibia's 2015/16 global competitiveness ranking compared with that of previous years, which can be attributed to better performance in relation to certain pillars. However, an inadequately educated workforce remains a key challenge (see Figure 3.3). This factor has topped the list of challenges associated with doing business in the country since 2009.

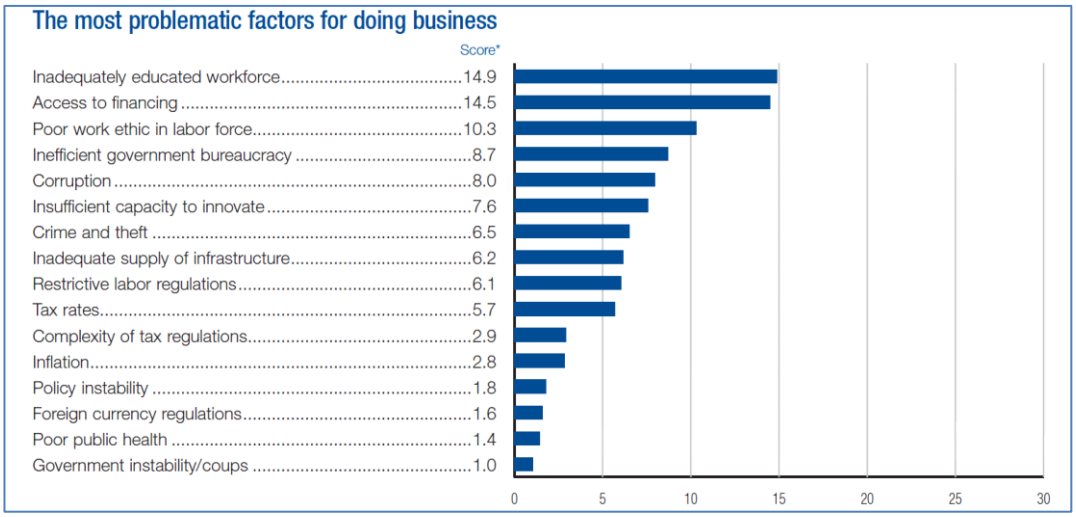


Figure 3.3 The most problematic factors associated with doing business in Namibia. Source: World Economic Forum (2015)

Clearly, the availability of skills required for conducting business in Namibia is a significant concern, with a poor work ethic exacerbating the situation. Inefficient government bureaucracy is not far behind. If the country is to deliver the kind of economic growth rates that are needed to seriously tackle unemployment, poverty and inequality, a paradigm shift is needed in the education and skills development arenas.

The poor quality of primary education and enrolment (see Figure 3.4) is one of the root causes of Namibia's skills challenges.

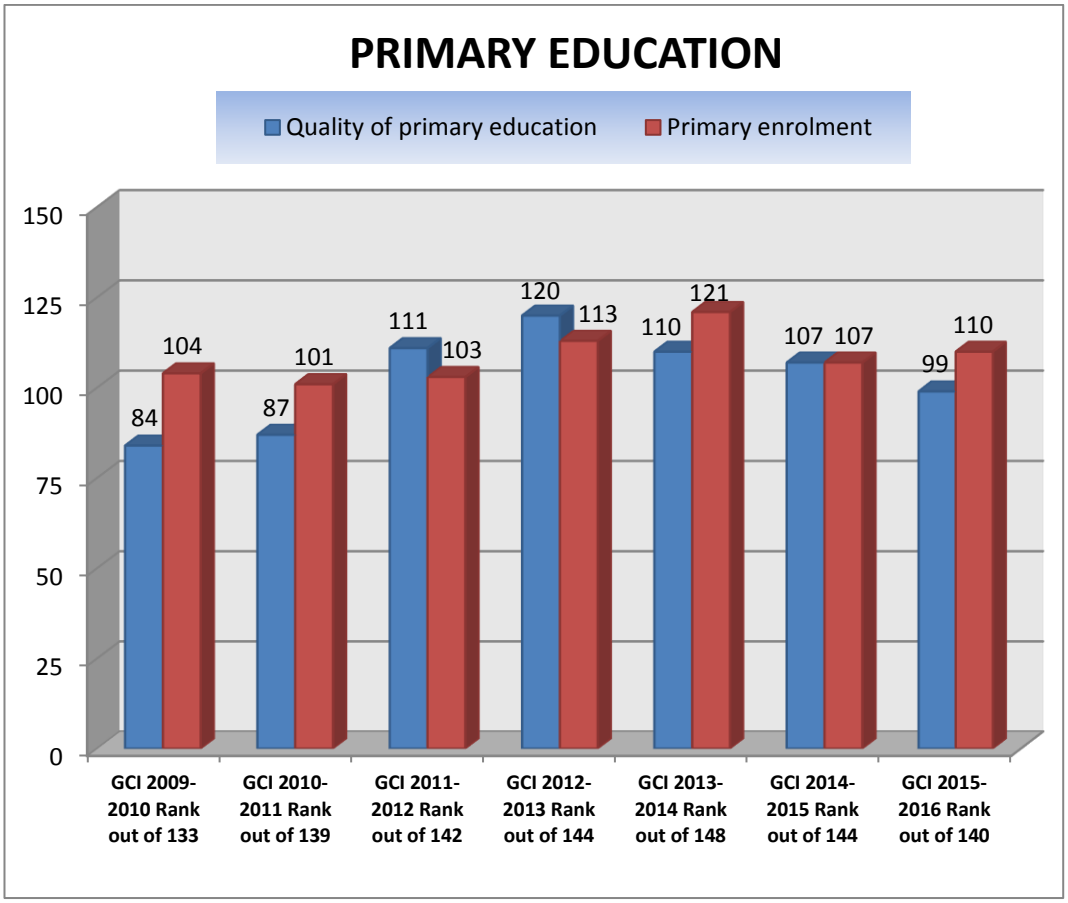


Figure 3.4 Primary education — quality of education and enrolment. Source: Compiled from World Economic Forum Reports (2009–2015)

The generally poor quality of lesson planning and delivery at the primary school level is linked to the fact that the teachers themselves have come out of a poor education system (National Planning Commission, 2012b).

According to statistics compiled by the Education Management Information System (EMIS) in Namibia's Education Ministry, there is a staggering school dropout rate. Some of the major causes are the extremely long distances that students have to travel to get to school, pregnancy, and high levels of poverty which force young people to abandon their studies to look for work to support their families.

Namibia's ranking in terms of higher education and training presents a fairly bleak picture. The secondary enrolment trend has worsened over the past few years due to high dropout rates in the junior school phase (see Figure 3.5).

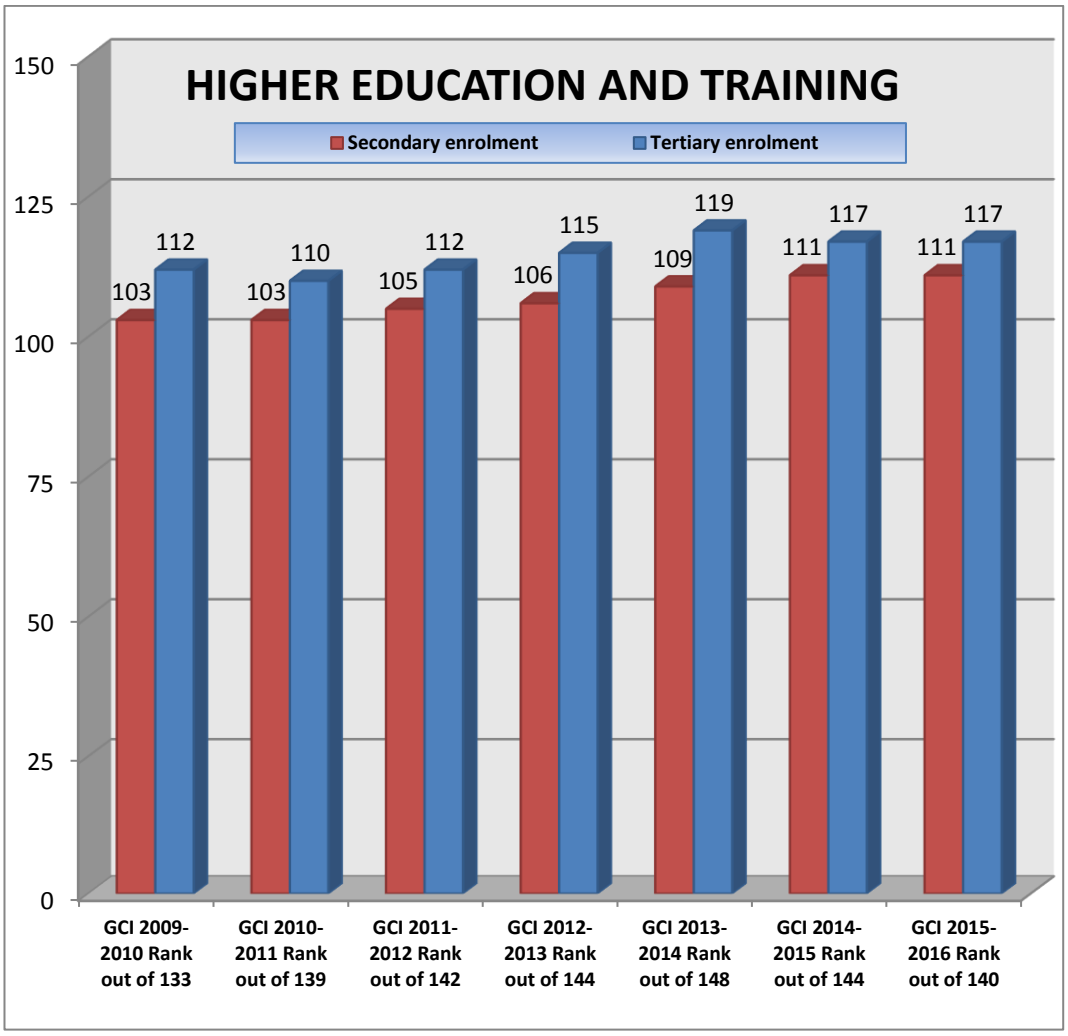


Figure 3.5 Higher education and training — secondary and tertiary enrolment. Source: Compiled from World Economic Forum Reports (2009–2015)

Tertiary enrolment in Namibia, in turn, has not shown any improvement in recent years due to poor performance in both the junior and secondary school phases. Educational standards at the tertiary level appear to be in a parlous state, with the quality of the education system (ranked at 96th place) and the quality of

mathematics and science specifically (ranked at 121st place) being contributing factors (see Figure 3.6).

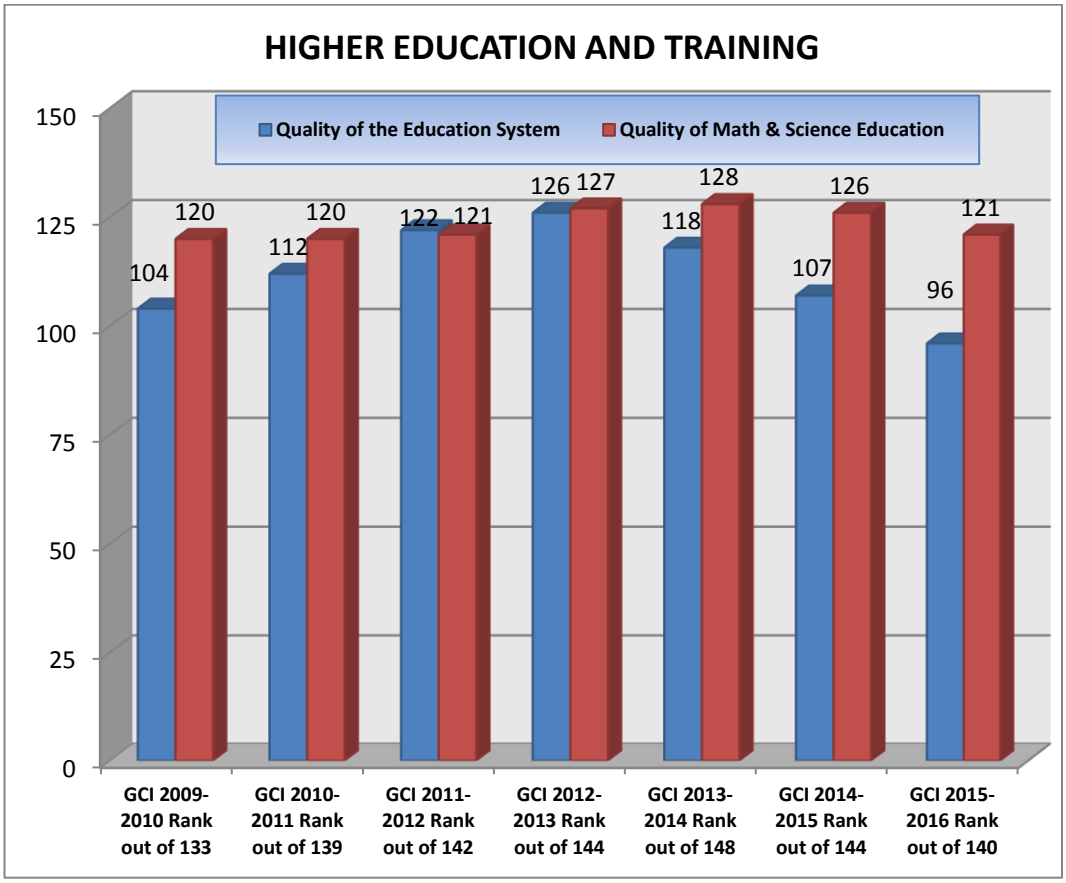


Figure 3.6 Higher education and training — quality of the education system, mathematics and science. Source: Compiled from World Economic Forum Reports (2009–2015)

When it comes to the innovation pillar, Namibia is doing fairly well, with the quality of scientific research institutions ranked at 88th place out of 140 countries surveyed in the 2015/2016 Index (see Figure 3.7). This is a good sign considering the country's desire to embrace new technologies and become more innovative in the delivery of goods and services. The data also reveals that the availability of scientists and engineers in Namibia has improved slightly in recent years although the country trails behind the more advanced, competitive nations in this regard.

On the subject of innovation, Fernandes (2014: 112) emphasised that if a country wishes to move away from a resource-based economic model (which is

characteristic of so many African countries) to a knowledge-based one, it needs to invest heavily in local R&D. This means that the higher education and training (including vocational training) systems need to improve their capacity to contribute directly and meaningfully to high-level knowledge creation.

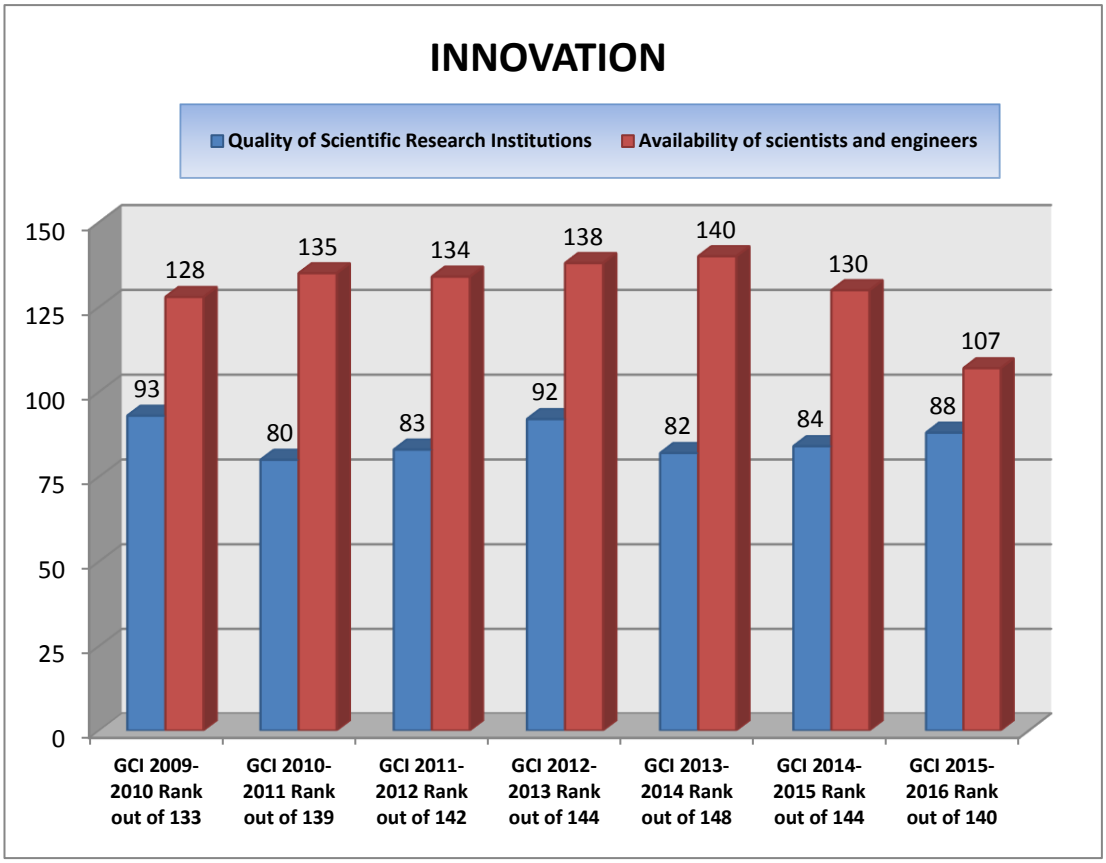


Figure 3.7 Innovation — quality of scientific research institutions and availability of scientists and engineers. Source: Compiled from World Economic Forum Reports (2009–2015)

Namibia's competitiveness shortcomings are further weakened by deteriorating results in the areas of business sophistication, technological readiness and market size (National Planning Commission, 2012b).

To acquire a more balanced view of Namibia's skills levels and potential, the researcher also analysed the results of the Global Talent Competitiveness Index (an initiative of INSEAD Business School, the Human Capital Leadership Institute in Singapore, and the human resources consultancy group, Adecco)

which shows countries' ability to chart a sustainable course between economic, social and political imperatives. The Global Talent Competitiveness Index 2015/2016 placed Namibia in 79th place out of 109 countries surveyed (Lanvin and Evans, 2015), highlighting the difficulties that Namibia faces in trying to balance its many socio-economic and political interests. Skills deficiencies are at the heart of the problem. The Global Competitiveness Index and the Global Talent Competitiveness Index both paint a worrying picture of Namibia's skills levels (in both the private and public sectors), which is having negative spill-over effects throughout the economy and making it difficult for well-meaning policies (including the Minerals Policy) to attract the necessary support and to be implemented effectively.

Clearly, the policy implementation process cannot be a hit-or-miss affair: it needs to follow a systematic approach, bolstered by strong institutions and the necessary financial and human resources. However, Namibia's shortcomings in the area of skills development in particular (both within the private and public sectors) are sending negative waves throughout the economy. The minerals sector is not immune and the Minerals Policy has been left adrift.

An integrated analysis of the reasons behind the implementation problems relating to Namibia's Minerals Policy appears in Chapter 4.

CHAPTER 4: RESEARCH METHODOLOGY, ANALYSIS AND FINDINGS

4.1 Introduction

Earlier in the report, it was stated that the main objective of the research was to identify the factors impeding the implementation of Namibia's Minerals Policy. This would be achieved by analysing, on the one hand, the quality of the supporting legislative framework and, on the other hand, the skills and capacity of government personnel in ensuring that the Minerals Policy bears fruit. The analysis (which also took into account developments in other areas of government and in the external environment) was informed by the literature review, relevant pieces of legislation, industry-based reports and commentaries, and inputs from a variety of stakeholders in or connected to the minerals sector in Namibia.

A grounded theoretical research methodology was used in the study. According to Strauss and Corbin (1990, cited in Burden and Roodt, 2007), grounded theory is an inductive approach, derived from the study of the phenomenon it represents. "Inductive analysis means that the patterns, themes, and categories of analysis come from the data; they emerge out of the data rather than being imposed on them prior to data collection and analysis" (Patton, 1980, cited in Bowen, 2006: 2). Burden and Roodt (2007) indicated that inductive analysis involves focusing on a particular area of study and then identifying relevant and meaningful insights and trends as they emerge.

The grounded theory was first proposed by sociologists, Glaser and Strauss (1967), in the 1960s, while Strauss and Corbin (with a nursing research background) are credited with having refined the approach (Bowen, 2006).

The process of data collection and analysis in the methodology is a continuous one which only stops when saturation has been reached (Locke, 2003, cited in Burden and Roodt, 2007). It offers a means whereby a researcher can adduce true meaning and understanding (Jones and Alony, 2011). These are derived from the data rather than from concrete entities.

Bowen (2006) explained that in a grounded theory study several different data sources may be used, although focusing on interviews can be helpful. He submitted that a research project using grounded theory can only be truly worthwhile if the emergent theory leads to well-informed and sound problem-solving.

Having collected data from a number of sources, the researcher conducted an integrated, qualitative analysis of the policy implementation process and arrived at a number of broad findings, which are discussed below. The main achievements and shortcomings in the implementation process are then summarised in a tabulated 'report card' using the 12 stated objectives of the Minerals Policy as points of reference (see Table 4.1).

4.2 Analysis Of The Minerals Policy Implementation Process In Namibia

Namibia has a vibrant minerals sector, which is making a strong contribution to GDP and employing large numbers of people. Minerals also constitute a significant share of Namibia's export basket and investment in the minerals sector has been fairly buoyant for a number of years. In fact, Namibia has come out favourably in various rankings as a very attractive location for mining-related investment. The researcher has established that, unlike several other African countries, Namibia has a stable political environment, fairly sound physical infrastructure and a transparent legal system, and these have been significant drawcards for mining companies.

Against this apparently favourable backdrop, Namibia's minerals sector is, however, performing well below par. The country's Minerals Policy, when it was launched in 2003, was a symbol of (and was intended to be an important vehicle for) what the government envisaged for the country in the years ahead — that is, accelerated economic and job growth, and much-needed development. Yet the hoped-for socio-economic revival in Namibia has remained elusive. Namibia's minerals sector is of enormous strategic importance to the country and the Minerals Policy highlights what needs to be done to realise the sector's potential. However, various hurdles have slowed the implementation process considerably.

The researcher attributes this to both 'technical' or structural issues, and human development/talent issues.

The Ministry of Mines and Energy (MME) is responsible for Namibia's mineral resources and was mandated in 2003 to formulate a Minerals Policy to guide the development of the minerals sector. The Minerals Policy has clear objectives that resonate with Namibia's current socio-economic realities, e.g. expand mining output, encourage greater local participation in mining, encourage more beneficiation and value addition, improve conditions for small-scale mining, improve education and training standards, engage in continuous R&D, uphold environmental and health/safety standards, and remain responsive to developments that impact the minerals sector's competitiveness and growth prospects. However, the Minerals Policy essentially lacks teeth because not only does it lack an implementation plan (with accountability areas, milestones and measurement arrangements), but it is not directly linked to the Minerals Act No. 33 of 1992, which pre-dated it. As a result, the legislative framework for the minerals sector takes its direction from the Act, while the provisions of the Policy remain guiding principles that are not enshrined in the law.

On a positive note, the Ministry of Mines and Energy (MME) is drafting a new Minerals Bill (in collaboration with the Commonwealth Secretariat) which, when passed, will replace the current Minerals Act. Here is an opportunity for the pertinent issues raised in the Minerals Policy to gain prominence in the Act. However, the current Act focuses more on mining rights and licensing (i.e. technical issues) and less on socio-economic imperatives, which are more the domain of the broad-based Minerals Policy. Clearly, the two documents need to work together. In addition, the Minerals Policy needs to be articulated into appropriate (expanded) legislation and regulations that are enforceable and measurable.

What Malawi has done in this area is impressive. Malawi's Mines and Minerals Policy of 2013 is accompanied by a comprehensive implementation plan, which covers: main policy themes, policy statements, policy objectives and related

strategies, defined activities and time frames, responsibility areas and outputs. The plan also specifies the financial and material resources needed to engage in various activities, and has built-in monitoring and measurement tools to aid the evaluation and review process.

In Namibia, there are several areas in which the reality has not caught up with the objectives outlined in the country's Minerals Policy of 2003. For example, there have been a number of new mines commissioned and more are in the pipeline, but much more exploration work could be done. Also, the mining industry is susceptible to prolonged strikes (which are attributable to tense labour-employer-government relations and an apparent inability or unwillingness to address these) and speculative activity (because of a lack of appropriate legal measures to control it).

Namibia's mineral exports are still largely of the unprocessed or low value-added types, which fetch relatively low prices in international markets. This inevitably constrains tax revenues. Contributing factors to low value-added types include: skills deficiencies, a lack of funding and technological know-how, a lack of access to appropriate raw materials, erratic electricity and water supplies, and the absence of specific legislation that makes it mandatory for a proportion of mineral yields to undergo beneficiation for export. The lack of a sufficiently broad-based regulatory framework in the mining industry has resulted in many mining companies under-reporting their activities and continuing to export minerals in a relatively raw or rudimentary state, which discourages the development of a viable manufacturing sector. It also means that the country's minerals sector remains in a fairly low skills/low value-added position in the value chain. Furthermore, the fact that mineral beneficiation and processing fall outside the MME's mandate (i.e. they are controlled by the Ministry of Trade and Industry because they amount to manufacturing) helps to complicate things.

However, the Namibian government has established a Joint Value Addition Committee (JVAC) to develop a value-addition strategy for the country. The Committee's main focus is to determine which minerals have the highest potential

for sustainable value addition. However, several hurdles need to be cleared for a culture of value addition to take root, from skills-related deficiencies and limited industrial capacity, to environmental concerns and the reaction of powerful international commodity cartels, which are not in favour of Namibia developing its beneficiation capabilities.

Many in Namibia are preoccupied with the environment and recognise the need to preserve natural areas as places of beauty and tourist attractions. As a result, the Environmental Management Act No. 7 of 2007 was introduced and Environmental Impact Assessments (EIAs) are a condition of mining licences being extended. However, there are many abandoned mines that have not been rehabilitated and these pose a threat to the delicate ecosystem and surrounding communities. The fact that Social Impact Assessments (SIAs) are not enforced exposes communities to economic and health risks when mining operations start up or wind down. Safety is also a priority in the minerals sector, and while the Ministry of Mines and Energy (MME) has a special safety division, the country's mine safety laws and regulations — which flow from the Mines, Works and Minerals Ordinance 20 of 1968 — are outdated.

It is government policy to make it relatively easy for local operators to obtain mining licences, sometimes on the proviso that they find technical and/or financial partners to strengthen their chances of success. However, a lack of skills and insufficient finance are common deterrents to local investment. The small-scale mining sector is particularly disadvantaged. Although the government has a special division dealing with small-scale mining, and offers both geological information and equipment, a lack of mining expertise among small operators (due to a lack of training) and their remoteness from main centres diminish their chances of success.

The problems in Namibia's education and training sector are well documented and debated, with the mismatch between the knowledge and skills produced in education and training institutions and those required by employers becoming increasingly apparent. The government has embarked on a number of initiatives

over the years to try and close the gap, such as establishing the Namibia Training Authority (NTA) to oversee a more industry-aligned skills development process, and establishing specialised institutions and courses to improve the skills base in the mining industry. However, knowledge and skills deficiencies continue to be endemic.

While an initiative like the NTA might have good intentions, the red tape that invariably accompanies it is very off-putting to the education and training communities because it adds to their costs and interferes with their ability to quickly react to changing market circumstances; it can also be confusing to the broad customer base. South Africa, for example, has found all this out to its regret after years of experimentation by government with different higher education and training models, which have served only to frustrate educators and skills development specialists. Much of the problem lies in the government's desire to control rather than support education and training endeavours in the country, a general suspicion of the private sector, and government's lack of experience (from the policy level down to the practical implementation level).

A generally poor formal education system (primary, secondary and tertiary) is a drain on Namibian society as it leaves the country without the necessary foundation on which to pursue an innovation strategy and build technical expertise. Maths and science are particular weaknesses. Many technical experts have to be imported from other SADC countries to work in Namibia's minerals sector, which exacerbates the skills problems even more and prevents the country from developing home-grown talent. Although a large proportion of the national budget is allocated each year to education and training, it never seems to be enough — which is rather a sign of misdirected or wasted expenditure and the perpetuation of a system that lacks proper checks and balances.

Skills shortages, gaps and mismatches are evident in both the private and public sectors, but they are often more acute in government where budgetary constraints, relative inexperience, high staff turnover, varying political agendas and an uncertain policy environment regularly take their toll. Various sources that the

researcher consulted pointed to skills deficiencies being a constraint in the Ministry of Mines and Energy (MME). For example, the 2013/2014 MME annual report stated that "the Ministry continues to experience high staff turnover, with 10 staff members resigning from the Ministry during the period under review". The annual report further indicated that 50% of positions remained unfunded and the budget for staff training was inadequate. Other reports highlighted that there had been delays in finalising certain legal matters because of a shortage of legal experts at the MME (Ministry of Mines and Energy, n.d. (b): 55).

Ultimately it should be the intention of all governments to ensure that policies are well integrated and lead to a more economically and socially enriched society. However, Namibia's minerals sector is not well aligned to other economic sectors in the country and therefore is not delivering the necessary socio-economic improvements, which would manifest in higher levels of investment in the manufacturing sector, more export-focused jobs and a steady reduction in poverty. Although the Minerals Policy states that the private sector should take the lead in exploration, mining, beneficiation and marketing, the fact that government registered the Epangelo Mining Company some years ago points to its conflicted stance over the control and management of mining operations in Namibia. This adds to policy uncertainty in the country, which investors are particularly sensitive to and wary of.

The MME's Strategic Plan 2012–2017 spells out the Ministry's strategic objectives, including skills improvement and enhanced staff performance. In the Strategic Plan are a number of Critical Success Factors (CSFs), including the need to "consistently measure, monitor and report the implementation of the strategy on a regular basis so as to know the status of the strategy at all times and if need be take necessary remediating actions; and to have the discipline and skills needed to implement the strategy successfully" (Ministry of Mines and Energy, n.d. (a): 14).

The theory is there, but putting it all into practice has proved to be very challenging for the Namibian government. For example, while one of the objectives of the Minerals Policy is to review the Policy on a regular basis to

ensure its ongoing relevance in the context of changing economic, social and political events and developments, the last Policy review process commenced in 2006 and is not yet complete. This signals a lack of ability, capacity and leadership, which in turn has resulted in a kind of inertia. Together these factors have conspired to create a situation in which there has been no implementation plan — which would have efficiently got the ball rolling in the beginning and covered the mechanics of the review process, including realistic time frames and remedial steps to take in the event of identified weaknesses and/or the need for changes in direction.

With the minerals sector being of such strategic importance to Namibia, this lack of attention has impacted the country's economic prospects and called into question the country's ability to offer a better and more sustainable economic future to its citizens. The challenges are immense but if they are not seriously addressed by government and private sector stakeholders, the situation will simply worsen.

However, the picture is not entirely gloomy — successes have also been clocked up over the years, which is evidence of various supportive interventions and favourable environmental factors. Table 4.1 offers a summarised 'report card' of the Minerals Policy implementation process over the years, showing both major achievements and shortcomings.

Table 4.1 'Report card' of the Minerals Policy implementation process in Namibia

No.	Objective	Achievements	Shortcomings
1	"Promote and stimulate investment in exploration and mining so as to discover new ore deposits that will lead to the development of new mines and also to maintain the existing ones."	• Since 2003, several new mines have been established, e.g. Husab-Swakop Uranium, Otjikoto-B2Gold Mine, Lodstone Namibia, Langer Heinrich Uranium, Areva Resources Namibia, Debmarine Namibia, Tschudi Mine-Weatherly Mining Namibia. • Mines in the pipeline include Craton Mining, North River Resources, Bannerman Mining Resources, Valencia Uranium, Zhonghe Resources Namibia, Reptile Uranium Namibia, Gergarub Zinc Project-Rosh Pinah and Skorpion Mines. • Almost all the mines in existence prior to 2003 have been maintained.	• There is much unutilised potential in terms of mining exploration in the country. • Exploration licences change hands outside the legal system. • Mining speculation tends to be rife and there are no legal measures in place to control it. • Speculative gains are often not spent on exploration activities in Namibia. • The mining industry is vulnerable to prolonged strikes due to a lack of ability/capacity/political will to effectively tackle labour disputes.
2	"Promote a conducive environment for the minerals sector that encourages and facilitates the active participation of all stakeholders."	• The 2014 Fraser Report rated Namibia the most attractive investment destination in Africa. • The Geological Survey of Namibia was voted the best in the world in 2014. • Mining licences are readily available to interested parties.	• Mining companies often fail to furnish full exploration details to the Ministry of Mines and Energy (MME). • No provision is made for Social Impact Assessments (SIAs), which makes communities vulnerable to the impact of mining operations starting up or winding

		• The government maintains a high-quality geological database.	down, as with the latter they could be deprived of employment and face health hazards.
3	"Promote and encourage local participation in exploration and mining."	• Measures have been introduced to make it easier for local entities to acquire mining licences. • Mining licences are extended on the proviso that the local entities concerned acquire technical and financial partners to help them develop their operations.	• Many local entities lack the money, skills and capacity to invest in mining operations, which has slowed the expansion of the industry.
4	"Promote and encourage maximum local beneficiation of mineral products to ensure that as many of the economic benefits as possible are retained in Namibia."	• Progress has been made in analysing beneficiation opportunities with the establishment of the government-run Joint Value Addition Committee (JVAC). • Export processing zones (EPZs) promote mineral beneficiation for export. • Significant progress has been made in diamond and semi-precious stones cutting and polishing. • Copper smelting is carried out locally. • Special high-grade zinc is mined at Skorpion Mine.	• Namibia's exports are largely unprocessed or low value-added. • Mining companies (backed up by large cartels) perpetuate the tendency to export commodities rather than more beneficiated goods. • There is no national beneficiation strategy in place or supporting legislation. • There is limited investment in the manufacturing sector. • Raw materials can be difficult to access. • Limited skills and capacity in the country are limiting the prospects for greater beneficiation.

			• The local processing industry is vulnerable to problems relating to security of supply. • The country's power and water supplies are unreliable. • The Ministry of Trade and Industry (and not the Ministry of Mines and Energy) controls beneficiation and processing activities in the minerals sector.
5	"Regularise and improve artisanal and small-scale mining so that it becomes part of the formal mining sector."	• The government has established a division that deals specifically with small-scale mining. • The government provides geological information and mining equipment to small-scale miners. • The government has made some attempts to form a small-scale mining cooperative in order to target assistance more effectively.	• Small-scale miners lack training in mining operations, which hampers their success. • Their remoteness from main centres makes it difficult for them to access government assistance.
6	"Promote research and development for improving technology in exploration, mining and mineral processing operations."	• The establishment of specialised units within educational institutions has reflects the government's desire to give more attention to technology-rich R&D.	• R&D is still quite rudimentary in the minerals sector. • Skills deficiencies limit the scope for high-level research. • There are some concerns about spending taxpayers' money on research in the minerals sector.

7	"Ensure the establishment of appropriate educational and training facilities for human resources development to meet the manpower requirements of the minerals industry."	• The government launched the Namibia Training Authority (NTA) to drive a more industry-aligned skills development agenda in the country. • The government has established new institutions, specialised units and courses to strengthen mining-related education. • The government has established a number of vocational training centres in the country to train artisans for various positions in the mining industry. • The government has established the Namibian Institute for Public Administration and Management (NIPAM) to enhance knowledge and efficiency among public servants.	• The quality of education and training in Namibia remains very low by global standards. • There is often a mismatch between the knowledge and skills acquired by graduates and trainees at a tertiary level and the requirements of public and private sector employers. • The introduction of the NTA and other regulatory processes can add to the cost of skills development and discourage education and training providers from operating. • The Ministry of Mines and Energy appears to have budgetary constraints where skills development is concerned.
8	"Promote and facilitate marketing arrangements to increase the economic benefits of the sector."		• The government is not involved in marketing the minerals sector (due, inter alia, to capacity constraints); mining companies conduct their own (individual) marketing. • Mining activities in the country are not well integrated with other economic sectors, and so ordinary citizens generally do not feel the

			benefits of mining.
9	"Ensure the adherence of the principle of socio-economic upliftment through appropriate measures."	• It is a relatively straightforward matter to obtain a mining licence, provided certain basic conditions are met.	• The minerals sector is not well aligned to other economic sectors in the country, and its contribution to socio-economic development is disappointing. • There is insufficient consultation across the different areas of government, resulting in policy uncertainty and/or incoherence.
10	"Ensure compliance with national environmental policy and other relevant policies to develop a sustainable mining industry."	• Environmental legislation is quite strong in Namibia, evidenced in, for example: the Environmental Management Act No. 7 of 2007 (and draft amendments in 2015), Strategic Environmental Assessment (SEA) Regulations and Environmental Impact Assessment (EIA) Regulations.	• There are gaps between the Environmental Management Act No. 7 of 2007 and the Minerals Act No. 33 of 1992. • The absence of proper monitoring systems and capacity has impeded the strict enforcement of the legislation. • There are no clear rehabilitation and/or after-care plans when mines are closed. • Businesses and communities have not been adequately instructed in environmental legislation and protection measures.
11	"Review on a regular basis the legal, economic, social and political aspects of the Minerals Policy, to ensure that it remains internationally competitive, that it adequately addresses the	• The Ministry of Mines and Energy (MME) is drafting (with the assistance of the Commonwealth Secretariat) a new Minerals Act to replace the Minerals Act No. 33 of 1992.	• A review of the Minerals Policy began in 2006 and is not yet complete. • The Ministry of Mines and Energy (MME) lacks the manpower and skills to review the Minerals Policy on a regular basis and

	mining industry's volatility and that it services the common good of Namibians."		recommend appropriate improvements.
12	"Ensure mining operations are conducted with regard to the safety and health of all concerned."	• The government has established a division that deals with mine safety issues. • Safety standards are generally upheld by mining companies.	• The Mines, Works and Minerals Ordinance 20 of 1968 and accompanying regulations, which are the points of reference where mine safety issues are concerned, are outdated. This introduces uncertainty in the area of legal rights and obligations at both the mining company and community level.

Source: Researcher's own analysis of multiple inputs

The next chapter will present the main conclusions of the study, and will offer recommendations to the Namibian government in general and the Ministry of Mines and Energy (MME) in particular on key focus areas and practical steps that can be taken in the short and longer terms to ensure that the implementation of the Minerals Policy is stepped up and becomes a vehicle for change in the country.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The study has revealed that the implementation of Namibia's Minerals Policy has been lacklustre at best, hampered by numerous problems — from the lack of an actual implementation plan (which would provide the parameters for specific accountability areas, and proper monitoring and evaluation) to a disconnect between the Minerals Policy and the now outdated Minerals Act. The latter has resulted in a lack of focus on contemporary needs and concerns, such as ensuring that the minerals sector becomes more inclusive and a source of more value-added export opportunities.

This chapter focuses on the leading causes of the weak Minerals Policy implementation process, as determined from the research, and offers recommendations to government on how the implementation process can be enhanced so that it delivers more tangible and inclusive benefits to the people of Namibia. It concludes with suggestions for future research.

5.2 Main Conclusions

The implementation of Namibia's Minerals Policy is (as with other policies) the responsibility of the government — in consultation, of course, with the private sector and other relevant stakeholders. The literature review revealed the results of several important studies on what is required for policies to be effectively implemented. Namibia's Ministry of Mines and Energy (MME) itself offers a broad methodology for the implementation of its Strategic Plan 2012-2017. Yet the study has shown that, in a number of ways, the Minerals Policy has failed to take effect.

Namibia's minerals sector is not beset with the kind of problems that deter investment in some other African countries (e.g. political instability and overt interference, transport difficulties induced by poor physical infrastructure, and the absence of the rule of law). It can be concluded that the main problems are more

concentrated in the minerals sector and are structural in nature, with some external environmental factors (which are more difficult for the mining fraternity to influence) also standing in the way.

From a broad perspective, the fact that a number of stakeholders interviewed during the study were aware of the weak implementation of the Minerals Policy and, furthermore, that the literature provides a number of examples of effective implementation strategies suggests that there is insufficient political will and/or capacity within government to effect the necessary changes.

Political will is not a clear-cut concept. The absence of political will, for example, is often evidenced in political appointments and agendas taking precedence over the needs of society, and policy-making and decision-making being short term in nature. This is out of sync with the goal of economic sustainability, which requires long-term planning and investment in R&D, creating economic value through beneficiation/manufacturing, building a sound and inclusive education and training system, and staying continuously abreast of what is needed for the country to remain competitive. Such pursuits (with the results often only being seen well into the future) require high levels of experience and commitment. Often a champion (or collection of champions) is needed to change existing mind-sets and galvanise relevant parties into action.

Clearly, in Namibia's case, the success of the Minerals Policy implementation process depends to quite a large extent on there being sufficient political will to take the problems seriously and effect the necessary changes. To bring plans and initiatives to fruition, government officials and other stakeholders also need skills and capacity (i.e. sufficient financial, physical, technological and human resources to perform work to an acceptable standard). Both political will and skills/capacity appear to be limited amongst government institutions that have been tasked with rolling out the Minerals Policy, which has given rise to three main impediments to the implementation process:

- An implementation plan has not been formulated for the Minerals Policy. This is a serious weakness as it means that there are no real guidelines to the

implementation process (including ensuring that the provisions of the Policy are anchored in strong laws and regulations), and no measurable targets or clearly defined accountability areas. It effectively removes the urgency from the whole process and perpetuates the tendency towards exporting commodities rather than higher value, beneficiated goods. Investment, in turn, is largely directed at low value-added activities, which prevents the economic potential of the minerals sector being exploited. A complicating factor is that the Ministry of Trade and Industry (rather than the Ministry of Mines and Energy) controls beneficiation activities in the minerals sector, with the result that the goal of greater beneficiation is not on the MME's immediate radar screen.

- There is a lack of alignment between the Minerals Act No. 33 of 1992 and the Minerals Policy. In fact, the provisions of the Minerals Policy have not been incorporated into the Act and so there is no specific legal and regulatory framework governing the Minerals Policy. Although its various objectives and underlying themes are laudable from an economic and industrial development perspective, the Policy remains a document largely without legal enforceability or 'teeth' (significance). As a result, much unauthorised mining speculation takes place and exploration licences are often awarded outside of the formal legal process. The lack of Social Impact Assessments (SIAs) leave communities vulnerable when mining operations are terminated. Furthermore, mining companies often fail to provide full details of their exploration activities to the Ministry of Mines and Energy (MME), which gives a distorted picture of the contribution of mining to the Namibian economy. Another problem is that the roles of the government and the private sector in mining operations have not been clearly defined, leading to both sides sometimes deviating from traditionally accepted mandates and creating unhealthy competition.

- The absence of a plan and a proper legal and regulatory framework for those activities and outcomes envisaged in the Minerals Policy has led to those

government institutions ostensibly overseeing the Policy's implementation operating in something of a vacuum. This has inevitably made it difficult for proper skills development and capacity building to take place both within government and the mining community (including small-scale miners) and has diminished such institutions' effectiveness. Moreover, private sector entities generally lack proper incentives to go the beneficiation and global/regional value chain route, which would potentially stimulate the economy in new ways. Compounding this problem is the fact that many people in government and the private sector go into their jobs with inadequate economic or industry knowledge and practical skills — a legacy of a generally poor schooling and tertiary education/training environment in the country.

Other factors negatively affecting the implementation of the Minerals Policy (but which fall outside the direct control of the Ministry of Mines and Energy) include the following:

- The investment community (which is the backbone of the minerals sector in Namibia) has not viewed the introduction of policies such as the NEEEF in a favourable light.
- The minerals sector in Namibia is not well aligned to other economic sectors in the country, which puts many of the Minerals Policy's broad economic goals out of reach. To advance the Minerals Policy, it goes without saying that government ministries and departments need to work together (along with relevant external stakeholders) to bring about economy-wide solutions, especially where the well-being of communities and the environment is concerned.
- Poor policy implementation is not confined to the Ministry of Mines and Energy (MME); it is evident in other ministries as well, such as education, energy, trade and industry, and science and technology. In addition, Namibia's trade policy is not particularly robust judging from the general lack of enthusiasm to embrace a more value-added export strategy and to expand beyond traditional (industrialised) markets.

- Namibia's minerals are a finite resource and will become progressively depleted. The profitability of the sector is at risk if new thinking is not applied to how to diversify and become more sustainable.

Notwithstanding the above impediments, prospects for the implementation of the Minerals Policy could be given a boost by the following:

- The formulation of a new Minerals Act constitutes an excellent opportunity to create a solid legislative framework for the Minerals Policy, which, in turn, should fast-track the socio-economic improvements envisaged in the Policy.
- Namibia remains a very attractive investment destination for mining.
- The award of mining licences to interested parties does not appear to be mired in red tape.
- Progress has been made in establishing specialised education and vocational training programmes for the mining industry and putting the building blocks in place to establish professional diamond and semi-precious stone cutting and polishing facilities in the country.

The researcher avers that the null research hypothesis presented in Chapter 1, i.e. 'Insufficient skills and capacity within government in Namibia have resulted in the government's failure to take the necessary legal and practical steps to ensure the effective implementation of the country's Minerals Policy' is therefore correct.

5.3 Recommendations

Following on from the conclusions outlined above, below are recommendations for Namibia's Ministry of Mines and Energy and/or other stakeholders. (See also Table 5.1.) Specific champions of different aspects of the Minerals Policy should be identified to give the conceptualisation and rollout project momentum and keep parties on track (and accountable). These champions are most likely to be drawn from specific ministries, depending on their focus areas. Part of their responsibility could be to ensure that the main features of the Minerals Policy (and

the underlying implementation plan) are disseminated to their broad constituencies to promote understanding and buy-in.

5.3.1 Formulate an implementation plan

The need for an implementation plan for Namibia's Minerals Policy (which is transparent, thorough and realistic) has been highlighted on a number of occasions in this research report. Without such a plan, responsible parties are unable to turn goals and objectives into activities, to track progress, to make adjustments along the way or to choose a whole new strategic direction if circumstances warrant it (Mtegha, 2005: 165). Formulating such a plan and ensuring that it is set in motion is a high priority for the Ministry of Mines and Energy (MME).

5.3.2 Align the new Minerals Act with the Minerals Policy

With the formulation of a new Minerals Act currently in progress to replace the older Minerals Act No. 33 of 1992, it is hoped that the much-needed coherence between the new Act and the Minerals Policy will be achieved. To effect this, though, the Ministry of Mines and Energy (MME) will need to ensure that it has consulted all relevant stakeholders, and has a strong legal team in place to negotiate the inclusion of the necessary provisions in the Act and to participate in revising and expanding the legal/regulatory framework to fully operationalise the Minerals Policy so that it will have the desired impact on other sectors of the economy. The MME, working with the Ministry of Trade and Industry in particular (which regulates mineral beneficiation and processing), also needs to review the Minerals Policy more frequently to ensure that it remains responsive to external conditions and national and sectoral priorities.

5.3.3 Upgrade the education system

The formal education system in Namibia is clearly in need of a serious overhaul; yet this cannot be achieved quickly or at low cost. While fundamental transformation is needed at all levels, helped by enlightened leadership and benchmarking against competitive nations, an interim strategy could be to form

partnerships with South African or other regional education partners. This would quicken the pace of knowledge transfer and keep implementation costs low. The use of technology and digital teaching (provided the telecommunications infrastructure in the country could support it) would be an important element in upskilling teachers/educators and extending lessons to scattered communities. As far as the minerals sector is concerned, the Ministry of Mines and Energy (MME) should work with the education sector (particularly private providers, including those in other SADC countries) to ensure that education syllabi prepare young people for the demands of the work place — both in the public and private arenas.

5.3.4 Boost skills development

Those in government who are charged with national skills development are advised to simplify training provider registration and accreditation procedures, so that skills development becomes an attractive and accessible option for employers and employees alike. At the same time, training incentives (without the usual red tape) should be provided to public and private sector employers (e.g. tax deductions or subsidies for courses) to stimulate demand. This would also have the effect of growing the training provider community which typically faces high levels of competition (even, worryingly, from government which should have a different focus).

As with education, training partnerships could be entered into with experienced entities from South Africa and elsewhere, using technology where possible to reach more people and make training more flexible and less expensive. To ensure that the minerals sector benefits from skills development in the country, the MME should work with skills development authorities and private sector specialists to ensure a closer alignment between the mining-related competencies required in the workplace and those acquired through typical training institutions and interventions.

As skills and capacity limitations in government are at the core of the Minerals Policy implementation problem, special attention must be given to these areas so that implementation problems become a thing of the past. Stronger emphasis

should also be placed on skills retention, accompanied by adequate remuneration for different levels of skilled work. Furthermore, government personnel need to develop competencies in policymaking and the formulation and execution of strategies and practical action plans. Leadership training and the infusion of accountability are also crucial for people holding certain positions.

5.3.5 Forge close strategic links with other government and private sector entities

The minerals sector does not operate in isolation from other economic sectors. It relies on transport, trade, education, telecommunications, finance and many other services to function effectively. Greater cooperation is needed between these various stakeholders so that relevant cross-cutting issues can be identified and collective solutions and strategies formulated and rolled out.

For example, Namibia's Minerals Policy has significant implications for the country's trade and industrial policies, and vice versa. At the root of all these policies is the need to develop the country's industrial base and to export more value-added goods, leveraging available upstream, downstream and side-stream linkages. It is common, though, for trade, industrial and other policies to remain aloof from one another, having been devised in organisational silos. The government of Namibia would be breaking new ground among many of its regional neighbours if it were to ensure that its Minerals Policy, trade and industrial policies were clearly aligned and would give the minerals sector greater momentum and a stronger foothold in regional and global markets. A Minerals Beneficiation Policy, which has been mooted, could help to drive a stronger value addition agenda.

In addition, balancing environmental, health and safety, and commercial demands is one of the most difficult tasks of policymakers operating in the minerals sector — often because short-term objectives (which deliver quick results) clash with longer term objectives (which deliver more sustainable solutions). In the absence of an implementation plan for the Minerals Policy, it is relatively easy to allow short-term gains in profitability and jobs to overshadow the duty to preserve the

environment and people's health and well-being in the long term. However, greater adherence to a Minerals Policy implementation plan (which involves cooperation in many areas) will put these issues into much sharper relief and the Ministry and Mines and Energy (MME) and other officials will need to be well-prepared to manage the conflicting opinions that could be unleashed.

5.3.6 Clarify public sector and private sector roles

It is important for clear parameters to be set for public and private sector involvement in mining operations. The Minerals Policy wisely states that the private sector should take responsibility for exploration and physical mining operations, while the government should play a supporting role — ensuring an attractive investment climate in the country, administering the mining licensing system, enforcing environmental legislation, and performing various other auxiliary services. When the government ends up competing with the private sector, it distracts the former from its legislative and oversight responsibilities, and makes it difficult for smaller entities to get involved in the industry.

5.3.7 Improve investment rules and incentives

Although Namibia has done well so far in attracting investment to its minerals sector, the mixed reaction to the NEEEF policy provided the government with an early warning that potential investors could be dissuaded from investing if they perceive the independence of their operations and profitability as being threatened. Investment rules and incentives should be the result of candid and thorough negotiation between a range of stakeholders to improve the chances of investment remaining in the country for an extended period and hopefully being increased in the face of favourable socio-economic and political conditions. With so much mining-related knowledge resting with expatriates who operate in Namibia, it would be prudent to make knowledge or skills transfer a condition of (but packaged as an incentive) investing in the country's mining sector.

5.3.8 Ensure the sustainability of the minerals sector

Although the minerals sector is not immediately threatened by the exhaustion of its diamonds, uranium and other natural resources, declining reserves will one day start to be felt. Even before that, increasing levels of mining activity will be having a noticeable adverse effect on national parks and rural settlements. Sustainability options for Namibia include developing a competitive advantage in technical know-how of mining operations, which would be exportable as a service. Norway and Iceland, for example, have become global authorities in the intricacies of oil and geothermal power production, respectively, which translate into valuable sources of revenue as they face waning output from these industries in the years ahead.

Table 5.1: Recommendations based on main conclusions

Action	**Responsible actors**	**Champion**
Develop a Minerals Policy implementation plan, together with the required institutional as well as monitoring and evaluation arrangements.	Relevant public and private sector stakeholders	Ministry of Mines and Energy
Time frame: Immediate to short term [1]		
Action	**Responsible actors**	**Champion**
Align the new Minerals Act with the Minerals Policy, ensuring that provisions in the latter are included in the former, and erect the necessary legal/regulatory framework to operationalise the Minerals Policy.	Relevant public and private sector stakeholders	Ministry of Mines and Energy (in close association with the Ministry of Trade and Industry)
Time frame: Medium to long term [2]		
Action	**Responsible actors**	**Champion**
Upgrade Namibia's education	Relevant public and	Ministry of Mines

system to ensure higher standards and greater relevance of programmes to industry, drawing on private sector expertise and using digital technology where possible.	private sector stakeholders (including other SADC countries)	and Energy, Ministry of Education
Time frame: Medium to long term [2]		

Action	**Responsible actors**	**Champion**
Upgrade Namibia's national training system to ensure easier access for employers and employees (especially SMEs), more industry-specific offerings, and more incentives to participate in continuous training and development.	Relevant public and private sector stakeholders (including other SADC countries)	Ministry of Mines and Energy, key industry bodies
Time frame: Medium to long term [2]		

Action	**Responsible actors**	**Champion**
Forge strong strategic relationships with other government ministries/departments, e.g. trade, telecommunications, environmental affairs, tourism, etc. and private sector bodies	Relevant public and private sector stakeholders	Ministry of Mines and Energy, Ministry of Trade and Industry, industry bodies
Time frame: Immediate to short term [1]		

Action	**Responsible actors**	**Champion**
Clarify public vs. private sector roles in the minerals sector	Relevant public and private sector stakeholders	Ministry of Mines and Energy, industry bodies
Time frame: Immediate to short term [1]		

Action	Responsible actors	Champion
Improve investment rules and incentives for the minerals sector	Relevant public and private sector stakeholders	Ministry of Mines and Energy
Time frame: Medium to long term [2]		

Action	Responsible actors	Champion
Ensure the sustainability of the minerals sector by pursuing environmentally friendly diversification strategies, incorporating appropriate technology and skills transfer	Relevant public and private sector stakeholders	Ministry of Mines and Energy, industry bodies
Time frame: Medium to long term [2]		

[1] Within one year (short term)
[2] One to two years (medium-term) or more (long term)

5.4 Further Research

With reference to the various issues raised in this research report, there are a number of areas that lend themselves to further research.

First, a comprehensive and systematic survey (using, for example, structured questionnaires) could be conducted among groups of stakeholders to probe their perceptions of the opportunities and challenges presented by Namibia's minerals sector, and what specific issues need to be addressed in the new Minerals Act, the supporting legal and regulatory framework, and the Minerals Policy (which is subject to review from time to time). The findings could be directed at Namibia's Ministry of Mines and Energy (MME) and Ministry of Trade and Industry (MTI).

Second, in-depth research could be conducted into skills and capacity deficiencies in the minerals sector (both in government and the private sector), using a survey approach and gap analysis methodology, with questions based on best practices drawn from other countries' minerals sectors. The findings could be used to inform a proposed turnaround strategy that would be jointly formulated by

relevant government ministries and departments (e.g. MME, MTI and Education), universities and TVET institutions in Namibia.

Third, research could be conducted into the experiences of other countries that have pursued a mineral beneficiation-for-export strategy, focusing on the sequence of steps they have followed, what has worked well, what problems they have encountered along the way (and why), and what the key lessons have been which will help to steer Namibia's own beneficiation drive.

Finally, an investigation could be conducted into the policy implementation process in other economic sectors in Namibia (e.g. manufacturing, education, transport, ICT, etc.) which, using the conceptual model outlined in Chapter 3 of this research report and other reference points, would be aimed at highlighting particular successes and stumbling blocks to date. This would go a long way towards revealing what needs to be done to turn broad policy statements into committed and measurable actions, and lay the foundation for greater value addition and future sustainability.

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